An Integrated Thesis Examining the Influence of Casino Loyalty Program Membership on Gamblers' Attitudinal and Behavioural Loyalty

by

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Abstract

Every major casino corporation offers their customers the opportunity to enroll in a brand-affiliated loyalty program. These programs serve as marketing strategies designed to foster attitudinal (i.e., trust and satisfaction with the brand) and behavioural (i.e., purchase intentions and actions) loyalty among customers by way of granting members rewards in exchange for making purchases. It is the hope that through granting members rewards, gambling expenditure will be increased, thus generating profits for the casino. However, unlike loyalty programs in other industries, casino loyalty programs reward members for engaging in gambling—an inherently addictive activity. Despite this, there is a paucity of research that has applied knowledge from the field of responsible gambling studies to help us understand how loyalty program membership influences the attitudinal and behavioural loyalty of members. In the current work, I present an integrated thesis that includes three manuscripts (six studies in total) that sought to expand the knowledge base on the aforementioned issue. In the first manuscript, I used two studies to test the hypothesis that loyalty program tier status and disordered gambling symptomatology would have an interactive effect on the attitudinal and behavioural loyalty of members, such that the highest level of loyalty would be observed among high tier status, high risk gamblers. In the second manuscript, I investigated whether positive play (i.e., responsible gambling beliefs and behaviours) is predictive of attitudinal (Study 1) and behavioural loyalty (Study 2), and whether this predictive utility would be maintained after accounting for disordered gambling symptomatology. In the final manuscript, I examined the potential benefits of belonging to a casino loyalty program for both players and industry. In two studies, I tested whether incentivizing responsible gambling tool use increases both willingness to use responsible gambling

tools and attitudinal loyalty. Results from the current work will help responsible gambling researchers, policy makers and industry have a better understanding of how players may be affected by casino loyalty program membership.

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Preface

The following dissertation is designed to be read as an integrated thesis. In an integrated thesis, a student's dissertation is based on published papers, conference proceedings, or papers awaiting publication. This type of thesis contrasts with the standard monograph thesis. Importantly however, the quality and ethical standards for an integrated thesis are the same as those that apply for a monograph thesis. The current integrated thesis is comprised of a literature review, one accepted paper and two papers in preparation for publication that are composed of research studies that examine the influence of casino loyalty program membership on players' attitudinal and behavioural loyalty. Due to the structure of the integrated thesis, each chapter is designed to be read as its own standalone document suitable for publication. For this reason, there will be similar theoretical rationale and literature review repeated throughout the document. Despite the chapter-based presentation, the document should still read as a cohesive and unified line of research.

Disclaimer: Akadémiai Kiadó Zrt. is the publisher of the manuscript in Chapter Two entitled "On Being Loyal to a Casino: The Interactive Influence of Tier Status and Disordered Gambling Symptomatology on Attitudinal and Behavioural Loyalty." The publisher has the exclusive right to first publication of the article. However, the publisher has granted permission to include the article in the dissertation (please see Annex 1). First publication of the material: Hollingshead, S. J., Wohl, M. J. A., & Davis, C. G. (in press). On being loyal to a casino: The interactive influence of tier status and disordered gambling symptomatology on attitudinal and behavioural loyalty. *Journal of Behavioural Addictions.* https://doi.org/10.1556/2006.2021.00046

Student Statement – Co-Authored Material

The integrated thesis herein presents research from 3 manuscripts (1 accepted, 2 in preparation) that were co-authored with Dr. Michael Wohl and Dr. Christopher Davis. Although this work was done in collaboration, I was responsible for setting up and conducting the research, obtaining the data and analyzing the results, as well as preparing and writing the material presented in the thesis document. As the lead author on all three manuscripts, I was highly involved in formulating the key hypotheses, designing the research methodology, and interpreting the findings. I was responsible for drafting the initial version of all three manuscripts, and Dr. Wohl and Dr. Davis provided recommended suggestions and edits to the drafts. All co-authors have provided permission for the inclusion of the work in the doctoral thesis (see the below signed and Contributor Document 1).

[redacted]

Samantha J. Hollingshead

Supervisor Statement – Co-Authored Material

As the graduate supervisor of Samantha Hollingshead, I verify that the above statement is true and accurate. I also verify that Samantha Hollingshead provided significant contribution to all included manuscripts.

[redacted]

Michael J. A. Wohl

Chapter One

Casino Loyalty Programs through a Responsible Gambling Lens

Loyalty programs are marketing strategies designed to foster positive company-customer relationships, create brand value, and improve customer loyalty (Dowling & Uncles, 1997; Uncles et al., 2003). To achieve this end, members of the program are offered both tangible (e.g., free merchandise) and intangible (e.g., personalized service) rewards in exchange for purchasing company goods and services (Berman, 2006). It is the hope that through using personalized communication and granting players rewards, members will become more attitudinally (i.e., trusting and satisfied with the brand) and behaviourally (i.e., more frequent revisit and repurchase behaviour) loyal, resulting in an increase in profits for the company (Henderson et al., 2011; Watson et al., 2015).

In fact, loyalty programs have become omnipresent, with almost all businesses in the hospitality and retail industries having incorporated these programs into their business models (Bond Brand Loyalty, 2017). The gambling industry is no different. Indeed, all major casino corporations (nationally and internationally) now ask their customers to enroll and become a member of their exclusive and proprietary casino loyalty programs (Statista, 2020). But do loyalty programs in the gambling industry achieve their aim? That is, do loyalty programs harness attitudinal and behavioural loyalty? A growing body of literature (e.g., Barsky & Tzolov, 2010a; Hwang et al., 2019; Lucas & Spilde, 2017; Tanford & Baloglu, 2013; Wohl, 2018) has sought to answer this question.

Of note, however, most research on the efficacy of loyalty programs and their ability to foster loyalty has been conducted using a business marketing lens. That is,

research has focused on understanding how to improve casino loyalty programs in terms of engagement and profitability (Barsky & Tzolov, 2010b, Min et al., 2016). Almost no attention has been directed toward whether factors associated with responsible gambling (i.e., gambling within an affordable limit) or problematic gambling (i.e., excessive spending) influence player loyalty to a casino brand. This represents a considerable gap in the literature.

Responsible gambling researchers may provide novel insight to help identify which members may be more likely to be attitudinally and behaviourally loyal. As an example, gamblers who exhibit positive play habits (i.e., beliefs and behaviours demonstrative of safe, responsible gambling) tend to be more satisfied with their gambling experience than gamblers who do not engage in positive play (Wood & Griffiths, 2008). The increased level of satisfaction may be indicative of higher attitudinal loyalty among positive players relative to players who exhibit more problematic gambling behaviours (e.g., excessive spending). Conversely, disordered players spend more money gambling than positive players (Williams & Wood, 2007), and thus, will have higher levels of behavioural loyalty.

From the perspective of generating profits, it would benefit industry to understand how factors associated with responsible gambling influence player loyalty and how to use this information to implement program changes that benefit both their customers and their larger company. Moreover, from a corporate social responsibility perspective, it is important to understand whether loyalty programs undermine responsible gambling, as well as whether these programs could be leveraged to facilitate responsible gambling habits among members. My dissertation research will begin to fill this gap by using a

responsible gambling lens to examine the influence of casino loyalty program membership on attitudinal and behavioural loyalty.

Loyalty Programs: A Broad Overview

Typically, companies measure customer loyalty along two main dimensions: attitudinal and behavioural loyalty (Dick & Basu, 1994). Attitudinal loyalty refers to the extent to which the customer trusts the company and is satisfied with their products and/or services (Baloglu, 2002; Gomez et al., 2006; Jones & Taylor, 2007; Tanford & Baloglu, 2013). Additionally, attitudinal loyalty applies to the emotional connection or sense of identification with the brand (Kang et al., 2015; Mattila, 2001). In contrast, behavioural loyalty is reflected in the actual behaviours of the customer that are demonstrative of loyalty. This form of loyalty refers to how often a customer revisits and repurchases company goods, as well as the extent to which they purchase company goods over similar competition (i.e., share of wallet) and endorse the brand by word of mouth (i.e., recommending the company and its products to potential customers; Baloglu, 2002; Baloglu et al., 2017; Cheng, 2011; Cossío-Silva et al., 2016; Dick & Basu, 1994). Attitudinal loyalty precedes behavioural loyalty; however, high levels of both attitudinal and behavioural loyalty are required to produce a truly loyal (i.e., exclusive patron) and profitable customer (Bandyopadhay & Martell, 2007; Engel & Blackwell, 1982; Kumar & Shah, 2004). One of the central means companies use to create and maintain both attitudinal and behavioural loyalty is by offering customers the opportunity to join a loyalty program, where they can receive rewards in exchange for their patronage (Uncles et al., 2003).

Loyalty programs are primarily designed to maintain and increase loyalty among already existing customers (Berman, 2006). Such a strategy rests on the business principle that it is more cost effective to increase both positive brand perceptions (i.e., attitudinal loyalty) and purchase behaviour (i.e., behavioural loyalty) among existing customers than it is to recruit new customers (Knox, 1998; Levitt, 1983; Reinartz, 2009). Indeed, enrollees are more likely to be individuals who demonstrated previous loyalty to the brand and have self-selected into the program, as opposed to new customers (Ferguson, 2006; Gómez et al., 2006; Leenheer et al., 2007; Meyer-Warden & Benavent, 2009).

After the existing customer enrolls, loyalty programs use targeted communication strategies that are personally tailored to the customer to help establish trust and build their relationship with the brand. For example, loyalty program members may receive, among other things, an email suggesting a product they may like to purchase, a birthday gift (e.g., a free coffee), or an invite to a special "members only" event. These intangible or status-based rewards are offered to increase attitudinal loyalty (Shoemaker & Lewis, 1999; Tanford, 2013). Conversely, behavioural loyalty is increased through incentivizing purchase behaviour by granting members loyalty program points in exchange for purchases, that can later be redeemed for exclusive benefits (Berman, 2006). Despite the expressed purpose of loyalty programs, there has been considerable debate in the academic literature regarding whether these programs are indeed effective at increasing member loyalty.

Some research suggests loyalty programs do increase member loyalty (Bombaij & Dekimpe, 2020; Leenheer et al., 2007). For example, Meyer-Waarden (2007) found

that belonging to a grocery store loyalty program significantly predicted lifetime duration of the member (i.e., time in program) and their share of wallet. Similarly, Gomez and colleagues (2006) found that members of loyalty programs were more attitudinally and behaviourally loyal relative to non-members. However, other published research, across many different industries, suggests that loyalty program membership does not influence attitudinal or behavioural loyalty over the long-term (Berman, 2006; Dowling, 2002; Kumar & Reinartz, 2018; Sharp & Sharp, 1997). For example, Mägi (2003) found that among a sample of Swedish shoppers, holding a loyalty program card did not predict share of wallet or share of visits to their primary grocery store. For this reason, there is cause for concern about whether creating and implementing a loyalty program is a good investment (Dowling, 2002).

Factors that work against loyalty programs include the large start-up budget required to develop and market a new loyalty program as well as the large amount of money needed to sustain the program (e.g., granting rewards, ongoing marketing costs; Dowling & Uncles, 1997; Wansink, 2003). It is thus important for companies in industries with high operational costs, such as the gambling industry, to understand whether loyalty programs lead to the generation of profits. There is empirical evidence that suggests loyalty programs are indeed profitable for the casino that offers such a program. For example, Min and colleagues (2016) conducted a longitudinal study over a period of two-years that examined the economic impact of the introduction of a loyalty program in a Las Vegas casino. They found that after introducing the loyalty program, slot machine coin-in increased by $302,455 per day. Similarly, Lucas and Bowen (2002) found that direct mail offers and cash promotion giveaways designed to increase

customer loyalty were positively associated with slot machine coin-in—a finding replicated by Lucas and Santos (2003). Additionally, research using ecological assessment methods (i.e., measuring behaviours at their time of occurrence) has indicated that exposure to inducement marketing that is common to loyalty programs, such as cash back offers, is associated with increased player spending (Browne et al., 2019).

Loyalty Programs and the Gambling Industry

Within the gambling industry, all casino venues regardless of brand or company, offer players the ability to play the same types of gambling games (e.g., slots, cards-based table games, electronic gambling games). Therefore, all casinos essentially offer customers the same products. To combat this similarity, casinos introduced loyalty programs to place themselves at a competitive advantage and provide added value to their brand (Palmer & Mahoney, 2003; Shook, 2003). These programs are designed to entice both land-based and online casino players to spend more of their money gambling at brand-affiliated venues over similar competitors.

Casino loyalty programs use a rewards structure wherein members are typically granted rewards points for every dollar they spend on casino goods and services. For the most part, members receive points for money spent gambling on games at casino venues. However, points can also be earned through means such as purchases made at casino gift shops, staying at casino-affiliated hotels, or eating at partnered restaurants. Points earned are accumulated and can then be redeemed for various reward benefits such as free play (e.g., $5 to be spent on a slot machine), cash back on gambling games (e.g., 1% of money spent returned to customer) or free food and drinks (Hendler & Latour, 2008). By granting members rewards points for spending money, they are incentivized to maintain

or increase their gambling expenditure in order to keep earning rewards—the net result being a generation in profits for the casino (Lucas et al., 2002).

Importantly, not all customers are equally profitable. Members who spend the most amount of money on gambling and casino-related purchases generate the largest profits for the casino (Davies, 2020, Lucas et al., 2002). To capitalize on the profitability of big spenders, casino loyalty programs segment their players based on members' expenditure (Palmer & Mahoney, 2005; Prentice et al., 2012; Prentice & Wong, 2015). To do so, casino loyalty programs use a tier-based structure to distinguish the more lucrative members from the less profitable (Min et al., 2016). All members start at the lowest- or base-level tier and move up the ladder by accumulating rewards points through making purchases and spending money on gambling games and other casino-brand services (e.g., hotel stays). Once the required number of rewards points to qualify for the next tier have been earned, members increase in status. In this way, members who are the most profitable and spend the most amount of money quickly move up the tier ladder and achieve higher tier status, whereas the less profitable customers who make infrequent casino purchases, remain at the lower tier levels. Importantly, tier status for each year is typically determined by how much money the member spent in the previous year. Thus, players need to maintain high levels of spending to retain their top-tier status the following year (Wohl, 2018).

Casinos grant members at the lowest level of the loyalty program the most basic, tangible rewards, such as free play, or food and drink discounts. Conversely, at higher tier levels, members receive more exclusive and better-quality rewards. For example, members of the highest tiers often have access to intangible, status-based rewards such as

exclusive lounges, personal dealers at table games, VIP tickets to shows, or free airfare to and from a destination casino (see Min et al., 2006, as well as Wohl, 2018 for a review). In this way, gambling venues use information about tier status to strategically target their most profitable members. It is the hope that given the exclusivity of the rewards received, members in higher tiers will become so partial to their elite status that they will be driven to maintain their level of spending to keep their tier status indefinitely—ensuring profitability for the program (McCall & Voorhees, 2010). There is evidentiary support for this tactic. Members in higher tier levels tend to report higher levels of attitudinal and behavioural loyalty (Barksy & Tzolov, 2010a; Prentice, 2013; Prentice et al., 2012; Yoo et al., 2020). Additionally, higher tiered members are responsible for the largest proportion of casino deposits. Indeed, a report from the Gambling Commission in the United Kingdom found that one casino operator reported that VIP customers accounted for 83% of the deposits made to the casino (Davies, 2020). As well, offering better rewards at higher tier levels also has the additional benefit of enticing members at lower tiers to wish to increase their status. That is, members at lower tiers may be motivated to increase their expenditure to get access to the higher status and better rewards.

Importantly, although an increase in members' gambling expenditure would be interpreted as a success from a business and marketing perspective, it could also be indicative of an increase in members' risk of experiencing gambling-related harms. Unlike other industries, casino loyalty programs reward members for engaging in a potentially addictive behaviour. Unfortunately, for a portion of players, gambling will become problematic and result in the experience of detrimental psychological, financial, and social harms (Hodgins et al.2011; Petry, 2005). Given the inherently addictive

quality of gambling, there is growing concern about the ethical and socially responsible practices of casino loyalty programs.

Ethical Considerations of Casino Loyalty Programs and their Influence on Disordered Gambling

Loyalty programs are structured in such a way that members who spend the most amount of money, benefit the most from belonging to the program. That is, high spenders receive the best quality rewards and customer service (Arbore & Estes, 2013; Bijmolt et al., 2018; Dreze & Nunes, 2009; Tanford, 2013). Unfortunately, in the context of loyalty programs in the gambling industry, disordered gamblers tend to be the biggest spenders. Indeed, it is estimated that disordered gamblers are responsible for generating 60% of the profits made by casinos (Williams & Wood, 2007). Given their high levels of expenditure, it is likely that disordered gamblers would be attracted to the idea of enrolling in a loyalty program where they can receive additional benefits in the form of loyalty program rewards in exchange for their high spending. Indeed, disordered gamblers are more likely to view casino loyalty programs in a positive light and find the program more appealing compared to recreational players (Haycock et al., 2012). Providing additional support for this supposition, Wardle (2016) found that almost half (47.1%) of all gamblers who were enrolled in a casino loyalty program were either moderate or disordered gamblers. Similarly, Delfabbro and King (2021) found that 40% of disordered gamblers surveyed reported using a casino loyalty card, compared to only 10% of recreational players. From an industry perspective, the gambling expenditure of disordered gamblers may be interpreted as high levels of behavioural loyalty to both the loyalty program, as well as the gambling operator. Although high levels of behavioural

loyalty are desired to drive profitability (Kumar, 2008; Liu, 2007), if the most loyal customers to the casino are disordered gamblers, casino operators should be aware of how loyalty program membership could place these individuals at risk for further harm.

There is growing concern in the field of gambling studies that belonging to a casino loyalty program could contribute to the development or worsening of a gambling disorder (Delfabbro & King, 2021, Responsible Gambling Council, 2013; Williams et al., 2012, Wohl, 2018). After all, disordered gamblers tend to be highly sensitive to rewards (i.e., detect and derive pleasure from reward stimuli; Sztainert et al., 2014). Loyalty program membership may therefore lead to increased expenditures out of a desire to receive the best quality rewards given at the highest tiers. Indeed, Narayanan and Manchanda (2012) found that disordered gamblers who received a reward during their gambling session were more likely than recreational players to increase the amount of money wagered in subsequent gambling sessions. Additionally, when interviewed about casino marketing strategies, disordered gamblers reported experiencing stronger urges to gamble when exposed to promotional efforts and increased their bet-size in response to matched deposit offers (Hing et al., 2014). Moreover, gamblers randomly assigned to a wagering inducement condition, wagered more money and reported an increased perceived loss of control, relative to gamblers in the control condition (Challet-Bouju et al., 2020). Thus, there is the potential risk that disordered gamblers enrolled in casino loyalty programs will increase their gambling expenditure and experience further harms.

Using Loyalty Program Player Accounts to Facilitate Responsible Gambling

Casinos that operate legally in a given jurisdiction are typically mandated by gambling regulators to minimize gambling-related harms. Most commonly, gambling

operators aim to educate their gamblers through creating and making available various responsible gambling tools (Blaszczynski, 2001; Harris & Griffiths, 2017). One such tool that many casinos offer their patrons is a limit setting tool that allows players to set a pre-determined cap on the amount of time and/or money they are willing to spend gambling in a given session (Ladouceur et al., 2012). When players reach their specified limit, they are notified, often via a pop-up message that appears on the gambling game they are playing. Importantly, limit setting tools are effective at helping players to have better control over their expenditure (Auer et al., 2014; Kim et al., 2014; Stewart & Wohl, 2013; Wohl, Gainsbury, et al., 2013). However, for limit-setting and other similar responsible gambling tools to function, casino operators need to be able to track player expenditure. That is, if casinos are not able to record how much the player is spending, they will have no way of knowing when the player is close to approaching or has reached their limit. For this reason, casinos typically make responsible gambling tools available to patrons through their loyalty programs because of their ability to track player expenditure (Nisbet, 2005; Nisbet et al., 2016).

Upon enrolling in a casino loyalty program, members are granted a loyalty program account and given an accompanying player account card. To accumulate points, players must scan or swipe their player account card prior to the purchase. For example, electronic gambling machines often have a scanning function whereby players can scan a bar code on the back of their player card prior to beginning gambling. The machine is then able to track the dollars put into the machine in the form of gambling wagers and can add program points to the player's account accordingly (Nisbet, 2005). Additionally, through having the player scan their card before beginning every gambling session,

casinos can track member behaviour such as games played, duration of play and variable bet sizes. Although this information is typically used by casinos to gain a better understanding of their members' demographic profiles and how to create more targeted and effective consumer marketing (Barsky & Tzolov, 2010b; Hand & Singh, 2014), it can also be used to help players gamble more responsibly. For example, Wohl and colleagues (2017) found that when loyalty program members were given feedback about how much money they had lost gambling over a three-month period, their gambling expenditure subsequently decreased.

Although there is a growing body of evidence supporting the use of responsible gambling tools to help reduce player harm (Harris & Griffiths, 2017), gamblers are reluctant to use the tools. Indeed, only 1% - 10% of players use the responsible gambling tools available to them (Forsström et al., 2016; Nelson et al., 2008). However, it is possible that casino loyalty programs can be leveraged to increase responsible gambling engagement among their members. One way to do so may be to incentivize responsible gambling tool usage by granting members rewards points in exchange for setting and adhering to a monetary limit. Importantly, employing a loyalty program to help players control their gambling expenditure and make more informed decisions about their play can also be beneficial for the gambling industry. That is, encouraging responsible gambling tool use among members could have downstream consequences of bolstering positive brand perceptions and player attitudinal loyalty. This argument is based on the notion that perceptions of company social responsibility, or the belief that a company operates in the best interest of its customers, is predictive of attitudinal loyalty (Anisimova, 2007; Chen et al., 2012; Crespo & del Bosque, 2005; Park et al., 2017). The

effect of the perception of corporate social responsibility on member loyalty is also evidenced in the gambling sector. Indeed, Chen McCain and colleagues (2019) found that positive perceptions of casinos' philanthropic corporate social responsibility actions (e.g., giving to charity) were predictive of customer loyalty.

It is possible gamblers will perceive the offering of responsible gambling tools as the casino doing their due diligence to protect their members from experiencing harms—an act of social responsibility—and will thus feel more attitudinally loyal toward the brand. Gamblers do report that having responsible gambling tools available to them increases their trust in the casino (Wood & Griffiths, 2008). As well, players who endorse beliefs and exhibit gambling behaviours that allow the player to maintain a fun, but safe level of gambling (i.e., positive play), report being more satisfied with their gambling experience relative to gamblers who do not engage in positive play (Wood & Griffiths, 2015). Of note, satisfaction with a company's product or service is a strong predictor of attitudinal loyalty (Jahanshahi et al., 2011; Torres-Moraga et al., 2008). It is therefore possible that through using responsible gambling tools, casino loyalty program members will exhibit positive play and have a more satisfying gambling experience, resulting in an increase in attitudinal loyalty. It would thus behoove industry to understand how encouraging engagement with responsible gambling tools could be capitalized in order to benefit both the player and casino operations through increasing safe play and attitudinal loyalty.

Overview of the Current Work

In the current work, I use research conducted in three manuscripts to examine the benefits and drawbacks to casino loyalty program membership. In the first manuscript,

two studies assessed whether tier status and disordered gambling symptomatology interacted to predict both attitudinal and behavioural loyalty. In the second manuscript. I used two studies to gain a better understanding of how positive play (i.e., responsible gambling beliefs and behaviours) predicts members' attitudinal (Study 1) and behavioural (Study 2) loyalty. Moreover, I examined how the predictive utility of positive play on player loyalty changes when disordered gambling symptomatology is taken into consideration. In the third and final manuscript, I explored the potential responsible gambling utility of casino loyalty programs and how these programs could be capitalized to benefit both the players and industry. I report the results from two studies that investigated whether incentivizing engagement with a responsible gambling tool increases willingness to use the tool and attitudinal loyalty.

Chapter Two

On Being Loyal to a Casino:
The Interactive Influence of Tier Status and Disordered Gambling Symptomatology on Attitudinal and Behavioural Loyalty

A central task for companies in a competitive marketplace is to implement strategies that harness both attitudinal (i.e., emotional attachment) and behavioural (i.e., patronage) loyalty from their existing customers (Uncles et al., 2003). However, this can prove difficult in a marketplace where products and services offered by one company are nearly identical to those of its rival (Victorino et al., 2005). For instance, in the gambling industry, variability in the types of games a casino can offer (e.g., poker, blackjack, slots) is low. Thus, casinos have focused considerable attention on developing a belief among their customers that continued patronage has added value.

Loyalty programs are the most ubiquitous means by which the gambling industry attempts to create attitudinal and behavioural loyalty among players (Shook, 2003). Program members receive reward points for every dollar spent gambling, which can be redeemed for, among other things, more time on the device. Moreover, by spending more money at the casino, members can advance to higher tiers of the program where they receive more and better rewards. As a result, some researchers and policy-makers have expressed concern that loyalty programs in the gambling industry fuel excessive gambling, particularly among people living with a gambling disorder who are more likely to enroll in such programs (Delfabbro & King, 2021; Prentice & Wong, 2015). Herein,

we report two studies that assessed whether tier status and disordered gambling symptomatology interact to predict attitudinal and behavioural loyalty.

Disordered Gambling, Behavioural Conditioning, and Loyalty Programs

According to the Pathways Model (Blaszczynski & Nower 2002), classical and operant conditioning are central to habitual gambling. Specifically, people with gambling addiction are addicted to the act of gambling itself; they become conditioned to the rewards (e.g., wins) received whilst gambling (Nower & Blaszczynski, 2017). Loyalty programs may be problematic because they increase the player's opportunity for reward (see Greenstein, 2012). Players are first reinforced from the contingencies of gambling games (i.e., reinforcement due to random wins and losses) and again by the rewards received through their program. Loyalty programs may thus be a vehicle for the development of disordered gambling.

The primary purpose of a loyalty program is to foster a strong relationship between a brand and its customers by increasing both attitudinal and behavioural loyalty (Dowling & Uncles, 1997). Attitudinal loyalty represents a customer's level of trust, satisfaction, and identification with a brand (Baloglu, 2002; Gomez et al., 2006), whereas behavioural loyalty refers to a customer's repeat purchasing behaviour (Dick & Basu, 1994; Jones & Taylor, 2007). To develop both types of loyalty, loyalty programs offer members tangible (e.g., prizes) and intangible (e.g., special privileges) rewards for purchasing goods and services. Most loyalty programs have tiers in which members receive different (and better) rewards when they achieve a higher tier status. It is believed that segmentation into tiers enhances a customers' sense of identification and satisfaction with the company, particularly among members in higher tiers (Brashear-Alejandro et al.,

2016; Market Solutions Social Research Group, 2016). In casino-based loyalty programs, this may result in problematic gambling.

Social identity theory (Tajfel & Turner, 1979) argues that part of people's sense of self is derived from their membership in groups. Membership in and identification with high-status groups renders psychological benefits (e.g., increases self-worth; Bettencourt et al., 2001). Applied to loyalty programs, higher tier status should result in greater identification and satisfaction with the casino that offers the loyalty program (i.e., greater attitudinal loyalty; see Wohl, 2018). It should also be positively associated with behavioural loyalty. Indeed, theorists in both economics and marketing have argued that the desire to achieve and maintain higher tier status is a driver of purchasing behaviour (i.e., behavioural loyalty; Duesenberry, 1952; Mathies & Gudergan, 2012; McCall & Voorhees, 2010). Barsky and Tzolov (2010a), for example, found that members with elite status in a casino loyalty program were willing to spend more money than players who did not have elite status.

The motivation to belong to high status groups may lead casino loyalty members to accelerate their spending as they approach the points needed to achieve a higher tier – an instantiation of Hull's (1932) goal-gradient hypothesis. Additionally, higher tier players are motivated to maintain a high level of play to avoid being bumped down to a lower status should their play decrease in frequency or spend. Maintaining one's high status requires sustained high-frequency play. Should such play result in the player spending more than they can afford, they may be at risk for developing a gambling disorder (see Hodgins et al., 2012). Moreover, people living with a gambling disorder tend to be sensitive to reward (see Sztainert, et al., 2014). The premium rewards offered

to members of higher tiers may elevate the attitudinal and behavioural loyalty among disordered gamblers (Wohl, 2018). In this light, the greatest attitudinal and behavioural loyalty may be observed among those in the highest tiers of a loyalty program and who are high in disordered gambling symptomatology.

However, because those living with a gambling disorder are already behaviourally conditioned to gambling, their attitudinal and behavioural loyalty may have no room to grow. Instead, tier status may have its most pronounced effect on attitudinal and behavioural loyalty among gamblers who have no or few symptoms of disordered gambling. Such players likely have not yet become behaviourally conditioned and thus may be particularly affected by the double exposure to rewards they get from the game and being a member of a higher tier of a loyalty program. If this is the case, the greatest values of attitudinal and behavioural loyalty may be observed among players who are in the highest tiers of the program, but report few (or no) symptoms of disordered gambling. We tested these competing hypotheses in two studies.

Study materials, data, and supplemental analyses for Studies 1 and 2 are available on Open Science Framework (OSF): https://osf.io/sjxrt/?view_only=3866af75dc1f42d5876b7167ca2659bd

STUDY 1

The purpose of Study 1 was to examine whether tier status in a casino loyalty program and disordered gambling symptomatology interact to predict attitudinal and self-reported behavioural loyalty.

Method

Participants and Procedure. Based on an a priori power analysis (and to ensure a sufficient sample size across loyalty program tiers; see Appendix A) it was determined that 225 participants would be required to detect a moderate effect size with 80% power. A total of 473 American MTurk participants were recruited in case of poor data quality. Participants completed a short screener to determine their eligibility. Recruitment stipulated participants must belong to either Caesars Total Rewards or Penn National's Marquee Rewards (see OSF for a description of each program as they were at time of data collection). These programs were selected because they were two of the largest loyalty programs in the United States with similarly structured loyalty programs (at the time the study was conducted). Although we explicitly sought players who were members of either the Caesars Total Rewards or Marquee Rewards programs, we included other casino programs in our demographic questionnaire as an attention check. Those who did not indicate Caesars or Marquee Rewards membership were deemed ineligible. Consenting participants completed the measures of interest (Appendix B) and were given US$1.00 as remuneration for their participation. The study was conducted in accordance with the Declaration of Helsinki and received ethical clearance from the authors' home institution. All participants were informed about the study and provided consent.

Thirty-four participants withdrew from the study. Additionally, participants were removed from the analyses because they did not complete the variables of interest (23), did not indicate one of the two target loyalty programs when asked to indicate their loyalty program's name (10), provided poor quality data (e.g., reported they were dishonest in their responses; 6), or were an outlier in terms of the amount of time they

took to complete the survey (i.e., ±2 *SD*; 4). The final sample (N = 396; 49.7% female; M_{age} = 36.15, SD = 10.93) was mostly comprised of Caesars Total Rewards members (71.2%).

Measured Variables

Tier Status was assessed with a self-report item**.** Those who reported being in one of the top three tiers of the Marquee Rewards' five-tier program were collapsed into a single *high tier status* group. Among those who reported membership in Caesars Total Rewards, *high tier status* consisted of participants in the top two tiers of the four-tier program. Participants who reported being in one of the first two tiers of either program were collapsed into a *low tier status* group. The distinction between high and low tiers was based on whether participants were in a high enough tier that they were provided intangible rewards (e.g., access to a player's lounge).

Disordered Gambling Symptomatology was assessed with the widely used 9-item Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001; see Appendix C). Item responses ranged from 0 (*never*) to 3 (*almost always*). A participant's PGSI score was the sum of the nine items. As suggested by Ferris and Wynne (2001), we categorized participants with a summed score of 0 as no risk gamblers, 1-2 as low-risk, 3-7 as moderate-risk, and 8-27 as high-risk gamblers.

Attitudinal loyalty was assessed using 19 items. Response options were on a Likert scale anchored at *1 (strongly disagree)* to 7 *(strongly agree).* A factor analysis yielded a two-factor solution (see Appendix D and OSF for all items and full reporting of the factor analysis). The first factor comprised seven items (α = .91) measuring identification with the loyalty program. The second factor comprised seven items (α =

.93) measuring satisfaction with the program. Five items did not load on either factor. Higher scores represented higher levels of identification and satisfaction with the casino loyalty program.

Behavioural loyalty was determined based on self-reported hours gambled, number of visits, and money spent gambling with their loyalty card in the past 30 days.

Participants also completed additional measures for exploratory purposes (see Appendix B and OSF).

Data Analysis

A 2×4 (tier status: low, high; PGSI category: no, low, moderate, high-risk) multivariate analysis (MANOVA) was conducted to examine the effect of tier status, disordered gambling category and their interaction term on identification and satisfaction with the program as the dependent variables (i.e., attitudinal loyalty). A second 2×4 (tier status by PGSI category) MANOVA was conducted with the number of hours, number of visits and amount of money spent (i.e., behavioural loyalty) used as the dependent variables. Tier status and disordered gambling symptomatology were positively correlated, Cramer's V = .26, $p < .001$ (see Appendix E for assumption checks).

Results

There were no statistically significant differences between the Ceasars Total Rewards and Marquee Rewards loyalty programs, thus loyalty program affiliation was collapsed in all reported results. Univariate and multivariate main effects are available on OSF (See Appendix F).

Attitudinal loyalty. There was a significant omnibus multivariate effect of the interaction between tier status and disordered gambling symptomatology, Pillai's Trace =

.05, $F(6, 764) = 3.18$, $p = .004$, $\eta^2 = .02$. Univariate analyses indicated that the interaction between tier status and disordered gambling symptomatology was significant for identification with the loyalty program, $F(3, 382) = 3.42$, $p = .02$, $\eta^2 = .03$, but not for satisfaction with the program, $F(3, 382) = 0.18$, $p = .91$, $\eta^2 = .001$. Simple effects analyses of the interaction on identification with the loyalty program indicated that among no-risk, low-risk and moderate-risk gamblers, members in higher tiers identified more with their loyalty program compared to their similar counterparts (i.e., members with similar levels of symptomatology) in the lower tiers (ps $\leq .003$). For high-risk gamblers however, members in higher and lower tiers were equal in identification with the loyalty program ($p = .16$; see Figure 1 and Table 1).

Behavioural loyalty. Reported money spent gambling over the past 30 days ranged from $0 to $60000. To reduce the influence of outliers, extreme scores above the 95th percentile were recoded to be equal to the 95th percentile score (i.e., $5000). Additionally, the data were checked for univariate and multivariate outliers. Although some outliers were observed, results were unchanged when the outliers were removed. For the purpose of retaining statistical power, the reported analyses include all available data. There was a significant multivariate effect of the interaction between tier status and disordered gambling, Pillai's Trace = .06, $F(9, 1140) = 2.74$, $p = .004$, $\eta^2 = .02$. At the univariate level, the interaction only had a significant effect on hours spent gambling in the past month, $F(3, 380) = 3.81$, $p = .01$, $\eta^2 = .03$. The interaction was not significant for dollars spent, $F(3, 380) = 0.23$, $p = .87$, $\eta^2 = .002$, or visits in the past month, $F(3, 380) = 2.12$, $p = .10$, $\eta^2 = .02$. Simple effects analyses for the significant interaction on hours spent gambling indicated that among moderate and high-risk gamblers, there was no

effect of tier status (*p*s > .19). However, the effect of tier was significant for no risk and low risk gamblers. Among no- and low-risk gamblers, those with high tier status spent more time at the casino than their counterparts with low tier status, *p*s < .01 (Table 1 and Figure 2).

Discussion

As predicted, tier status and disordered gambling symptomatology interacted to predict attitudinal and behavioural loyalty. High tier status members, with no-, low- and moderate-risk levels of disordered gambling reported higher levels of identification with the loyalty program relative to their counterparts in the lower tiers. In contrast, high tier status members with high levels of disordered gambling symptomatology were not more identified with the loyalty program than low tier status members with high levels of disordered gambling symptomatology. A similar pattern of results was observed with behavioural loyalty. High tier status members with moderate to high levels of disordered gambling symptomatology were not more behaviourally loyal compared to similar members in lower tiers. However, no risk and low risk gamblers in higher tier levels were more behaviourally loyal than members of equal symptomatology in lower tiers. These results suggest that high tier status members with no or lower levels of disordered gambling symptomatology (i.e., those who have yet to become conditioned to gambling) may be particularly sensitive to the rewards that high tier membership provides, with the net result being higher levels of attitudinal and behavioural loyalty. Conversely, those who have already been behaviourally conditioned (i.e., people with a gambling disorder) may not be additionally conditioned by the rewards received by virtue of their higher tier membership.

STUDY 2

A limitation of Study 1 was that behavioural loyalty was assessed with self-reported gambling expenditures. However, players poorly recall the amount of money they spend gambling (see Wohl et al., 2017). In Study 2, we sought to replicate and extend the results of Study 1 using player account data from a community sample of Canadian casino loyalty program members.

Method

Participants, Procedure and Measured Variables. As part of a larger study (see Wohl et al., 2017), Ontario Lottery and Gaming (OLG) provided the research team with behavioural loyalty (i.e., number of visits and amount of money wagered on electronic gambling machines (EGMs) over a 30-day period) and tier status data from players (N = 649; 60.6% females) who were members of their Winners Circle casino loyalty program. Data were limited to players who had: 1) played at a program-affiliated casino at least three times in the past three months, 2) had won or lost at least $100 in that period, and 3) were at least 18 years of age. Participants in the top tier of the program were coded as *high tier status* and those in the bottom two tiers were coded as *low tier status*. A link to an online survey was sent to these players via OLG's player listserv. Among other measures, they completed an online survey that contained the PGSI (see in Study 1; Appendix C). Participants received a $30 multi-purpose gift card as remuneration.

Data Analysis

A 2×4 (Tier status: low, high; PGSI: no, low, moderate, high-risk) MANOVA was conducted to examine the effect of tier status, disordered gambling symptomatology

and their interaction on members' behavioural loyalty. Visits to the casino and money wagered served as the two correlated dependent measures of behavioural loyalty (r = .48, p < .001). Sensitivity analyses revealed that given the sample size, the study was sufficiently powered to detect effect sizes equal to or greater than η^2 =.01. Tier status and disordered gambling symptomatology were positively correlated (Cramer's V = .22, p < .001). See Appendix E for assumption checks.

Results

As in Study 1, extreme scores were recoded to be equivalent to the score at the 95th percentile (i.e., $65000). After recoding extreme scores, the data were checked for univariate and multivariate outliers. After removing outliers, the pattern of results remained unchanged, therefore all cases are included in the reported analyses. Univariate and multivariate main effects are available on OSF (see Appendix F).

We observed a significant multivariate interaction between tier status and disordered gambling symptomatology on behavioural loyalty, Pillai's Trace = .02, F(6, 1270) = 2.49, p = .02, η^2 = .01. Univariate analyses results indicated that the interaction effect was significant for number of visits, F(3, 635) = 3.08, p = .03, η^2 = .01, and amount wagered, F(3, 635) = 2.75, p = .04, η^2 = .01. Simple effects analyses revealed no significant difference in the number of visits to the casino between high tier, high-risk gamblers and low tier, high-risk gamblers (p = .08). However, high tier status members with no-, low- and moderate-risk levels of disordered gambling visited the casino more than low tier members with similar symptomatology. Of note, the largest effect of tier status on visits was observed among no risk members (η^2 = .08). In terms of the amount of money wagered, the effect of tier was significant at all four levels of symptomatology

(ps < .001), with members in higher tiers wagering more money than those in lower tiers. However, the largest effect of tier on amount wagered was observed among the no risk group ($\eta^2 = .24$) with smaller effects observed among the low-risk, moderate-risk, and high-risk symptomatology groups ($\eta^2 < .22$; Table 2).

Discussion

As in Study 1, the strongest effect of tier status on behavioural loyalty (i.e., casino visits and money spent on gambling) was observed among those with no or low levels of disordered gambling symptomatology. In contrast to Study 1, high tier status members, who were high in disordered gambling symptomatology wagered more money than their similar counterparts in the lower tiers. That there was not a similar effect in Study 1 may be due to the known tendency for players to underestimate the amount of money they have lost gambling when asked to subjectively recall their gambling expenditure (see Wohl et al., 2017). For this reason, Study 2 arguably provides a stronger (and more accurate) test of our hypotheses than Study 1 due to the use of the objective player data.

General Discussion

We examined whether attitudinal and behavioural loyalty to a casino loyalty program may be a product of tier status and disordered gambling symptomatology. Prior to doing so, we outlined two competing hypotheses. One hypothesis was that higher tier status would be predictive of higher levels of both attitudinal and behavioural loyalty among members with elevated disordered gambling symptomatology because people with a gambling disorder tend to be sensitive to reward (see Sztainert et al., 2014). A competing hypothesis was that because people living with a gambling disorder are already behaviourally conditioned to the act of gambling, the rewards offered through

casino loyalty programs may have little-to-no influence on attitudinal and behavioural loyalty. Instead, high tier status and the rewards received as a result should have the greatest predictive utility for the attitudinal and behavioural loyalty of members who self-report no or few symptoms of disordered gambling.

Results from both Studies 1 and 2 provided support for our second hypothesis. Results from Study 1 showed that the effect of tier status on identification with the casino loyalty program was strongest among non-problem gamblers in the top tiers. We also found that players with no or few symptoms of disordered gambling reported greater behavioural loyalty when in the higher compared to lower tiers of a loyalty program (Study 1), and player account data obtained from a loyalty program (Study 2) replicated this effect. These results support the idea that although non-problem gamblers have yet to become behaviourally conditioned to gambling, they may be particularly sensitive to the rewards received through their loyalty program. The result being higher levels of attitudinal and behavioural loyalty to the program compared to their low tier status, non-problem counterparts.

Of note, however, high tier status gamblers who reported no symptoms of disordered gambling reported similar levels of attitudinal and behavioural loyalty as gamblers with high levels of disordered gambling in either high or low tiers. Some players in the highest tiers may be high frequency, non-problem gamblers (Hodgins et al., 2012). If these players are able to gamble at a high frequency and not experience problems, they may benefit from the rewards offered to high tier members without experiencing harm (e.g., emotional or financial distress). It may also be the case that those classified as “no risk gamblers” in higher tiers may be understating or denying their

symptoms (Horch & Hodgins, 2008). Importantly, gambling games have inherently addictive structural characteristics (Turner & Horbay, 2004). Thus, the rewards granted to members through casino loyalty programs may combine with the rewards inherently received through gambling (i.e., wins) to increase disordered gambling over time, especially among current non-problem gamblers. For this reason, non-problem gamblers in high tiers may be at a greater risk for subsequently developing problems with their gambling. Further research is required to assess whether there are any long-term effects of high tier status membership among non-problem gamblers.

Lastly, we found that members high in disordered gambling symptoms who are in the highest tiers are spending a considerable amount of money gambling. These results are in line with findings from Delfabbro and King (2021) who reported that problem gamblers used loyalty cards more frequently than recreational gamblers. Regulators may want to consider encouraging the industry to identify high tier status loyalty program members at risk for disordered gambling to put in place infrastructure to help them decrease their gambling expenditure or seek professional care.

Limitations

Some limitations of the current research should be noted. First, the sample size for members in the high tiers in both studies was small. This is to be expected given it takes a great deal of spending to achieve top tier status. It would behoove researchers to target these players to better understand their play behaviour and gambling habits (e.g., amateur or professional gamblers), as well as other factors that may predict whether their high level of spend is harmful. Second, the behavioural data recorded in Study 2 only examined expenditure on EGMs. Money wagered on other forms of casino gambling

were not recorded. The findings from the current work should be replicated using measures of behavioural loyalty that includes expenditure on all forms of gambling. Lastly, given the cross-sectional design used in both Studies 1 and 2, we are unable to rule out the possibility that loyalty, tier status and disordered gambling symptomatology are mutually reinforcing. Initial loyalty may encourage players to spend more time and money gambling, and increased play may lead to both higher tier status and disordered gambling. Longitudinal research on the effect of loyalty program membership on gambling behaviour over time is required.

Conclusion

The results from two studies indicated that the effect of tier status on attitudinal and behavioural loyalty was strongest among members low in disordered gambling symptomatology. Non-problem gamblers who had achieved higher tier status spent more money gambling and were more attitudinally loyal than members of similar symptomatology in lower tiers. The effect of tier status on loyalty was smallest among members high in disordered gambling symptoms, suggesting the rewards received at higher tier levels have little influence on the loyalty of high-risk players. Importantly, although members with low levels of disordered gambling and high tier status may benefit from program membership in the short-term, it is unknown whether they will be particularly vulnerable to increasing their gambling expenditure over time to maintain (or increase) their tier status.

The results from Chapter Two provided insight into how problematic play (i.e., disordered gambling) may relate to attitudinal and behavioural loyalty. However, the majority of players are not problematic gamblers. Indeed, although still an important

public health concern, only 0.5% to 4% of players are disordered gamblers (Black & Shaw, 2019). Rather, most gamblers are positive players (i.e., endorse and exhibit responsible gambling beliefs and behaviours; Wood et al., 2017). Given that positive players comprise the largest proportion of gamblers, it would behoove researchers and industry to understand how positive play beliefs and behaviours relate to attitudinal and behavioural loyalty. The next chapter aimed to fill this gap.

Chapter Three

The Customer-Brand Relationship in the Gambling Industry: Positive Play Predicts Attitudinal and Behavioural Loyalty

Every major casino company offers its customers the opportunity to enroll in a proprietary casino loyalty program. At their core, these programs serve as marketing tools designed to foster a positive relationship between the casino and its customers (Berman, 2006; Henderson et al., 2011; Uncles et al., 2003). The casino operator's hope is that by granting members rewards for purchasing their products, customers will become more attitudinally (i.e., more trusting and satisfied with the casino and their brand) and behaviourally loyal (i.e., higher frequency of revisit and repurchase behaviour), which should yield increased revenue (Henderson et al., 2011). Despite some research suggesting that loyalty programs do, in fact, generate more revenue for casinos by increasing attitudinal and behavioural loyalty (Gomez et al., 2006; Liu, 2007; Lucas & Bowen, 2002; Lucas et al., 2002; Meyer-Waarden, 2007; Min et al., 2016; Repetti, 2013), other research suggests that the costs associated with running a loyalty program outstrip the profits generated from loyal customers (Berman, 2006; Dowling, 2002; Lucas & Spilde, 2017). Of course, what sets the gambling industry apart from most other loyalty programs is that the product is inherently addictive (Wohl, 2018). Thus, it is important to understand factors that contribute to loyalty without contributing to gambling-related harm.

Herein, we suggest a heretofore unexamined predictor of casino loyalty among gamblers may be the extent to which they endorse beliefs and engage in behaviours that

help them to gamble in a safe and responsible manner (i.e., positive play; Wood & Griffiths, 2015; Wood et al., 2017). Players who gamble responsibly by, for instance, setting and adhering to limits on the amount of money they spend gambling, tend not to experience gambling-related harms and are more likely to report enjoying their gambling experiences (i.e., positive players; Tabri et al., 2020; Wood & Griffiths, 2015; Wood et al., 2017). Thus, positive players who join a casino-based loyalty program should find themselves rewarded for their spend but not feel the negative consequences of excessive spending. The net effect should be greater satisfaction, trust in and identification with the casino (i.e., attitudinal loyalty). However, because positive players tend to use strategies that help them to control their gambling expenditure, positive play beliefs and behaviours may be associated with a reduction in player spend (i.e., behaviour loyalty).

Loyalty Through a Responsible Gambling Lens

People who join casino-based loyalty programs are given a membership card that provides players with, among other things, discounts for food and services. Moreover, players can accumulate points by spending money at the casino that can be redeemed for non-cashable goods (e.g., free hotel stay) later. The most common means for casino-based loyalty program members to accumulate points is by spending money on gambling games (Wohl, 2018). Importantly, one of the most common rewards provided to players is free-play. One of the aims of offering free-play is to keep the player gambling longer (i.e., extending their time on the device).

From a marketing perspective, increasing time on device, and thus a player's expenditure of funds, is desirable because it translates into increased revenue (Lucas & Kilby, 2008). From a public health perspective, however, extended time on device can

result in excessive gambling-related expenditures (Dixon et al., 2014; Harrigan et al., 2011; Johansson et al., 2009), and lead players to gamble beyond their financial means (Schüll, 2012). Spending money on gambling in this way (i.e., excessively) is indicative of disordered gambling, which is associated with an array of harms including financial (e.g., bankruptcy), social (e.g., divorce) and emotional (e.g., depression) problems (Hodgins et al., 2011; Petry, 2005). In fact, some researchers and policy makers have expressed concern that disordered gamblers and those at risk of developing disordered gambling are disproportionately negatively impacted by membership in a casino-based loyalty program (e.g., Responsible Gambling Council, 2013; Williams et al., 2012). This concern stems from the recognition that a key pathway to disordered gambling is through behavioural conditioning (Blaszczynski & Nower, 2002), and rewards that extend time on device (a central feature of a casino-based loyalty programs) provide more opportunity for that conditioning to take place. Indeed, gambling has inherently addictive structural properties (e.g., random wins accompanied by exciting auditory and visual stimuli) that reinforce continued engagement in the behaviour and can encourage excessive gambling-related expenditures (Dixon et al., 2014; Harrigan et al., 2011; Johansson et al., 2009).

To minimize the risks associated with excessive gambling, much of the casino industry has accepted a duty of care by way of promoting responsible gambling (Blaszczynski et al., 2011). According to the Reno Model (Blaszczynski et al., 2004), although players have the ultimate responsibility for the amount of money and time they spend gambling, casino operators have an ethical responsibility to help their customers gamble responsibly. With the Reno Model as their guide, most casino operators have created programs and tools to help players gamble within an affordable limit (Wohl,

Sztainert, et al., 2013). The creation of such programs and tools is important to minimize gambling-related harms because many players operate under the illusion that they can control the objectively uncontrollable outcomes in games of chance (Blaszczynski et al., 2004). This inflated belief about their chances of winning can lead to over-expenditure (Hodgins & Holub, 2007; Wohl et al., 2007). Casino operators can have a positive influence on players by cultivating beliefs and behaviours that reflect a responsible gambling orientation, and in so doing improve the player's experience (for a review see Wohl et al., 2014). When a player's experience is positive, loyalty should follow (Wohl, 2018).

Positive Play as a predictor of Attitudinal and Behavioural Loyalty

Wood and colleagues (2017) recently proposed a model of positive play to help casino operators better understand the beliefs and behaviours that help players keep their gambling from becoming problematic. According to the model, positive play can be organized into two positive beliefs (i.e., gambling literacy and personal responsibility) and two positive behaviours (i.e., honesty & control and pre-commitment). Gambling literacy reflects the extent to which players hold an accurate understanding about their (low) odds of winning. Personal responsibility refers to the extent to which players accept that they hold the ultimate responsibility for the amount of money and time they spend gambling. Honesty & control reflects the extent to which players are open and truthful with others about the amount of money and time they spend gambling, and are in control of their gambling behaviour. Lastly, pre-commitment is the extent to which players consider and adhere to self-imposed money and time limits. A central finding using the Positive Play Model is that players who hold positive play beliefs and engage in positive

play behaviours understand that gambling is a leisure activity that players undertake for enjoyment, and not for the prospect of financial gain (Tabri et al., 2020; Wood et al., 2017).

Customers who view the products that they purchase as providing hedonic value (i.e., positive experience) express higher levels of satisfaction and identification with both the product and the company that offers the product relative to customers who do not perceive hedonic value (Babin et al, 2004; Bhattacharya et al., 1995), and both satisfaction and identification are critical components of attitudinal loyalty (Back & Parks, 2003; Bhattacharya & Sen, 2003; Gomez et al., 2006; Kuikka & Laukkanen, 2012). Casino loyalty program members who hold positive beliefs about gambling and play positively should be more satisfied with their overall gambling experience, as well as have more trust in and identification with the casino in which they play. Specifically, we hypothesized that endorsement of positive play beliefs and behaviours would predict attitudinal loyalty. Moreover, we hypothesized this relation would hold when accounting for a player's level of disordered gambling symptomatology—a factor that is also associated with behavioural loyalty (Delfabbro et al., 2021; Haycock et al., 2012), and thus could also be related to attitudinal loyalty.

We assessed both attitudinal loyalty (Study 1) and behavioural loyalty (Study 2) because we posited that the effect of positive play on attitudinal loyalty may differ from the effect it would have on behavioural loyalty. Those who understand how gambling games work (i.e., high in gambling literacy), take personal responsibility for their gambling, are honest and in control of their gambling, and pre-commit when gambling (i.e., set and adhere to a limit on the amount of money and time one spends gambling)

tend not to gamble excessively (Tabri et al., 2020; Wood et al., 2017). Instead, these gambling-related beliefs and behaviours should translate to more positive gambling experiences. Positive gambling experiences should translate to greater satisfaction with their loyalty program (i.e., attitudinal loyalty). However, the same positive play factors that facilitate attitudinal loyalty may undermine behavioural loyalty. Wood and Griffiths (2008), for example, showed that positive players tend to place smaller bets and visit the casino less frequently by virtue of their responsible gambling habits. Indeed, being in control of one's gambling and pre-committing to a spending limit are, by definition, behaviours that restrict gambling-related spend so as not to lose an excessive amount of money. Because spend is a metric by which behavioural loyalty is assessed (Liu, 2007), positive players should demonstrate less behavioural loyalty than those who do not engage in positive play.

In addition to hypothesizing that positive play, in general, will be positively associated with attitudinal loyalty but negatively associated with behavioural loyalty, we hypothesized that there may be some variance in the effects of the individual positive play components on player loyalty. Because brand loyalty is based on a perceived relationship between the brand and the customer (Kumar & Reinartz, 2018), personal responsibility and honesty & control, which reflect the gambler's intrinsic thoughts about their own gambling habits may have little relation with how the gambler perceives and interacts with the casino (i.e., attitudinal and behavioural loyalty). Conversely, pre-commitment and gambling literacy reflect positive play components that involve direct engagement with the casino (i.e., outwardly focused aspects of positive play). Specifically, gambling literacy reflects an understanding that the odds of success at

games played at a casino are not in the player's favour, and pre-commitment involves the player actively deciding how much money they are willing to lose gambling on casino games. When adhering to a pre-set money limit, players may have a more satisfactory experience (i.e., higher attitudinal loyalty) and spend less money gambling (i.e., lower behavioural loyalty) than when they do not set a limit on their gambling-related spend or they exceed their pre-set limit. We were, however, agnostic about the effect of gambling literacy. On the one hand, those high in gambling literacy should understand that gambling should be viewed as entertainment, which could increase attitudinal loyalty and decrease behavioural loyalty. However, those high in gambling literacy also understand that the casino has set odds that are not in their favor, which may undermine attitudinal loyalty. Moreover, those low in gambling literacy who have a lower understanding of the low odds of gambling games may spend more money gambling, and thus have higher levels of behavioural loyalty.

Overview of the Current Research

Like other industries, the gambling industry has traditionally focused on understanding loyalty through a business and marketing lens (i.e., who joins loyalty programs and what drives profits; Baloglu, 2002; Barsky & Tsolov, 2010b; Liu, 2007). To date, limited research has focused attention on loyalty programs from a public health or social responsibility perspective. Within the context of the gambling industry, such a perspective would include an assessment of whether responsible gambling beliefs and behaviours contribute to attitudinal and behavioural loyalty. In the current work, we fill this gap by examining whether a player's positive play (i.e., responsible gambling beliefs and behaviours) is associated with loyalty. We also assessed whether aspects of positive

play beliefs (i.e., gambling literacy, personal responsibility) and behaviours (precommitment, honesty & control) uniquely predict loyalty to a casino loyalty program.

In Study 1, we used data from members of MGM's M Life Rewards program to test the hypothesis that there would be a significant and positive association between positive play and attitudinal loyalty (operationalized as trust, satisfaction and identification with the loyalty program). We also explored the association between attitudinal loyalty and each of the four positive play subscales. We conducted each of these analyses with and without disordered gambling symptomatology in the model to assess the extent to which disordered gambling symptomatology accounts for the examined associations. In Study 2, we were uniquely positioned to assess the association between positive play and behavioural loyalty because we were not only able to survey players who enrolled in a Canadian casino loyalty program, we were also given access to their player-account data (if they player granted us consent to do so). Currently, there is a paucity of research on behavioural loyalty in the gambling industry because player-account data is very difficult to obtain. With survey and player-account data in hand, we tested the hypothesis that positive play (as well as its components) is negatively associated with behavioural loyalty. Once again, we conducted the analyses both with and without disordered gambling symptomatology in the model.

Materials and data used in Study 1, as well as materials used in Study 2 are publicly available via the Open Science Framework (OSF): https://osf.io/e9gu5/?view_only=842c7fc0ff4b4abebe0eddc3647afcd0. Data used in Study 2 are available upon request.

Study 1

The purpose of Study 1 was to test the predictive utility of positive play beliefs and behaviours on members' attitudinal loyalty. To this end, we recruited members of MGM's M Life Rewards casino loyalty program to complete an online survey.

Method

Participants and Procedure. An a priori power analysis conducted using Daniel Soper's power calculator determined that a sample size of 165 participants would be required to detect a small-to-moderate effect size with 80% power (Soper, 2021; Appendix G). To account for poor data quality from some participants, we recruited approximately double the number of individuals required, resulting in a total of 369 participants completing the survey. A recruitment notice was posted on Amazon's Mechanical Turk inviting casino loyalty program members to participate in a study on their "Perceptions of Casino Loyalty Programs" (Appendix H). Individuals were only eligible to participate if they: 1) were a current resident of the United States, 2) were not currently seeking, nor had ever previously sought treatment for their gambling behaviours, 3) had spent over $100 gambling at a land-based casino in the previous 12-months and 4) were a member of the M Life Rewards loyalty program. The M Life loyalty program was selected due to the popularity of MGM casinos in North America (Statista, 2020) and to ensure consistency in the sample.

Participants first granted consent to their participation (Appendix I) and completed a brief eligibility screener. Consenting participants then completed measures assessing their level of disordered gambling symptomatology, positive play beliefs and behaviours, and attitudinal loyalty (presented in random order). Additionally, participants completed measures of demographics and other exploratory questionnaires not examined

in the current research (e.g., financially focused self-concept, responsiveness to rewards; for the full questionnaire, see Appendix J). After completing the survey, participants were debriefed (Appendix K) and compensated with US$0.80 for their participation in the study which took approximately 12 minutes to complete. This study received ethical clearance from a research ethics board at a large academic institution.

To ensure a high level of data quality, participants were asked at the outset to provide the name of the casino they most frequent that is affiliated with the M Life Rewards program. A total of 181 participants provided names of casinos that were not affiliated with M Life Rewards or were not actually casinos (e.g., "MasterCard"). As a result, these participants were deemed to have poor data quality, and were removed from the analyses. The final sample thus consisted of 188 participants (116 (61.7%) males, 72 (38.3%) females), with the average age being approximately 37 years old (M = 37.21, SD = 10.62). Additionally, the mean level of disordered gambling symptomatology across the sample was 7.22 (SD = 6.90) indicating that the average level of disordered gambling fell in the moderate gambling severity range.

Measured Variables

Disordered Gambling Symptomatology. Level of disordered gambling symptomatology was measured using the Problem Gambling Severity Index (Ferris & Wynne, 2001; Appendix C). The scale consists of nine items (α = .95) and is designed to be a general measure of level of disordered gambling symptoms. Example items include "How often have you felt you might have a problem with gambling?" and "How often has your gambling caused you any health problems, including stress or anxiety?" Response options ranged from 0 (*never*) to 3 (*almost always*). A sum score was

calculated to represent the level of disordered gambling symptoms, with larger scores representing a higher number and frequency of disordered gambling symptoms.

Positive Play Beliefs and Behaviours. The Positive Play Scale (Wood et al., 2017) was used to measure positive play beliefs and behaviours. The gambling literacy subscale included three items (α = .73) (e.g., "Gambling is not a good way to make money" and "My chances of winning get better after I have lost" (reverse-coded)). The personal responsibility subscale included four items (α = .87) (e.g., "I should be able to walk away from gambling at any time" and "It's my responsibility to spend only money that I can afford to lose"). The third subscale was comprised of three items (α = .83) that measured the extent to which the participant was in control of and honest about their gambling (e.g., "In the last month I felt in control of my gambling behaviour" and "In the last month I was honest with my family and/or friends about the amount of money I spent gambling"). The final subscale consisted of four items (α = .87) designed to measure the player's pre-commitment. Example items included: "I considered the amount of time I was willing to spend before I gambled" and "I only gambled with money that I could afford to lose." Response options for all items were anchored at 1 (*strongly disagree*) and 7 (*strongly agree*). Mean scores were calculated for each subscale, with higher scores representing higher endorsement of positive play beliefs and behaviours. The positive play scale has been found to be a valid and reliable measure of responsible gambling beliefs and behaviours (Tabri et al., 2020).

To measure the participant's level of overall positive play beliefs and behaviours, a composite score was created. To do so, all subscale scores were z-scored in order to standardize the measures. An average across the four standardized subscale scores was

then calculated to represent an overall measure of positive play. Higher scores represented higher levels of positive play.

Attitudinal Loyalty. Fourteen items were used to measure attitudinal loyalty toward the M Life Rewards program. Twelve of the items were experimenter created and were designed to measure different facets of attitudinal loyalty including identification (e.g., "I am invested in the M Life Rewards program"), satisfaction (e.g., "I value being a member of the M Life Rewards program"), and trust (e.g., "I trust that I will get my money's worth out of being an M Life Rewards program member"). As well, two items from Cameron's (2004) ingroup affect subscale of social identity were adapted to the current context and used to measure affective loyalty (e.g., "I'm glad to be an M Life Rewards program member"). Response options ranged from 1 (*strongly disagree)* to 7 (*strongly agree*).

A factor analysis was first conducted to determine whether the items designed to measure attitudinal loyalty represented more than one factor. Results from Bartlett's test of sphericity were significant, indicating the items were indeed sufficiently correlated, $\chi^2(91) = 2076.72$, $p < .001$. As well, the result from the Kaiser-Meyer-Olkin test was greater than .80, indicating that the data were well suited for factor analysis (KMO = .94). Maximum likelihood was used as the method for extracting factors. The eigenvalues and scree plot indicated that the data best fit a one-factor solution. All 14 items had factor loadings greater than .60. A mean score was calculated on all 14-items ($\alpha = .96$), with higher scores indicating higher levels of attitudinal loyalty to the M Life Rewards program.[1]

Data Analysis

A correlational analysis was first conducted to examine how the overall measure of positive play, as well as the four subscales assessing beliefs (i.e., gambling literacy, and personal responsibility) and behaviours (i.e., honesty & control, and pre-commitment) relate to attitudinal loyalty. A regression analysis was then conducted with the composite score of positive play entered as the predictor of attitudinal loyalty. To assess whether including disordered gambling symptomatology changed this association, a second regression was conducted with both the composite score of positive play and disordered gambling symptomatology entered as predictors of attitudinal loyalty.

Next, to examine whether there were unique relations between the different facets of positive play and loyalty, multiple regression was conducted with the four subscales of positive play beliefs entered into a model predicting scores on attitudinal loyalty. A final multiple regression analysis was conducted adding disordered gambling symptomatology as a predictor in the model. When all four subscales and disordered gambling symptomatology were used as predictors, residual variance was heteroscedastic (see Appendix L for assumption checks). To address this violation of least squares regression, the regression analyses were repeated using Darlington and Hayes (2017) RLM macro for conducting regression with robust standard errors.

Results

Means, standard deviations and between-variable correlations are reported in Table 3.

Overall positive play. The correlation between positive play as a composite score and attitudinal loyalty was not statistically significant (r = .07, p = .33). Therefore, positive play did not uniquely account for any variance in attitudinal loyalty toward the

casino loyalty program, $F(1, 186) = 0.68$, $SE = 1.11$, $p = .41$. However, when disordered gambling was entered into the model as a covariate predictor, the model accounted for 9% of the variance in attitudinal loyalty, $F(2, 185) = 11.57$, $p < .001$, $SE = 1.06$, $R^2 = .09$, $f^2 = .10$. Moreover, both positive play as an overall composite score, $\beta = 0.43$, $SE = 0.13$, $t(188) = 3.42$, $p < .001$, 95% CI [0.18, 0.68], and disordered gambling symptomatology, $\beta = 0.06$, $SE = 0.01$, $t(188) = 4.58$, $p < .001$, 95% CI [0.04, 0.09], uniquely predicted attitudinal loyalty. For every one SD increase in overall positive play, there was a 0.43 unit increase in attitudinal loyalty. Similarly, for every one unit increase in disordered gambling symptomatology, there was a 0.06 unit increase in attitudinal loyalty.

Individual subscales of positive play. The results from the correlation analysis indicated that three of the four positive play subscales were correlated with attitudinal loyalty: gambling literacy ($r = -.29$, $p < .001$), honesty & control ($r = .21$, $p = .004$), and pre-commitment ($r = .21$, $p = .004$). Personal responsibility was not related to attitudinal loyalty ($r = .10$, $p = .19$). Results from the multiple regression analysis revealed that the four subscales of attitudinal loyalty accounted for 18% of the variance in attitudinal loyalty toward the casino loyalty program, $F(4, 183) = 10.75$, $p < .001$, $SE = 1.00$, $R^2 = .18$, $f^2 = .23$. Despite the fact that three of the four subscales were correlated significantly with attitudinal loyalty, in the regression analysis only gambling literacy uniquely predicted attitudinal loyalty, $\beta = -0.34$, $SE = 0.06$, $t(188) = -5.84$, $p < .001$, 95% CI [-0.45, -0.22]. For every one unit increase in gambling literacy, there was a 0.34 unit decrease in attitudinal loyalty. Personal responsibility ($\beta = 0.17$, $SE = 0.11$, $t(188) = 1.57$, $p = .12$, 95% CI [-0.04, 0.39]), pre-commitment ($\beta = 0.15$, $SE = 0.12$, $t(188) = 1.31$, $p =$

.19, 95% CI [-0.08, 0.38]) and honesty & control (β = 0.07, *SE* = 0.11, $t(188) = 0.65$, p = .51, 95% CI [-0.15, 0.29]) did not uniquely predict attitudinal loyalty.

When disordered gambling symptomatology was entered as an additional predictor in the model, the pattern of results did not change substantially. The 5 predictor model accounted for 20% of the variance in attitudinal loyalty, $F(5, 182) = 17.38$, $p <$ .001, *SE* = 0.99, R^2 = .20, f^2 = .26. Gambling literacy was once again the only factor of positive play to uniquely predict attitudinal loyalty, β = -0.25, *SE* = 0.08, $t(188) = -3.20$, p = .002, 95% CI [-0.40, -0.09]. Disordered gambling symptomatology also uniquely predicted attitudinal loyalty, β = 0.03, *SE* = 0.01, $t(188) = 2.36$, p = .02, 95% CI [0.006, 0.06]. Personal responsibility (β = 0.16, *SE* = 0.12, $t(188) = 1.38$, p = .17, 95% CI [-0.07, 0.39]), honesty & control (β = 0.11, *SE* = 0.11, $t(188) = 1.01$, p = .31, 95% CI [-0.11, 0.34]), and pre-commitment (β = 0.17, *SE* = 0.12, $t(188) = 1.42$, p = .16, 95% CI [-0.07, 0.41]), did not significantly predict attitudinal loyalty toward the M Life Rewards program.

Discussion

The results provided partial support for our initial hypothesis. Positive play as a composite score was not in and of itself associated with attitudinal loyalty. Only when disordered gambling symptomatology was entered into the model did the association between positive play and attitudinal loyalty emerge as significant. These results suggest that problem gambling severity may be a suppressor variable.

Suppressor effects often appear when there is a moderate, negative correlation between predictors (Watson et al., 2013), such as was the case between the composite score of positive play and disordered gambling symptomatology. Conger (1974) defines a

suppressor variable as a variable that increases the predictive power of another variable by its inclusion in the model. To this end, by including disordered gambling symptomatology in the model, the predictive utility of positive play as a composite score was increased. The suppression effect of disordered gambling symptomatology was likely observed because disordered gamblers tend to be more loyal than recreational, responsible players (Delfabbro et al., 2021; Haycock et al., 2012). Thus, it is possible that disordered gambling symptomatology was accounting for a large proportion of the variance in attitudinal loyalty. Only after accounting for the association between disordered gambling and loyalty does the relation between positive play and loyalty emerge. The suppressor variable therefore improves the overall predictive power of the model.

From a theoretical perspective, suppressor effects need to be interpreted in tandem with the other predictors in the model (Tzelgov & Henik, 1991). The results suggest that positive play and disordered gambling are distinguishable components that when examined together, each have a positive association with attitudinal loyalty. Moreover, these results may be capturing two distinct groups of players. That is, although players high in positive play have higher levels of satisfaction, trust in and identification with the loyalty program (i.e., attitudinal loyalty), the same is true for disordered gamblers. Players with higher levels of disordered gambling symptomatology also seem to have higher levels of attitudinal loyalty toward the casino brand.

A more nuanced understanding may be drawn from examining the subscales of positive play individually. Both positive play behaviours (i.e., honesty & control, and pre-commitment) were positively correlated with attitudinal loyalty toward the M Life

Rewards program. Individuals who reported being more honest about their gambling and who frequently set limits on either the time or money they spend on gambling appeared to have more favourable attitudes toward the program. The association between positive play behaviours and attitudinal loyalty may be due to the player only spending what they intend, and therefore feel that they benefit from belonging to the program through earning points on money spent, without experiencing any drawbacks (i.e., harms). Indeed, positive play behaviours lead gamblers to have better control over their expenditure and therefore are less likely to experience harm as a result of excessive gambling losses (Delfabbro et al., 2020; Hing et al., 2019; Wood et al., 2017). Experiencing fewer harms may produce a more satisfactory perception of the casino and its affiliated loyalty program.

The negative association of gambling literacy with attitudinal loyalty was unexpected, and consequently deserves comment. Gambling literacy is a core aspect of positive play—and indeed it is positively correlated with the other three components of positive play—but even at the zero-order level, the data indicate that those who are more knowledgeable about their odds of winning tend to report lower levels of attitudinal loyalty. Moreover, gambling literacy was the only positive play factor that uniquely predicted attitudinal loyalty (regardless of whether disordered gambling symptomatology was included in the model).

It may be that these highly knowledgeable players are less loyal to the casino because they recognize that the “decks are stacked” (so to speak) in favour of the casino. If loyalty program members understand that gambling is often a losing game, they may have poorer perceptions of the loyalty program and may be less satisfied with its

operations—the net result being lower levels of attitudinal loyalty. These results are somewhat supported by previous research from Delfabbro and colleagues (2020) who found that players who were higher in gambling literacy reported lower levels of perceived benefits of gambling, such as finding gambling enjoyable and exciting. Their results suggest that gambling literate players may have less satisfactory experiences when gambling, and low satisfaction is often an indicator of lower attitudinal loyalty (Kumar et al., 2013).

Although Study 1 provided support for our hypothesis that positive play overall would be positively associated with attitudinal loyalty (after accounting for disordered gambling symptomatology), customer loyalty is a multifaceted construct that also comprises behaviours (Dick & Basu, 1994). To this end, it was important to expand upon the results from Study 1 by examining whether positive play (and its individual components) also predicts behavioural loyalty.

Study 2

Currently, there is a paucity of research on behavioural loyalty in the gambling industry because player-account data is very difficult to obtain. In Study 2, we were able to assess the association between positive play and behavioural loyalty because we were granted permission to not only survey players who enrolled in a Canadian casino loyalty program, we were also given access to their player-account data (if they player granted us consent to do so). We used this unique opportunity to test the hypothesis that because positive players endorse beliefs and engage in behaviours conducive to safe, responsible gambling, they should visit the casino less frequently and spend less money gambling relative to players lower in positive play. Therefore, positive play overall should be

negatively associated with behavioural loyalty. Moreover, this association should hold even when disordered gambling symptomatology (an established predictor of behavioural loyalty; Williams & Wood, 2007) is taken into account.

We also assessed whether the individual subscales of positive play predict behavioural loyalty. For example, positive play factors that involve intrinsic reflection on one's own gambling (i.e., personal responsibility and honesty & control) may be weak predictors of behavioural loyalty. The extent to which a player takes ownership of their own gambling habits and is honest with themselves about the time and money they spend gambling likely has little influence on how many times they choose to visit the casino and gamble. Conversely, gambling literacy may be negatively associated with behavioural loyalty. If a player understands the relatively low odds of winning in gambling games and gambles mainly for enjoyment purposes, they may be more likely to place conservative bets and smaller wagers, resulting in lower levels of behavioural loyalty.

Lastly, we examined whether behavioural loyalty is a function of the type of limit a player sets on their play. Whilst most players report that they typically set a hard (i.e., strict) limit on the amount of money they are willing to spend on gambling, others set a soft (i.e., flexible) limit (Wohl & Davis, 2020). From a responsible gambling perspective, setting a hard limit is more likely to minimize gambling-related harms because, in part, players who do so are less likely to gamble excessively (see Wohl et al. 2010). In this light, we hypothesized that the relative frequency with which one sets hard limits would be negatively associated with money spent gambling (i.e., behavioural loyalty). Moreover, by adhering to a strict money limit, players will lose less money gambling (by

way of only spending what they can afford to lose) and may therefore be less likely to feel the need to revisit the casino at a later date to win back their lost money (i.e., chase their losses). Indeed, when Rodda and colleagues (2019) interviewed gamblers about their reasons for spending beyond their financial means, some gamblers reported that failing to set a strict money limit led them to chase their losses. Thus, setting strict limits may be associated with fewer visits to the casino.

Setting a soft limit, by definition, affords the player permission to exceed their pre-set monetary limit. Although players who set a soft money limit likely spend less money than those who set no money limit at all, we hypothesized that the relative frequency with which one sets soft limits would be positively associated with visits to the casino and money spent gambling (i.e., behavioural loyalty) because most players gamble beyond their flexible limits. We also posited that these associations would be present even when disordered gambling symptomatology is taken into account.

Method

Participants and Procedure. A secondary data analysis was conducted using data from a longitudinal study that examined the uptake of a responsible gambling tool that allowed players to set a money and/or time limit on their gambling (i.e., the amount of time and/or money they are willing to lose in a given session).[2] The current study used data from Wave 1 of the study, which was collected three-months prior to the launch of the responsible gambling tool. The first wave was selected as the data set of interest to ensure that the launch, and potential engagement with the new limit setting tool would not have any confounding effects on the observed results.

For the first wave of the study, gamblers were recruited either through an online listserv (*N* = 71) or were approached when entering the local slots and racetrack casino (*N* = 312). Interested individuals were asked whether they would like to participate in a study about a new limit setting tool being introduced at the casino in the next three months. Participants were eligible if they were members of the casino-affiliated loyalty program and granted the research team permission to access their player data recorded through their loyalty program player account.

Upon granting consent, participants completed measures assessing their level of disordered gambling symptomatology, and positive play beliefs and behaviours. Additional measures were also completed but were not analyzed in the current secondary data analysis. Participants were also asked to provide their loyalty program player account ID number to grant access to information on their number of visits to the casino and amount of money wagered. After the participants were debriefed, they were given a $10 Amazon gift card as remuneration for their participation in the study which took approximately 20 minutes to complete. The study received ethical clearance from the authors' institutional research review board.

The final sample consisted of 383 loyalty program members (164 (43.3%) males, 217 (56.7%) females) with a mean age of 56.70 (*SD* = 9.88). The average level of disordered gambling symptomatology across the sample was 3.14 (*SD* = 4.58) representing a moderate level of gambling severity.

Measured Variables

Disordered Gambling Symptomatology. Disordered gambling symptomatology was measured using the same nine-item scale (α = .92) used in Study 1 (Appendix C).

Positive Play Beliefs and Behaviours. As in Study 1, the Positive Play Scale (Wood et al., 2017) was used to measure positive play. Average subscale scores were calculated for gambling literacy (α = .60), personal responsibility (α = .89), and honesty & control (α = .86). However, the fourth subscale of the Positive Play Scale, which measures pre-commitment behaviours, was not included in the data set. Rather, pre-commitment was measured using two separate items that assessed the player's tendency to set and adhere to money limits. The first item reflected the participants' use of soft money limits (i.e., "When I play, I set a suggested (or "soft") money budget. I give myself some flexibility with my money budget, should I want to keep playing.") The second item assessed the player's use of hard money limits (i.e., "When I play, I set a strict (or "hard") money budget. I tell myself I must stop playing as soon as my money budget is reached.") Responses options included 1 (*never*), 2 (*Rarely or about 10% of the time*), 3 (*Occasionally or about 30% of the time*), 4 (*Sometimes or about 50% of the time*), 5 (*Frequently or about 70% of the time*), 6 (*Usually or about 90% of the time*) or 7 (*every time*). Higher scores represented a higher frequency of setting soft or hard money limits on their gambling expenditure (Appendix M).

As in Study 1, a composite score was calculated to represent an overall measure of positive play. The average subscale scores for gambling literacy, personal responsibility, honesty & control, and the two items measuring soft and hard limits were standardized. An average of the standardized scores was then calculated and used to represent overall positive play. Higher scores represented higher levels of positive play.

Behavioural Loyalty. The number of visits to the casino and the amount of money wagered on gambling games (in CDN$ 100s) in the three months prior to the launch of

the responsible gambling tool (as tracked through their player account) were used to represent the extent to which the individual was behaviourally loyal to the casino. More frequent visits and higher amounts of money wagered on gambling games represented higher behavioural loyalty. To avoid the influence of outliers, extreme scores above the 95th percentile were re-coded to be equal to the 95th percentile (see Wohl et al., 2017 for similar methodology).

Data Analysis

There were no differences (i.e., *p*s > .13) between those recruited online or in-person on any of the key variables of interest, thus the recruitment method was collapsed in all analyses.

As in Study 1, a correlational analysis was conducted to examine how positive play beliefs (i.e., gambling literacy, and personal responsibility) and behaviours (i.e., honesty & control, and pre-commitment), as well as the overall measure of positive play relate to behavioural loyalty (i.e., amount of money wagered and number of visits). A regression analysis was then conducted with the composite score of positive play as the predictor and visits to the casino as the outcome. A follow-up regression analysis was then conducted with disordered gambling symptomatology added as a predictor to the model. Next, a multiple regression analysis was conducted with gambling literacy, personal responsibility, honesty & control, soft limit setting and hard limit setting entered into a model predicting visits to the casino. Disordered gambling symptomatology was then added to the model as an additional predictor. The same four regressions were then conducted with the amount of money wagered used as the dependent variable. Missing

data were addressed using Full Information Maximum Likelihood with MPlus software (see Appendix L for missing data analysis and assumption checks).

Results

Means, standard deviations and between-variable correlations are reported in Table 4. Results from a sensitivity analysis indicated the sample size (N = 383) was sufficiently powered (i.e., 80%) to detect effect sizes larger than f^2 =.04.

Visits to the casino.

Overall positive play. The results revealed that the composite score of positive play was negatively correlated with visits to the casino (r = -.18, p = .001) and accounted for 3% of the variance in visits to the casino, R^2 = .03, f^2 =.03. For every one SD increase in positive play, there was a 3.31 unit decrease in visits to the casino, β = -3.31, SE = 1.05, t(383) = -3.16, p = .002, 95% CI [-5.36, -1.59]. However, when disordered gambling symptomatology was entered into the model as a predictor (R^2 = .08, z = 2.33, SE = 0.04, p = .02, f^2 =.09), positive play no longer predicted visits to the casino, β = -1.22, SE = 1.19, t(383) = -1.03, p = .31, 95% CI [-3.54, 1.11]. Rather, disordered gambling symptomatology was the only unique predictor of visits to the casino, β = 0.61, SE = 0.19, t(383) = 3.20, p = .001, 95% CI [0.24, 0.99]. For every one unit increase in disordered gambling symptomatology, there was a 0.61 unit increase in visits to the casino.

Individual subscales of positive play. Results from the correlation analysis indicated that there was a significant, negative correlation between positive play behaviours and visits to the casino over a three-month period. Higher levels of honesty & control (r = -.19, p = .001) and hard limit setting (r = -.23, p < .001) were associated with

fewer visits to the casino. In contrast, neither positive play belief was significantly correlated with visits to the casino (i.e., gambling literacy: r = -.01, p = .87, personal responsibility: r = -.09, p = .12), nor was frequency of setting soft money limits (r = -.08, p = .18). Results from the multiple regression equation revealed that positive play beliefs and behaviours accounted for 7% of the variance in visits to the casino, R^2 = .07, z = 2.37, SE = 0.03, p = .02, f^2 =.07. Setting hard money limits was the only unique predictor of visits to the casino, β = -1.08, SE = .41, t(383) = -2.65, p = .008, 95% CI [-1.89, -1.76]. For every one unit increase in strict limit setting, there was a 1.08 unit decrease in visits to the casino. Gambling literacy (β = 0.53, SE = 0.56, t(383) = 0.96, p = .34, 95% CI [-0.56, 1.63]), personal responsibility (β = 0.05, SE = 0.61, t(383) = 0.08, p = .94, 95% CI [-1.15, 1.25]), honesty & control (β = -1.00, SE = 0.55, t(383) = -1.82, p = .07, 95% CI [-2.07, 0.08], and soft limit setting did not uniquely predict visits to the casino (β = -0.11, SE = 0.32, t(383) = -0.35, p = .73, 95% CI [-0.73, 0.51].

When disordered gambling symptomatology was entered as an additional predictor (R^2 = .11, z = 2.93, SE = 0.04, p = .003, f^2 =.12), the same pattern of results emerged. Frequency of setting hard limits was the only facet of positive play to uniquely predict visits to the casino, β = -0.84, SE = 0.41, t(383) = -2.06, p = .04, 95% CI [-1.64, -0.04]. For every one unit increase in frequency of setting hard money limits when gambling, there was a 0.84 unit decrease in visits to the casino. Gambling literacy (β = 0.75, SE = 0.51, t(383) = 1.48, p = .14, 95% CI [-0.24, 1.75]), personal responsibility (β = 0.07, SE = 0.58, t(383) = 0.11, p = 0.91, 95% CI [-1.07, 1.21]), honesty & control (β = -0.41, SE = 0.58, t(383) = -0.70, p = .48, 95% CI [-1.55, 0.73], and soft limit setting did not predict visits to the casino (β = -0.01, SE = 0.32, t(383) = -0.04, p = .97, 95% CI [-

0.83, 0.61]. However, disordered gambling symptomatology also uniquely predicted visits to the casino, $\beta = 0.55$, $SE = 0.20$, $t(383) = 2.76$, $p = .006$, 95% CI [0.16, 0.93]. For every one unit increase in disordered gambling symptoms, there was a 0.55 unit increase in visits.

Amount of money wagered.

Overall positive play. As with visits to the casino, there was a significant negative correlation between the composite score of positive play and amount of money wagered over a three month period ($r = -.15$, $p = .01$), accounting for 2% of the variance in the amount of money wagered, $R^2 = .02$, $f^2 = .02$. For every one SD increase in positive play, there was a $15 decrease in the amount of money wagered at the casino. However, when disordered gambling symptomatology was entered into the model as an additional predictor ($R^2 = .06$, $z = 1.78$, $p = .002$, $f^2 = .06$), positive play no longer uniquely predicted amount of money wagered, $\beta = -1.13$, $SE = 1.47$, $t(383) = -0.77$, $p = .44$, 95% CI [-4.01, 1.74]. Disordered gambling symptomatology was the only unique predictor of the amount of money wagered, $\beta = 0.67$, $SE = 0.28$, $t(383) = 2.47$, $p = .01$, 95% CI [0.14, 1.23]. For every one unit increase in disordered gambling symptomatology, there was a $67 increase in the amount of money wagered.

Individual subscales of positive play. As with visits to the casino, only the positive play behaviours were significantly correlated with the amount wagered over a three-month period. There was a negative relation between honesty & control ($r = -.14$, $p = .02$), hard limit setting ($r = -.26$, $p < .001$), and soft limit setting ($r = -.12$, $p = .05$) and amount wagered. Gambling literacy ($r = .08$, $p = .20$) and personal responsibility ($r = -.02$, $p = .79$) were not correlated with the amount wagered.

Results from the regression analysis with all positive play beliefs and behaviours entered into the model revealed that the set of predictors accounted for 10% of the variance in the amount wagered, R^2 = .10, z = 2.92, p = .004, f^2 = .12. Gambling literacy, β = 1.64, SE = 0.77, t(383) = 2.14, p = .03, 95% CI [0.14, 3.15], and frequency of setting hard limits, β = -1.87, SE = 0.57, t(383) = -3.31, p = .001, 95% CI [-2.98, -0.76] uniquely predicted variance in the dependent variable. For every one unit increase in gambling literacy, there was a $164 increase in the amount wagered. Conversely, for every one unit increase in hard limit setting, there was a $187 decrease in the amount wagered. Personal responsibility (β = 0.75, SE = 0.86, t(383) = 0.87, p = .39, 95% CI [-0.93, 2.43]), honesty & control (β = -0.87, SE = 0.85, t(383) = -1.02, p = .31, 95% CI [-2.53, 0.79]), and soft limit setting (β = -0.53, SE = 0.16, t(383) = -1.39, p = .29, 95% CI [-1.28, 0.22]) did not uniquely predict amount of money wagered.

When disordered gambling was entered into the model as an additional predictor, the model accounted for 13% of the variance in amount of money wagered, R^2 = .13, z = 3.09, SE = 0.04, p = .002, f^2 =.15. Moreover, the pattern of results was the same as when disordered gambling symptomatology was not included as a predictor. Both gambling literacy, β = 1.94, SE = 0.78, t(383) = 2.44, p = .02, 95% CI [0.38, 3.51], and hard limit setting, β = -1.58, SE = 0.55, t(383) = -2.88, p = .004, 95% CI [-2.65, -0.50] uniquely predicted amount wagered. For every one unit increase in gambling literacy, there was a $194 increase in the amount wagered. Moreover, for every one unit increase in relative frequency of hard limit setting, there was a $158 decrease in the amount wagered. As well, disordered gambling symptomatology uniquely predicted the amount wagered, β = 0.60, SE = 0.26, t(383) = 2.28, p = .02, 95% CI [0.08, 1.11]. For every one unit increase

in disordered gambling symptoms, there was a $60 increase in the amount wagered. Once again personal responsibility (β = 0.77, *SE* = 0.81, $t(383) = 0.95$, $p = .34$, 95% CI [-0.83, 2.37]), honesty & control (β = -0.29, *SE* = 0.87, $t(383) = -0.33$, $p = .74$, 95% CI [-2.01, 1.43]), and soft limit setting (β = -0.40, *SE* = 0.38, $t(383) = -1.06$, $p = .29$, 95% CI [-1.38, 0.34]) did not uniquely predict amount wagered.

Discussion

The results from Study 2 provided support for our general hypothesis that there is a negative association between overall levels of positive play and behavioural loyalty. Higher levels of responsible gambling beliefs and behaviours were associated with fewer visits to the casino and less money spent on gambling. However, when disordered gambling symptomatology was accounted for, positive play was no longer a significant predictor of behavioural loyalty. Thus, although there is a negative association between positive play and expenditure, disordered gambling symptomatology may be more important for understanding this relation. These results are unsurprising given that disordered gambling symptomatology is a strong predictor of player visits and spend (i.e., behavioural loyalty). Players who are addicted to gambling are more likely to revisit the casino at a later date to try to win back losses and tend to place more frequent and higher bets (Cusack et al., 1993). Indeed, some research suggests that disordered gamblers are responsible for approximately 60% of the revenue earned by casinos (Williams & Wood, 2007).

There were, however, unique associations between the individual subscales of positive play and behavioural loyalty. For example, as hypothesized, frequency of setting hard limits (i.e., strict self-imposed limits on the amount of money willing to be spent on

gambling) was a significant predictor of both visits to the casino and amount of money wagered. Moreover, this association remained present even after accounting for disordered gambling symptomatology. Players who reported that they set a hard limit on their gambling expenditure tended to visit the casino less frequently and wagered less money gambling relative to players who reported setting a soft money limit. These results are supported by a growing body of evidence indicating that a hard or mandatory limit on gambling expenditure helps players to spend less money gambling (i.e., lower behavioural loyalty; see Delfabbro & King, 2020 for a review). Moreover, by setting a hard money limit, players may be more aware of their monetary losses, and by extension will feel less of a need to revisit the casino to win back lost money. Indeed, gamblers report that setting limits helps to decrease chasing behaviour (Rodda et al., 2019).

In line with our hypothesis, personal responsibility and honesty & control did not uniquely predict variance in behavioural loyalty. When examining the positive play factors together, the extent to which the player felt personal ownership over their gambling, or was honest about their expenditure, did not predict the number of times they visited the casino or the amount of money they wagered. These results may be because personal responsibility and honesty & control involve intrinsic reflection on one's own beliefs about their gambling habits (e.g., "It is my responsibility" and "I was honest"), which may have little influence over their engagement with the casino (i.e., behavioural loyalty). That is, players could choose to spend either small amounts of money or large amounts of money gambling and still feel personally responsible and honest about their expenditure, limiting their predictive utility over behavioural loyalty.

Contrary to expectations, when all factors of positive play were entered into the model, gambling literacy had a significant *positive* association with behavioural loyalty. Players who were more gambling literate (i.e., understood the low odds of winning and that the likelihood of winning does not improve over time) spent more money gambling than players who were relatively less gambling literate. It is possible that when gamblers have an accurate understanding of the nature of gambling games (e.g., that the odds are in favour of the casino), they feel more comfortable spending money gambling. Indeed, people who are financially literate (i.e., understand personal money management and various financial skills) tend to make larger and more frequent high-risk investments compared to those lower in financial literacy because they feel they understand the associated risks (Kawamura et al., 2021). Another potential explanation may be that for some players, irrational cognitions about gambling override rational thoughts when engaging in gambling. Sévigny and Ladouceur (2003) observed that although gamblers would have a high level of understanding of chance-based games prior to beginning gambling, their rational thoughts would "switch off" when engaging in play and irrational thoughts (e.g., a win is guaranteed after a string of losses) would take over. Moreover, after stopping gambling, their rational thoughts about their low odds of winning would turn back on. Although players may score high in gambling literacy when not engaged in gambling, their rational thoughts may "switch off" when engaging in play, resulting in higher levels of expenditure (i.e., behavioural loyalty).

General Discussion

In the current work, we examined whether positive play (i.e., responsible gambling beliefs and behaviours) is a predictor of attitudinal (Study 1) and behavioural

(Study 2) loyalty. We hypothesized that positive play, in its totality, would be positively associated with attitudinal loyalty. This is because players who endorse positive play beliefs and engage in positive play behaviours report having a more satisfactory experience gambling (Wood & Griffiths, 2008). Satisfaction is a key component of attitudinal loyalty (Kumar et al., 2013). Thus, we hypothesized positive players would report higher levels of attitudinal loyalty toward the casino loyalty program. Conversely, because positive players have an accurate understanding of the low odds of winning and tend to gamble within affordable limits (Wood et al., 2017), we posited that there would be a negative association between positive play and behavioural loyalty (operationalized as visits to the casino and amount of money wagered).

Results from Study 1 provided support for our general hypothesis that positive play predicts attitudinal loyalty. However, this relation was detected only when controlling for disordered gambling symptomatology, thus suggesting that disordered gambling symptomatology suppresses the link between positive play and attitudinal loyalty. This may be because players high in positive play (i.e., responsible players) as well as players high in disordered gambling (i.e., problematic players) have positive perceptions of the loyalty program brand. As such, it is important to take disordered gambling symptomatology into account when examining the influence of positive play on loyalty.

Results from Study 2 provided mixed support for our idea that positive play influences behavioural loyalty. We observed a significant negative association between overall positive play and behavioural loyalty. Specifically, the number of times a participant visited the casino and the amount wagered at that casino decreased as

participants' positive play score increased. However, these associations disappeared when controlling for disordered gambling symptomatology. Although positive play is not the antithesis of disordered gambling, the two concepts are moderately negatively correlated, and their shared variance accounts for a significant proportion of the explained variance in visits and expenditure. A secondary interest of the current research was to assess whether each positive play belief (i.e, gambling literacy and personal responsibility) and behaviour (i.e., honesty & control and pre-commitment) uniquely predicted both attitudinal and behavioural loyalty, and whether any association would change after accounting for disordered gambling symptomatology. Because loyalty is perceived as a relationship between the customer and the brand (Kumar & Reinartz, 2018), we predicted that the positive play factors that involve self-reflection (i.e., personal responsibility and honesty & control) would have weak predictive utility for loyalty. Conversely, positive play components that involve the player reflecting on their interactions with the casino and its games (i.e., gambling literacy and pre-commitment) would have stronger predictive utility toward loyalty.

Results from Study 1 revealed that gambling literacy was the only unique predictor of attitudinal loyalty. Specifically, higher levels of gambling literacy were associated with lower levels of attitudinal loyalty. Because gambling literate players are aware of the low odds associated with gambling and casinos are not necessarily keen on educating players about the odds (and games are often created to mask losses; e.g., multi-line slot machines that have losses disguised as wins; see Dixon et al., 2010), players high in gambling literacy may be less trusting of the casino and have a more negative perception of the overall casino brand because they know that over the long term the

casino will always win (i.e., the player will lose most, if not all, of the money they wager). The net effect of this uneven playing field is a lower level of attitudinal loyalty relative to players who are more naive to the functionality of gambling games. Contrary to expectation, results from Study 2 indicated that gambling literacy was *positively* associated with money spent on gambling. Players who were higher in gambling literacy wagered more money over a three-month period relative to players lower in gambling literacy.

Implications

Identifying antecedents of loyalty is important for understanding a company's customer-base (Kim et al., 2008; Kumar & Shah, 2004). In the field of gambling studies, assessments of attitudinal and behavioural loyalty have been hampered by limited access to players enrolled in a casino-based loyalty program and their player-account data. In the current research, we were uniquely positioned to assess the association between positive play and behavioural loyalty because we were not only able to survey players who enrolled in a casino loyalty program (Studies 1 and 2), we were also given access to their player-account data (Study 2). From this unique data, we found positive play in general, as well as its components, have the potential to heighten and lower both attitudinal and behavioural loyalty. On the one hand, fostering overall positive play among patrons may increase a player's satisfaction with their gambling experience and foster trust in and identification with the casino brand (i.e., attitudinal loyalty). Thus, it may benefit casinos to develop targeted programs, such as educational responsible gambling initiatives, that are designed to increase positive play among their patrons, which may in turn boost their

level of attitudinal loyalty. However, those who endorse positive play beliefs and behaviours may spend less money at the casino, the key metric in behavioural loyalty.

On the surface, positive play may be viewed by the gambling industry as undermining profits and thus something it may not want to promote. After all, responsible customers set a limit on the amount of time and money they spend gambling and adhere to that limit (Blaszczynski et al., 2004). But if positive players are attitudinally loyal to the casino, and they play within their means, they may be more sustainable players in the long run. In fact, the gambling industry may be better served (over the long haul) by focusing its attention on fostering attitudinal loyalty, rather than behavioural loyalty. Providing some support for this supposition, Reinartz and Kumar (2002) found a weak correlation between behavioural loyalty and company profitability. This is because there are often high operational costs associated with maintaining a highly behaviourally loyal customer. In the casino industry it is expensive for a casino to provide big spenders (or behaviourally loyal customers) with premium personalized service, and gifted compensation for their spending (e.g., free airfare and boarding). Rather, a sustainable customer who makes reliable and frequent smaller purchases is less expensive to maintain, and thus potentially more profitable (Reinartz & Kumar, 2002). Additionally, loyalty program members who are attitudinally loyal are more likely to recommend brands to their friends and family (i.e., other potential customers) relative to members who are not attitudinally loyal (Wong et al., 2015). Word-of-mouth and referred customers can be an important method for growing a customer base and generating profits (Kumar et al., 2007). Although positive players themselves may not spend large amounts of money gambling (because they will only gamble within an affordable limit),

they may help drive profitability by helping to attract new customers. It would benefit researchers to conduct profit-loss modeling to assess the profitability of positive players over the long term, relative to more problematic players.

Limitations

Some limitations of the current work should be noted. First, the research was cross-sectional in nature, so causality cannot be established. It is possible that positive play and its components may have a bi-directional relation with loyalty. For example, as players begin to gamble more frequently (i.e., with increasing levels of behavioural loyalty) they may begin to have a better understanding of the functionality of gambling games and their relative (low) odds of winning (i.e., higher gambling literacy). Their higher level of gambling literacy may in turn increase their level of comfort when gambling, predicting higher levels of behavioural loyalty. Longitudinal research is needed to understand how the directionality and relation between positive play and loyalty changes over time. Second, due to the nature of the research design, attitudinal and behavioural loyalty were not able to be examined in the same study and sample. It would behoove researchers to examine how positive play relates to attitudinal and behavioural loyalty, or influences the relation between attitudinal and behavioural loyalty in one representative sample. Lastly, the analyses that regressed behavioural loyalty on the composite score of positive play in Study 2 were slightly underpowered for detecting small effect sizes. Results from those particular analyses should be interpreted with caution and further research that is sufficiently powered is needed to buttress the results.

Conclusion

For casinos to establish an effective casino loyalty program, it is important to understand which customers are more likely to be attitudinally and behaviourally loyal. Traditionally, research on understanding customer loyalty has been approached through a marketing lens (i.e., creating customer profiles and identifying the most profitable patrons; Barsky & Tzolov, 2010b). We sought to use a responsible gambling approach to understand how positive play relates to player loyalty. Our results indicate that positive play in general is positively associated with attitudinal loyalty. However, gambling literacy, a component of positive play, is predictive of lower levels of attitudinal loyalty. Conversely, disordered gambling symptomatology is likely more important than positive play for understanding behavioural loyalty. Though contrary to expectation, gambling literacy was a unique predictor of higher levels of gambling expenditure.

The findings from Chapter Three helped to establish that there may be downstream consequences of positive play on attitudinal loyalty. Thus, it would benefit both industry and the public to examine how loyalty programs can be utilized to foster positive play among their patrons. In Chapter Four, we sought to expand upon of the findings from Chapter Three by investigating how incentivizing positive play (via granting players loyalty program reward points for using a responsible gambling tool) may affect both willingness to engage in responsible gambling behaviours and attitudinal loyalty.

Chapter Four

Reward Them and They Will Come:

Rewarding Responsible Gambling Tool Use Increases Willingness to Use Such Tools As Well As Attitudinal Loyalty

The primary purpose of a loyalty program is to foster both attitudinal (i.e., positive brand perceptions) and behavioural (i.e., revisit and repurchase behaviour) loyalty among customers (Dick & Basu, 1994; Gomez et al., 2006; Henderson et al., 2011; Uncles et al., 2003). These programs have become a pervasive marketing strategy across the retail, hospitality, and entertainment domains. In the gambling industry, for example, each of the world-leading casino companies (by revenue) offer their customers the ability to enroll in a brand affiliated loyalty program (Statista, 2020). Those who choose to enroll in casino-based loyalty programs are typically granted reward points in exchange for the money spent on gambling (Baloglu et al., 2017; Wohl, 2018). These points can then be redeemed for, among other tangible rewards, free play (e.g., free spins) on an electronic gaming machine, or a percentage of cash back (Wohl, 2018). Casino loyalty program members can also receive superior, intangible rewards, such as more exclusive and personally tailored services (e.g., private dealers, VIP lounge access; Barsky & Tzolov, 2010a; Hendler & LaTour, 2008; Prentice, 2013).

Because the rewards received via loyalty programs in the gambling industry tend to extend the time a player gambles (by way of free play) and encourages the player to return to the gambling venue (for the rewards they can receive), responsible gambling researchers have raised concern about the potential for casino loyalty programs to

contribute to the development of disordered gambling (Responsible Gambling Council, 2013; Williams et al., 2012; Wohl, 2018). This concern has some merit. Disordered gamblers are more likely to enroll in a casino loyalty program and find them more appealing compared to recreational players (Delfabbro & King, 2021; Haycock et al., 2012). However, loyalty programs do not only serve as rewards programs to incentivize player expenditure. They also provide their members with access to responsible gambling tools (e.g., tools that allow players to set a limit on the amount of money they are willing to lose in a given session; Wohl, 2018)—which have been shown to minimize gambling-related harm (for a systematic review see McMahon et al., 2019).

Despite the harm reduction utility of responsible gambling tools, their use is alarmingly low (i.e., 1-10%; Forsström et al., 2016; Nelson et al., 2008). For example, a casino loyalty program in Australia reported that only 2% of members elected to use a responsible gambling tool (Schottler Consulting, 2009). Wohl (2018) argued that one way to increase engagement with responsible gambling tools may be to incentivize their use. Specifically, he put forth the supposition that casino-based loyalty program members should be more willing to use a responsible gambling tool, if granted program reward points for doing so. From a gambling industry perspective, incentivizing engagement in responsible gambling may also foster attitudinal loyalty because players who engage in responsible gambling behaviours (i.e., strategies that allow the player to maintain a safe level of gambling) report more positive gambling experiences (Ricketts & Macaskill, 2004; Wood & Griffiths, 2008). Additionally, loyalty program members may view the granting of rewards for engaging in responsible gambling as the casino attempting to increase safer gambling among their patrons. The net effect may be increased trust in the

casino, which can be indicative of attitudinal loyalty (Gecti & Zengin, 2013; Liang, 2008). To date, the effects of incentivizing responsible play on willingness to use a responsible gambling tool and player attitudinal loyalty has yet to receive empirical attention. In the current work, we aimed to fill this gap.

Casino Loyalty Programs and the Importance of Attitudinal Loyalty

Loyalty is not a unitary construct. Theorists and researchers distinguish between attitudinal loyalty and behavioural loyalty (Dick & Basu, 1994). Players are considered attitudinally loyal when they express brand preference and positive emotions about the company and the affiliated loyalty program (Baloglu, 2002; Gomez et al., 2006; Jones & Taylor, 2007; Tanford & Baloglu, 2013). Additionally, attitudinally loyal members tend to express trust in the company and satisfaction with the products they offer (Baloglu, 2002; Chaudhuri & Holbrook, 2001). Behavioural loyalty refers to the extent to which members engage in actions or behaviours that demonstrate their brand loyalty. For example, players who frequently visit the casino for which they are a loyalty program member, spend a lot of money at that casino, and/or speak positively about the casino, are considered behaviourally loyal (Prentice, 2013; Tanford & Baloglu, 2013). Behavioural loyalty is typically used to measure the profitability of a loyalty program (i.e., whether the program has been effective in increasing the amount of money generated through member purchases; see Liu, 2007; Min et al., 2016, Yoo & Singh, 2016).

A growing body of evidence suggests that both attitudinal and behavioural loyalty are required to produce a truly loyal (i.e., customer with high levels of positive brand perceptions and large share of wallet) and profitable customer (Bandyopadhay & Martell, 2007; Bilgihan et al., 2016; Kumar & Shah, 2004). This is likely because behavioural

loyalty is, in part, an outcome of attitudinal loyalty (Bilgihan et al., 2016; Chen et al., 2009). Customers who are more trusting of and satisfied with a brand, or feel they have an emotional connection to a particular company, are more likely to revisit and spend more money than individuals who are less trusting (Chow & Holden, 1997; Gecti & Zengin, 2013). As well, individuals who are low in attitudinal loyalty are more easily swayed to make purchases with a different company that offers similar products relative to individuals high in attitudinal loyalty (Kim et al., 2008). For this reason, companies are continuously looking for novel strategies to increase their program members' attitudinal loyalty.

One means that companies use to strengthen their customer's attitudinal loyalty is through demonstrating their level of corporate social responsibility (Crespo & del Bosque, 2005; Park et al., 2017). Specifically, many companies advertise the actions they are taking to ensure their company is socially responsible and functions in accordance with societal values. In doing so, the brands are perceived as more trustworthy and thus, are more easily able to earn the attitudinal loyalty of their customers (Mandhachitara & Poolthong, 2011; Palacios-Florencio et al., 2018; Park et al., 2017). In the gambling industry, social responsibility typically takes the form of the company putting in place policies and practices that help their customers to gamble in ways that minimize the risk of gambling-related harm. This often manifests in responsible gambling programs and tools that help the customers to make informed decisions about their play (Blaszczynski et al., 2008; Blaszczynski et al., 2011). Another consequence of such social responsibility efforts is that it may enhance player loyalty. Providing some evidence for this supposition, Chen McCain and colleagues (2019) found that players' perceptions of

casinos' legal and philanthropic corporate social responsibility behaviours were positively associated with customer loyalty. In a like manner, offering players responsible gambling tools (as part of their corporate social responsibility efforts) may enhance loyalty.

Responsible Gambling Tools, Engagement and Attitudinal Loyalty

Responsible gambling tools are any product or service offered by casinos that are usable by gamblers to help the player engage in safer and more positive play (see Robillard, 2017 for an overview). Typically, responsible gambling tools are made available to players through a loyalty program (Nisbet, 2005; Nisbet et al., 2016; Wohl, 2018). When a player elects to enroll in a casino loyalty program, they are given a player card and assigned a player account. Through this account, casino operators are able to keep a record of, among other things, the games they play, amount of time on each machine, and how much money is spent gambling (Hancock et al., 2008; Wohl, 2018). By collecting this information, casinos can create player profiles to facilitate marketing efforts (Barsky & Tzolov, 2010b). However, the information gathered by way of the player's loyalty program account can also be used to help members gamble more responsibly. For example, some loyalty programs allow members to receive behavioural feedback on the exact amount of time and money they have spent gambling over a given period, and how this compares to their own perceptions of their expenditure (Wohl et al., 2017).

Although there is some variability in the kind of responsible gambling tools offered, the most widely offered tool allows loyalty program members to set predetermined limits on the amount of money they are willing to spend gambling in a

given session (Nisbet, 2005; Nisbet et al., 2016). Prior to beginning play on a gambling machine, members enter in their player card information by swiping or scanning their player account card on the machine. By doing so, the exact amount of dollars they spend gambling is tracked, and members receive loyalty program rewards points accordingly. However, in addition to collecting rewards points, by using their player card, members can also elect to set a limit on their gambling expenditure. For example, a member could indicate that they would only like to spend a maximum of $100 dollars gambling over the next 24 hours. Upon spending their limit, members will receive a notification informing them that their predetermined limit has been reached. Players can then decide whether they would like to quit or continue playing and surpass their limit. From a social responsibility perspective, tools that allow players to set a money limit on their gambling expenditure and then reminds players when their limit has been reached have shown promise in terms minimizing excessive gambling behaviour (Auer et al., 2014; Kim et al., 2014; Stewart & Wohl, 2013; Wohl, Gainsbury, et al., 2013).

In addition to minimizing gambling-related harms, emerging evidence suggests that engagement with responsible gambling tools may increase player loyalty. For example, Auer and colleagues (2019) found that loyalty program members who used a voluntary limit setting tool to set limits on their gambling expenditure were more likely to still be active members (i.e., behaviourally loyal) one year later compared to members who did not use the tool. It is possible that by using the responsible gambling tools made available to them through their casino, members feel a heightened sense of security and trust in the casino brand, which are indicative of attitudinal loyalty. In line with this supposition, Wood and Griffiths (2008) found that online poker players reported that the

availability of responsible gambling tools facilitated their trust in the casino and made them feel safer—an indication of higher attitudinal loyalty.

Despite the large body of empirical evidence that indicates responsible gambling tools help players make safer and smarter gambling decisions, as well as the potential for responsible gambling tool use to heighten attitudinal loyalty, gambling operators have had limited success attracting players to these tools. To the point, engagement with responsible gambling tools in general, and limit setting tools specifically, has been very low. It is estimated that only 1% to 10% of players choose to use responsible gambling tools (Forsström et al., 2016; Nelson et al., 2008; Schlotter Consulting, 2009). Therefore, it is important to find strategies to increase engagement with responsible gambling. Doing so may not only benefit the player in terms of minimizing gambling-related harms but may also have a side-benefit for casinos in that responsible gambling tool use may increase attitudinal loyalty.

Rewarding Responsible Gambling Tool Use: A New Method to Increase Engagement and Loyalty

People who gamble tend to evaluate responsible gambling tools favourably (i.e., they think that such tools can minimize gambling-related harms and will not impede play; Gainsbury et al., 2013; Ivanova et al., 2019). However, their intention to use responsible tools is low (Nisbet, 2005). Why is there such a disconnect between the perceived utility of responsible gambling tools and use of those tools? According to Wohl (2018) because some players lack intrinsic motivation (i.e., engaging in a behaviour for internal, personal reasons) to use such harm minimization tools, it may be necessary to provide members with external sources of motivation for use. For instance, loyalty programs could be

leveraged to offer members rewards for engaging with responsible gambling tools (e.g., reward points could be given for each session in which a player adheres to their pre-set limit). Doing so may increase the appeal of responsible gambling tools and provide sufficient motivation to increase gamblers' willingness to engage with the tools.

From a public health standpoint, anything that increases the uptake of responsible gambling tools should be a boon. This is because increased use of responsible gambling tools should be associated with a reduction in gambling-related harms (Tanner et al., 2017). From the perspective of gambling operators, motivating engagement with responsible gambling tools may have downstream consequences for customer loyalty. Specifically, those who are willing to use responsible gambling tools if incentivized to do so may report increased attitudinal loyalty. This is because players may perceive incentivizing responsible gambling tool as the casino desiring to help their patrons gamble more responsibly (i.e., acting socially responsible), which should foster the development of trust in and satisfaction with the casino brand (i.e., attitudinal loyalty).

In the current research, we examined the heretofore untested idea that willingness to use a responsible gambling tool if provided loyalty program points for doing so is positively associated with attitudinal loyalty. Specifically, we tested this idea among gamblers who have never previously used a limit setting tool—the largest population of players, and the population hardest to reach in terms of motivating responsible gambling behaviours. We also hypothesized that the reward-loyalty link would hold even after accounting for members' level of disordered gambling symptomatology. This hypothesis is based on the results of Hollingshead et al (2021; see Chapter Three) who found that responsible gambling beliefs and behaviors (i.e., positive play; see Wood et al., 2017)

predicted attitudinal loyalty, and that this relation held when controlling for disordered gambling symptomatology. That said, a different role of disordered gambling is possible based on the results of other related work. For instance, Bernhard and colleagues (2006) found that disordered gamblers tended to perceive responsible gambling tools more favourably than non-problem gamblers because they felt it would help them to better monitor their spending. Additionally, disordered gamblers report higher levels of perceived benefits of gambling (i.e., entertainment and enjoyment) relative to non-problem players (Delfabbro et al., 2020)—which may have consequences on the player's level of satisfaction with the casino (i.e., attitudinal loyalty). Thus, we were open to the possibility that disordered gambling symptomatology may account for some variance in the association between willingness to use a responsible gambling tool if rewarded and attitudinal loyalty.

Overview of the Current Research

Across two studies, we examined whether incentivizing responsible gambling tool use may have downstream effects on players' attitudinal loyalty.[3] In Study 1, we examined whether there is a positive relation between willingness to use a limit setting tool if granted rewards points and attitudinal loyalty. We tested this hypothesis among a sample of American casino loyalty program members who had never previously used a responsible gambling tool. We restricted eligibility to those who had not previously used responsible gambling tools because the majority of gamblers (i.e., 90-99%) choose not to use these tools (Forsström et al., 2016; Nelson et al., 2008). As such, it is important to understand how to increase engagement among players who are seemingly resistant to using responsible gambling tools. In Study 2, we sought to replicate and extend the

findings from Study 1 by using an experimental design. Specifically, we randomly assigned participants to read about a loyalty program that incentivized responsible gambling (compared to a control condition in which no mention of incentivization was made). We hypothesized that participants in the incentivization condition would report greater willingness to use the tool and attitudinal loyalty compared to those in the control condition. As well, we tested the hypothesis that willingness to use the limit setting tool would mediate the relation between experimental condition and attitudinal loyalty. We hypothesized that individuals in the experimental condition would be more willing to use the limit setting tool which would in turn, predict higher levels of attitudinal loyalty.

In both studies, we conducted the analyses with and without controlling for disordered gambling severity. We did so because disordered gambling may be positively correlated with both willingness to use a limit setting tool and attitudinal loyalty (Bernhard et al., 2006; Delfabbro et al., 2020) and thus, may be a confounding variable. Therefore, we controlled for disordered gambling symptomatology to assess and eliminate potential confounding effects.

The data and materials used in Studies 1 and 2 are available via the Open Science Framework: https://osf.io/tpbq4/?view_only=2402c493607d4384b4a20de3193acc8d

Study 1

The purpose of Study 1 was to provide initial evidence that willingness to use a responsible gambling tool if granted rewards points is positively associated with attitudinal loyalty. We tested this idea with a sample of American casino loyalty program members who had never previously used a limit setting tool.

Method

Participants and Procedure. Results from an a priori power analysis conducted using Daniel Soper's (2021) power calculator determined that a sample size of 122 participants would be needed to detect a small-to-moderate effect size with 80% power (Appendix N). A total of 587 participants were originally recruited to be part of a study examining the differences between users and non-users of responsible gambling tools. A recruitment notice was posted to Amazon's Mechanical Turk advertising a study on the "Features of Casino Loyalty Programs" (Appendix O). Eligible participants were residents of the United States, who were not currently seeking nor had ever previously sought treatment for their gambling behaviour, were members of an American casino loyalty program and had gambled over $100 in the past 12 months. As well, participants needed to indicate that their casino offers them access to responsible gambling tools through their loyalty program and that they had never previously used the tools.

After granting consent (Appendix P), participants completed a brief eligibility screener. Eligible participants were then asked to complete measures assessing their level of disordered gambling symptomatology, willingness to use responsible gambling tools if granted rewards points, and their attitudinal loyalty. Participants also completed additional measures not analyzed in the present research (e.g., desire to achieve higher tier status, gambling history; Appendix Q). Finally, participants were debriefed (Appendix R) and paid US$0.70 for their participation in the study which took approximately 10 minutes to complete. The study received ethical clearance from a large academic institution.

Of the 587 participants originally recruited, 135 cases were removed because they were determined to be a "bot" or did not provide the name of a real casino loyalty

program (e.g., wrote "Reebok"). Additionally, because we were only interested in non-users of responsible gambling tools, 193 participants who had previously used a responsible gambling tool were removed. Last, 17 participants were removed because they withdrew from the study. The final sample consisted of 242 participants (96 (39.7%) females, 137 (56.6%) males, 2 (0.8%) non-binary, and 7 (2.9%) unreported) with a mean age of 38.73 (SD = 11.88). The mean level of disordered gambling symptomatology across the sample was 4.23 (*SD* = 5.14) indicating a moderate level of disordered gambling.

Measured Variables.

Disordered gambling symptomatology. To assess the presence of disordered gambling symptomatology the Problem Gambling Severity Index (PGSI (Appendix C); Ferris & Wynne, 2001) was employed. The PGSI contains nine items that assess disordered gambling behaviour (e.g., "Have you needed to gamble with larger amounts of money to get the same feeling of excitement?") and consequences of disordered gambling (e.g., "Have you felt guilty about the way you gamble or what happens when you gamble?"). The items were measured on a scale anchored at 0 (*never*) and 3 (*almost always*). Participants' scores were summed to obtain a total score (ranging from 0 to 27). Higher scores indicated a greater number and frequency of symptoms of disordered gambling ($\alpha = .93$).

Willingness to use a limit setting tool if rewarded. Willingness to use a money limit setting tool if granted rewards points was assessed using a five-item ($\alpha = .95$) experimenter created measure. Example items included "I would be more willing to use a limit setting tool if [loyalty program name] were to give me rewards points for doing so"

and "I would be more likely to use a limit setting tool if I received loyalty program reward points for doing so." Response options were anchored at 1 (*strongly disagree*) to 7 (*strongly agree*). A mean score across all five items was calculated and served as a representation of willingness to use a limit setting tool if rewarded. A higher score represented a higher willingness to use the tool.

Attitudinal loyalty. Fourteen items were used to measure attitudinal loyalty toward the casino loyalty program. Two of the items were adapted from Cameron's (2004) ingroup affect subscale of social identity and were used to capture affective loyalty (e.g., "In general, I'm glad to be a member of the [insert loyalty program name] loyalty program"). The other 12 items were experimenter created and were designed to measure other facets of attitudinal loyalty including satisfaction (e.g., "I like the [loyalty program name] loyalty program") and identification (e.g., "Being a member of the [loyalty program name] loyalty program is important to me. Response options ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Results from a factor analysis revealed that Bartlett's test of sphericity was significant, ($\chi^2(91) = 4180.99$, $p < .001$), and the result from Kaiser-Meyer-Olkin test was greater than .80, supporting the use of factor analysis (KMO = .97). Maximum likelihood was used as the method for extracting the factors. The results from both the eigenvalues and scree plot indicated that a single-factor structure best represented that data. Additionally, all 14 items loaded highly onto the factor (i.e., >.76) and were thus all retained. A mean score across all 14 items ($\alpha = .98$) was calculated and used to represent attitudinal loyalty. Higher scores indicated higher levels of attitudinal loyalty toward the casino loyalty program.[1]

Data Analysis

Descriptive statistics and between variable correlations were first calculated (see Table 5). A multiple regression analysis was subsequently conducted using Darlington and Hayes (2017) RLM Macro for conducting regression with robust standard errors. An initial regression was conducted with attitudinal loyalty regressed on willingness to use a limit setting tool if rewarded. A second multiple regression was then conducted with willingness to use a limit setting tool if rewarded as the independent variable, disordered gambling symptomatology as a covariate and attitudinal loyalty as the dependent variable (see Appendix S for assumption checks).

Results

The results revealed that willingness to use a limit setting tool if rewarded accounted for 48% of the variance in attitudinal loyalty, $R^2 = .48$, $f^2 = .92$. For every one unit increase in willingness to use a limit setting tool if rewarded, there was a 0.67 unit increase in attitudinal loyalty, $\beta = 0.67$, $t(235) = 9.88$, $p < .001$, $SE = 0.07$, 95% CI [0.53, 0.80]. This pattern of results did not change when disordered gambling symptomatology was entered into the model as a covariate, $R^2 = .49$, $f^2 = .96$, $p < .001$. Willingness to use a responsible gambling tool if rewarded (controlling for disordered gambling symptomatology) uniquely predicted attitudinal loyalty toward the casino loyalty program, $\beta = 0.66$, $t(234) = 9.66$, $p < .001$, $SE = 0.07$, 95% CI [0.52, 0.79]. For every one unit increase in willingness to use the tool if rewarded, there was a 0.66 unit increase in attitudinal loyalty.

Discussion

The results from Study 1 provided support for our hypothesis that there is a strong positive association between willingness to use a limit setting tool if rewarded and attitudinal loyalty. Individuals who were more willing to use a responsible gambling tool if rewarded for doing so had higher levels of attitudinal loyalty compared to those with lower levels of willingness. This relation remained strong when controlling for player's disordered gambling symptomatology. The correlation between these variables suggests that incentivizing responsible gambling tool use may be one way to encourage both engagement with responsible gambling tools and attitudinal loyalty among gamblers who have never previously used a limit setting tool, regardless of the members' level of disordered gambling.

Results from the Study 1 are in line with other research that has found incentives provide sufficient extrinsic motivation to increase engagement in health-related behaviours among previously resistant individuals (Giles et al., 2014). Moreover, apps that grant loyalty program points for engaging in responsible health behaviours have been found to increase both healthy habits, such as exercise, and increased engagement with the loyalty program (i.e., points redemption and purchases; Mitchell et al., 2017; Mitchell et al., 2018). This is because people find incentives for engaging in health behaviours (such as responsible gambling habits) appealing (see Hoskins et al., 2019 for a review), which may in turn increase their positive perceptions of the company offering such incentives (i.e., attitudinal loyalty). Although previous evidence has indicated that use of responsible gambling tools may be predictive of behavioural loyalty (Auer et al., 2019), the current work indicates that attitudinal loyalty may also be affected.

Although Study 1 provided us with preliminary support for our hypothesis, the study was cross-sectional in nature and thus, causation could not be established. For this reason, it was important to understand whether incentivizing responsible gambling tool use causes changes in both willingness to use the tool and attitudinal loyalty. Study 2 aimed to expand upon the findings of Study 1 by using experimental design to establish causation.

Study 2

The purpose of Study 2 was to replicate and extend the findings from Study 1 by using an experimental design to empirically examine whether incentivizing responsible gambling tool use has downstream consequences on willingness to engage with the tool, as well as attitudinal loyalty. We hypothesized that willingness to use a responsible gambling tool and attitudinal loyalty would be higher among casino loyalty program members who were asked to evaluate a loyalty program that incentivizes responsible gambling (i.e., grants rewards points) compared to members who evaluated a loyalty program that offers a standard responsible gambling program (i.e., does not grant rewards points, control condition). As shown in Study 1, willingness to use responsible gambling tools is associated with heightened attitudinal loyalty. With this result in mind, we also tested whether the hypothesized influence of the experimental manipulation on attitudinal loyalty is mediated by willingness to use responsible gambling tools. Specifically, we hypothesized that participants in the incentivized condition will have higher willingness to use a responsible gambling tool (compared to those in the standard program control condition), and this will in turn heighten attitudinal.

Method

Participants and Procedure. According to Fritz and Mackinnon (2007) a sample size of 148 would be required to detect a small-to-moderate indirect effect using bias-corrected confidence intervals with 80% statistical power. To combat the potential for poor data quality, a total of 424 participants were recruited through Amazon's Mechanical Turk. The recruitment notice invited participants to take part in a study asking "What would you like in a casino loyalty program?" (Appendix O). To be eligible for the study, participants needed to meet the following requirements: 1) currently reside in the United States, 2) were not currently seeking nor had ever previously sought treatment for their gambling behaviour, 3) had spent at least $100 gambling in the past 12 months, 4) were currently a member of a casino loyalty program who offered players access to a responsible gambling limit setting tool, and 5) had never previously used the available limit setting tool.

After first granting consent (Appendix T), participants completed a brief screener to determine their eligibility for the study. Eligible participants completed demographics and questions about the characteristics of their favourite casino loyalty program. Next, participants were randomly assigned to one of two conditions. In the experimental condition, participants read that a popular American casino chain will be introducing a novel responsible gambling program in which members will be granted loyalty program rewards points for setting and adhering to monetary limits. In the control condition, participants read about a standard responsible gambling program that is being introduced (i.e., provides players with access to a limit setting tool but does not grant players rewards points). After reading about the responsible gambling program being introduced, participants completed the measures of interest that assessed their willingness to use the

limit setting tool and their attitudinal loyalty. Last, participants completed measures of disordered gambling symptomatology, as well other measures that were not analyzed in the present research (e.g., financially focused self-concept, reward responsiveness; Appendix U). Participants were then debriefed (Appendix V), informed of the true nature of the study, and asked to provide consent to the use of their data. Participants were compensated US$0.70 for their participation in the study which took approximately 10 minutes to complete. This study received ethical clearance from a research ethics board at a large academic institution.

Of the 424 participants originally recruited, 81 failed a ReCaptcha test and were removed. Additionally, 126 participants were removed because they failed to provide the name of a casino loyalty program. Last, seven participants were removed for failing a comprehension check item designed to assess whether the participant understood the content of the manipulation. Thus, we conducted the subsequent analyses on 208 participants (100 = experimental condition, 108 = control condition). The average age of the sample was 37.18 (*SD* = 11.02) with slightly more males (111, 53.4%) relative to females (95, 45.7%; 2 unreported (1.0%). Additionally, the average level of disordered gambling symptomatology was 5.58 (*SD* = 6.47) indicating that across the sample, there was a moderate level of problem gambling severity. Age, gender, and disordered gambling symptomatology did not differ across experimental conditions (ps > .76).

Measured Variables.

Disordered gambling symptomatology. As in Study 1, disordered gambling symptomatology was measured using the 9-item (α = .94) PGSI (Appendix C; Ferris & Wynn, 2001).

Willingness to use a limit setting tool. A 6-item (α = .87) measure was used to assess the participant's positive perceptions (e.g., "Players will find this tool appealing") and willingness to use the limit setting tool (e.g., "I would use this tool to set a money limit on my gambling"). Response options ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). An average score calculated across all items represented their level of willingness to use the tool. Higher scores indicated higher levels of willingness.

Attitudinal loyalty. Attitudinal loyalty toward the casino offering the new responsible gambling program was measured using the 14-item questionnaire (α = .97) used in Study 1 but was adapted to the current study's context; e.g., "If this casino were to introduce the new limit setting tool, I would be more likely to think of myself as a member of their loyalty program.")

Data Analysis

Independent samples t-tests to examine Mean differences between the conditions on willingness to use the tool and attitudinal loyalty were first examined. Next, a mediation analysis was conducted using Model 4 of the PROCESS Macro with robust standard errors (Hayes, 2017), with experimental condition as the independent variable (coded as 0 = control, 1 = experimental), willingness to use the tool as the mediator and attitudinal loyalty as the dependent variable. A second mediation analysis was then conducted with disordered gambling symptomatology entered as a covariate. Bias corrected confidence intervals were calculated using 5000 bootstrapped samples (see Appendix S for assumption checks).

Results

Results from the independent samples t-test revealed that there were significant mean differences between the conditions on both willingness to use the tool, $M_{Diff} = 0.54$, $SE_{Diff} = 0.15$, $t(206) = 3.66$, $p < .001$, 95% CI [0.25, 0.84], and attitudinal loyalty, $M_{Diff} = 0.72$, $SE_{Diff} = 0.17$, $t(206) = 4.20$, $p < .001$, 95% CI [0.38, 1.06]. Participants in the experimental condition ($M = 5.50$, $SD = 1.01$) had higher levels of willingness to use the tool compared to participants in the control condition ($M = 4.95$, $SD = 1.13$). Similarly, participants who read about the loyalty program with incentives for using responsible gambling tools (i.e., experimental condition) had higher levels of attitudinal loyalty ($M = 5.27$, $SD = 1.23$) compared to participants who read about the standard loyalty program (i.e., control condition; $M = 4.55$, $SD = 1.24$).

Mediation analysis. Results from the mediation analysis revealed that the indirect effect of experimental condition on attitudinal loyalty via willingness to use the limit setting tool (Figure 3) was significant, $B = 0.48$, $SE = 0.13$, 95% CI [0.22, 0.74]. Moreover, after controlling for disordered gambling symptomatology, the indirect effect between experimental condition and attitudinal loyalty via willingness to use the tool remained significant, $B = 0.48$, $SE = 0.13$, 95% CI [0.21, 0.73], providing support for mediation (see Figure 4 for all path coefficients and standard errors). The experimental condition (i.e., incentivized program) was predictive of higher levels of willingness to use the limit setting tool ($B = 0.54$, $SE = 0.15$, 95%CI [0.25, 0.84]), which in turn was positively associated with attitudinal loyalty ($B = 0.88$, $SE = 0.05$, 95%CI [0.78, 0.98]).

Discussion

The results from Study 2 provided causal support for our hypothesis that incentivizing engagement with responsible gambling tools (via offering rewards) may be

a viable path to both increasing members' willingness to use the tools and their positive perceptions of the larger casino brand (i.e., attitudinal loyalty). To this end, participants who were randomly assigned to read about an incentivized responsible gambling program that granted members loyalty program points for setting and adhering to monetary limits were more willing to use the limit setting tool compared to participants who were randomly assigned to read about a standard responsible gambling program (i.e., a program that provides players with access to a limit setting tool but does not grant players rewards points). Moreover, willingness to use the tool mediated the relation between experimental condition and attitudinal loyalty, suggesting that incentivizing responsible gambling may have downstream consequences for attitudinal loyalty via the member's level of willingness to use the tool.

General Discussion

In the current work, we examined whether incentivizing responsible gambling by offering players casino loyalty program points for using a limit setting tool is an effective method for increasing both willingness to use the tool and attitudinal loyalty. In Study 1, we posited that there would be a significant positive association between willingness to use a limit setting tool if rewarded and attitudinal loyalty, and that this result would remain significant even after accounting for disordered gambling symptomatology. The results from Study 1 supported our hypothesis. However, due to the cross-sectional design, causality of the relation between willingness to use a limit setting tool and loyalty could not be established.

In Study 2, we used an experimental design to investigate whether incentivizing responsible gambling would causally influence both willingness to use a limit setting tool

and loyalty. We hypothesized that gamblers who were randomly assigned to read about the introduction of a novel responsible gambling program that grants players reward points for setting and adhering to monetary limits would have higher levels of willingness to use the tool and loyalty relative to gamblers in the control condition (with no mention of incentives). The results provided support for our hypothesis. Moreover, willingness to use the limit setting tool mediated the relation between experimental condition and attitudinal loyalty, such that gamblers in the experimental had higher levels of willingness to use the tool, which in turn predicted higher levels of attitudinal loyalty. These results suggest that incentivizing responsible gambling tool usage may increase attitudinal loyalty via members' willingness to use the tool.

Implications

The results of the current research suggests that incentivizing responsible gambling tool use (i.e., providing rewards points for, among other things, setting a money limit) may increase responsible gambling behaviour as well as attitudinal loyalty. These results align with research from other health behaviour domains that demonstrate that external incentives can drive behaviour change. First, people tend to view the incentivization of healthy behaviours positively and believe that incentives will motivate them to engage in healthy behaviour change (Giles et al., 2014; Hoskins et al., 2019). Second, and perhaps more importantly, incentives provided to facilitate adherence to a health promotion regime have been shown to increase, among other healthy behaviours, exercise, smoking cessation, and vaccinations (Strohacker et al., 2014; Topp et al., 2013; Volpp et al., 2009).

These results also align well with research in other domains that has found that incentivizing people to engage in healthy behavior is associated with heightened motivation to engage in healthy behavior change. For example, people enrolled in a weight loss program reported that incentives helped motivate their behaviour change and they expressed the belief that rewarding healthy weight-loss habits is an acceptable form of motivation (McGill et al., 2018). Based on the current research and related work in incentivizing healthy behavior change, casino operators may effectively promote responsible gambling by providing players incentives for using responsible gambling tools. An easy means to do so is by linking responsible gambling tool use to the accumulation of loyalty program reward points. However, we also suggest casino operators assess the responsible gambling utility of doing so empirically (i.e., assess uptake of responsible gambling tools both before and after the initiation of incentivization as well as the potential impact incentivization has on players using a longitudinal design).

From a marketing perspective, the results of the current research also suggest that incentivizing the use of responsible gambling tools may have downstream consequences for loyalty. Specifically, we found that players expressed greater attitudinal loyalty when incentivizing responsible gambling tool use was presented as a possibility. These results align with research by Auer and colleagues (2019) who found that using a voluntary limit setting tool to set a monetary limit was predictive of behavioural loyalty one year later. We suggest that the observed increase in loyalty is because customers who are willing to use responsible gambling tools likely view the idea of receiving program points for responsible play as innovative and in line with the casino's desire to advance its corporate

social responsibility, which is a known predictor of attitudinal loyalty (Perez & del Bosque, 2015).

To the point, incentivizing responsible gambling may benefit both the public and industry. From the perspective of public health, incentives in the form of loyalty program points may increase rates of engagement with responsible gambling tools. If more people choose to use the tools, there may be fewer players who experience gambling-related harms. Indeed, these tools are effective at helping players to maintain control over their gambling expenditure and prevent financial, social and emotional harms (Currie et al., 2020; Kim et al., 2014; Tanner et al., 2017; Wohl, Gainsbury et al., 2013). When players experience less harm, they are able to enjoy the activity of gambling and have a more satisfactory experience as a result. In this way, industry also benefits from incentivizing responsible gambling because if players are gambling safely, their level of satisfaction with the experience will be increased which is an important component of attitudinal loyalty (Back & Parks, 2003; Bodet, 2008). Attitudinal loyalty is often predictive of behavioural loyalty (i.e., purchases). It is thus possible when players have a safer and more enjoyable gambling experience (through using responsible gambling tools and earning reward points), their satisfaction with the casino will increase and they will feel more comfortable returning to the casino to make additional purchases (i.e., gambling) another day.

As well, granting players reward points for using a limit setting tool may influence the customer's perception of the casino's level of social responsibility. When corporate social responsibility efforts are highly visible, customer's attitudinal loyalty increases (Burke & Logsdon, 1996). If players are able to view the effort the casino is

making to help their patrons to gamble responsibly, such as prompting loyalty program members to set a monetary limit and earn loyalty program points, they may have more positive perceptions of the casino. Additionally, customers who are more open to innovations, tend to view changes in corporate social responsibility policies favourably, which can in turn predict increases in attitudinal loyalty (Perez & del Bosque, 2015).

Caveats

Some limitations of the current work should be noted. First, we focused on attitudinal loyalty as opposed to behavioural loyalty. As such, the current research cannot speak to whether 1) players will actually use responsible gambling tools if incentivized to do so, 2) how it may influence the number of times the player visits the casino offering the incentives, or 3) the amount of money they may spend at the casino. It would behoove researchers in both the field of responsible gambling and casino business operations to examine whether incentivizing engagement with a responsible gambling tool influences player behaviour.

Second, participants in the current research were recruited from MTurk. Recently, Pickering and Blaszczynski (2021) criticized the use of Internet panels and crowdsource websites like Mturk for research on gambling. They argue that although such data sources are convenient and inexpensive they yield biased data due to careless responding on the part of participants and a sample with inflated rates of disordered gambling. However, in a reply to Pickering and Blaszczynski (2021), Russell and colleagues (2021) argued that the noted data quality issues are easily minimized via protections and checks on the data. For example, in the current research, we asked multiple open-ended items to verify the participants were providing quality responses, including asking the participants

to provide the name of a real casino and casino loyalty program. As well, in the experimental Study (i.e., Study 2) we removed all participants who failed the comprehension check. Participants were also removed if they indicated they were not honest in their responses. Russell et al., (2021) also noted that the sample-related bias noted by Pickering and Blaszczynski (e.g., self-selection biases, over representation of participants with gambling problems) also apply to the other methods of recruitment that are common in the field of gambling studies (e.g., random digit dial telephone surveys, industry-recruited and venue-recruited samples, university student samples, and clients in treatment for a gambling disorder). We, like Russell et al. (2021) and Kim and Hodgins (2017), believe that the clear benefits of online samples like Mturk (e.g., ability to obtain large samples of gamblers, the potential to reduce biased responses that accompany stigmatizing conditions) suggest that online convenience samples are not problematic when the necessary checks on the data are made.

Lastly, incentivizing responsible gambling tools may have some pitfalls. Although incentives have been found to be effective at initiating behaviour change, the evidence supporting their influence on sustained, long-term behaviour modification has been mixed (Gneezy et al., 2011; Liu et al., 2014; Strohacker et al., 2014). Programs that are designed to increase intrinsic motivation, while also providing extrinsic reward, are more effective than programs that provide only incentives (Hoskins et al., 2019). Therefore, it may not be sufficient for casinos to solely grant players rewards to encourage long-term engagement in responsible gambling. Casinos may want to consider pairing messaging that highlights the importance of using responsible gambling strategies (such as setting a limit) alongside the granting of reward points. Additionally, it may be

counterproductive to allow players to “cash in” any points earned through using responsible gambling tools for extended time on a machine. It is not sensible to reward players for adhering to a monetary limit with free play. Thus, casinos may want to only allow points earned through engaging in responsible gambling to be redeemed for non-gambling based rewards such as food or hotel discounts. At the end of the day, we call on any operator that wants to incentivize responsible gambling tool use to include research and evaluation at every stage of the process (pre as well as post launch) to assess whether there are no unintended negative consequences stemming from such an initiative.

Conclusion

Despite the large body of empirical research that has demonstrated responsible gambling tools (i.e., tools that help players set a limit on the amount of money they spend gambling in a given session) have tremendous utility in terms of minimizing gambling-related harms (Currie et al., 2019; Kim et al., 2014; Tanner et al., 2017; Wohl, Gainsbury et al., 2013), a very small proportion of players use those tools (1-10%; Forsström et al., 2016; Nelson et al., 2008; Schottler Consulting, 2009). As such, from a public health perspective, it is imperative that the gambling industry finds ways to improve responsible gambling tool use. Across two studies, the current research showed that incentivizing players to use responsible gambling tools may be a vehicle for increasing use and informed decision-making about how much time and money a player spends gambling.

We also showed that incentivizing responsible gambling tool use is associated with increased attitudinal loyalty. As such, the incentivization of responsible gambling tool use may also yield benefits for the casino that offers their players rewards for informed-decision making. Specifically, players who receive rewards for gambling

responsibly are likely to be more satisfied with their gambling experiences and be more trusting of the casino that offers such rewards to their loyalty program members. This is because the casino is seen as socially responsible. Taken together, it would appear that rewarding responsible gambling tool use may be a win-win.

Chapter Five

Concluding Thoughts

Casino loyalty programs have been present in the gambling industry for over two decades (Baynes, 2011). However, despite their long existence, there is only a small body of research examining the benefits and consequences of belonging to these programs. Moreover, the limited research that has been conducted has used a business and marketing lens to investigate the profitability (or losses) associated with the running of these programs (Liu, 2007; Barsky & Tsolov, 2010a; 2010b). Very few studies have applied knowledge about responsible gambling to understand how membership may influence gamblers' attitudes and behaviours. My dissertation aimed to fill this gap.

In Chapter Two, the results from two studies suggest that disordered gambling symptomatology interacts to predict both attitudinal and behavioural loyalty. Specifically, the effect of tier status on attitudinal and behavioural loyalty was strongest among members low in disordered gambling symptomatology. These results indicate that loyalty programs may be the most effective at fostering loyalty among non-problem gamblers. In Chapter Three, we built upon these findings by looking at how positive play (i.e., responsible gambling beliefs and behaviours) relates to attitudinal and behavioural loyalty. In line with our expectations, positive play was positively associated with attitudinal loyalty, and negatively associated with behavioural loyalty. Although industry may be discouraged from fostering positive play among their patrons because it may lead to a decrease in player expenditure (and, by extension profits), positive players are likely sustainable players that can provide high customer-value over a longer term. We

encourage industry to consider strategies for increasing positive play among their customers. In Chapter Four, we examined potential methods for increasing willingness to engage with a responsible gambling tool. Results from two studies indicated that offering players loyalty program rewards points for using a responsible gambling tool to set and adhere to a monetary limit may increase willingness to use the tool and attitudinal loyalty. Thus, incentivizing responsible gambling tool use may benefit both the public and industry.

The evidence from all three chapters supports the value of using a responsible gambling lens to understand gamblers' attitudinal and behavioural loyalty. Examining characteristics associated with both responsible and problematic gambling provides novel insight into understanding for whom loyalty program membership may be beneficial, and for whom membership may harm. However, further research is needed to understand the long-term implications of belonging to a casino loyalty program. It is yet unknown whether these programs foster the development or worsening of disordered gambling over time. Or, whether incentivizing responsible gambling by granting players rewards points for using responsible gambling tools is a feasible and effective solution for increasing player engagement. Additional research conducted in partnership with industry is recommended to evaluate and identify risks associated with casino loyalty program membership.

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Notes

[1] Although results from the factor analysis conducted in Chapter Two, Study 1 revealed a two-factor structure, a one-factor structure applied to the data used in Chapters Three and Four. Thus, a mean score across all 14-items was used to represent attitudinal loyalty (as opposed to two subscales) in Chapters Three and Four.

[2] The Responsible Gambling Dataset used in Study 2 was collected and provided by Ontario Lottery and Gaming (OLG); however, the author(s) take full responsibility for the results and conclusions drawn from the Dataset and acknowledge that they do not necessarily represent the views of the OLG. We would like to thank OLG for providing us with the player account data for Study 2.

[3] In anticipation of a new line of research, a third study was conducted following Study 2 for exploratory purposes. We wanted to assess whether the variables of interest (i.e., willingness to use a responsible gambling tool if rewarded and attitudinal loyalty) were also associated with perceived social responsibility. Results from this exploratory study can be found accessed via the Open Science Framework: https://osf.io/hx9vd/?view_only=4f06708de3274858a053f5436982b911

List of Tables

Table 1. *Reprinted with permission from AK Journals.*

Means and Standard Deviations for all behavioural and attitudinal loyalty measures separated by level of disordered gambling symptomatology and tier status for Chapter Two, Study 1

	Disordered Gambling Symptomatology Level							
	None		Low		Moderate		High	
	Low Tier (*N* = 63)	High Tier (*N* = 11)	Low Tier (*N* = 98)	High Tier (*N* = 15)	Low Tier (*N* = 73)	High Tier (*N* = 17)	Low Tier (*N* = 68)	High Tier (*N* = 43)
Dependent Variables	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
Attitudinal								
Identification	4.31* (1.16)	5.70* (0.71)	4.50* (1.07)	5.66* (0.64)	4.69* (1.13)	5.57* (0.95)	5.09 (1.09)	5.39 (1.09)
Satisfaction	5.19 (1.00)	5.52 (1.23)	5.08 (1.07)	5.68 (1.15)	4.99 (1.11)	5.32 (1.34)	5.00 (1.03)	5.37 (1.09)
Behavioural								
Hours	4.95* (11.58)	33.00* (58.45)	6.86* (10.10)	20.80* (21.57)	8.21 (18.54)	15.35 (13.51)	17.68 (23.06)	20.56 (28.33)
Dollars	229.94 (440.16)	1509.09 (1843.65)	453.78 (834.29)	1300.00 (1330.41)	537.05 (1009.76)	1452.94 (1297.17)	1382.10 (1620.26)	2352.46 (2194.62)
Visits	1.79 (5.49)	5.55 (8.47)	1.96 (2.74)	3.60 (3.78)	1.93 (3.71)	4.47 (4.21)	5.14 (4.55)	11.93 (16.81)

Table 2. *Reprinted with permission from AK Journals.*

Means and standard deviations for all behavioural loyalty measures separated by level of disordered gambling symptomatology and tier status for Chapter Two, Study 2

	Disordered Gambling Symptomatology Level							
	None		Low		Moderate		High	
	Low Tier (*N* = 177)	High Tier (*N* = 53)	Low Tier (*N* = 167)	High Tier (*N* = 101)	Low Tier (*N* = 45)	High Tier (*N* = 50)	Low Tier (*N* = 26)	High Tier (*N* = 24)
Variable	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
Visits	9.96* (7.52)	20.60* (10.88)	11.01* (8.65)	16.49* (10.92)	10.78* (7.66)	19.06* (11.51)	10.58 (9.33)	15.17 (9.07)
Amount Wagered	5451.22* (4976.48)	33445.02* (20185.46)	7170.15* (6413.48)	28388.95* (19011.05)	7746.94* (7528.04)	30141.23* (18812.82)	8375.86* (10115.06)	35649.62* (22467.13)

*Represent significant mean differences between low and high tier status within each category of PGSI ($p < .05$).

Table 3.

Means, standard deviations and between variable correlations for Chapter Three, Study 1

Variable	Scale Range	1.	2.	3.	4.	5.	6.	7.
1. Disordered Gambling Symptomatology	1 – 27	7.22 (6.90)						
2. Gambling Literacy	1 – 7	-.62**	4.98 (1.48)					
3. Personal Responsibility	1 – 7	-.42**	.50**	6.07 (1.06)				
4. Honesty and Control	1 – 7	-.43**	.26**	.59**	5.52 (1.37)			
5. Pre-Commitment	1 – 7	-.43**	.30**	.57**	.80**	5.62 (1.30)		
6. Overall Positive Play	--	-.60**	.65**	.84**	.84**	.84**	--	
7. Attitudinal Loyalty	1 – 7	.21*	-.29**	.10	.21*	.21*	.07	5.05 (1.11)

*$p < .01$, **$p < .001$

Table 4.

Means, standard deviations and between variable correlations for Chapter Three, Study 2

Variable	Scale Range	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Disordered Gambling Symptomatology	1 – 27	3.14 (4.58)								
2. Gambling Literacy	1 – 7	-.17**	6.21 (1.21)							
3. Personal Responsibility	1 – 7	-.24***	.37***	6.41 (1.16)						
4. Honesty and Control	1 – 7	-.50***	.20***	.41***	6.05 (1.47)					
5. Soft money limits	1 – 7	-.12*	.03	.13*	.10	3.75 (2.02)				
6. Hard money limits	1 – 7	-.37***	.13*	.28***	.41***	.17**	4.94 (1.95)			
7. Overall Positive Play	--	-.46***	.57***	.71***	.69***	.47***	.65***	--		
8. Visits to the casino	--	.27***	-.01	-.09	-.19**	-.08	-.23***	-.18**	11.21 (11.31)	
9. Amount wagered (in CAD $100)	--	.23***	.08	-.02	-.14*	-.12	-.26***	-.15*	.22***	13.13 (14.66)

*$p < .05$, **$p < .01$, ***$p < .001$

Table 5.

Means, standard deviations and between variable correlations for Chapter Four, Study 1

Variable	Scale Range	1.	2.	3.
1. Disordered Gambling Symptomatology	1 – 27	4.23 (5.14)		
2. Willingness to Use RG Tools	1 – 7	.05	5.37 (1.39)	
3. Attitudinal Loyalty	1 – 7	.19*	.69**	4.82 (1.35)

*$p < .01$, **$p < .001$

List of Figures

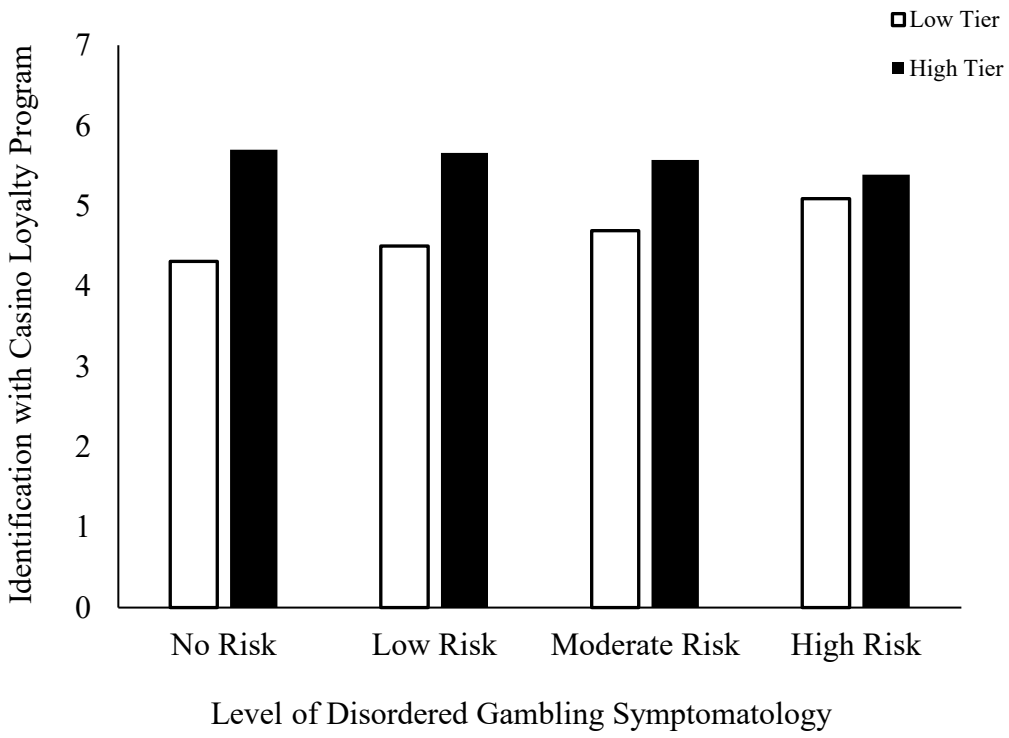


Figure 1. Reprinted with permission from AK Journals. Mean differences in identification with casino loyalty program by tier status and level of disordered gambling symptomatology (Chapter Two, Study 1)

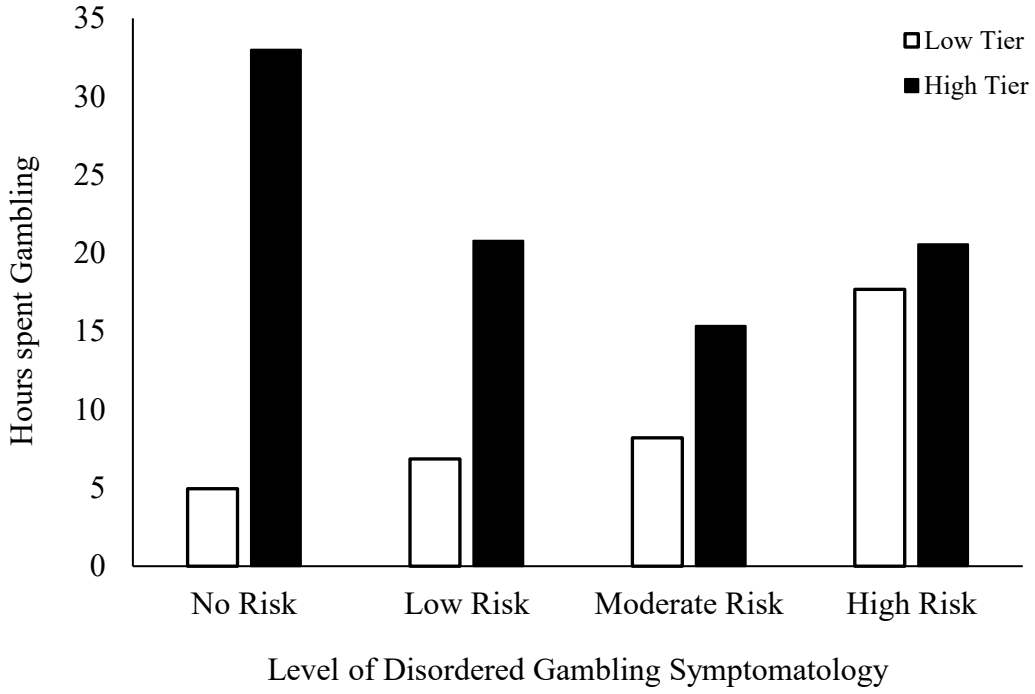


Figure 2. Reprinted with permission from AK Journals. Mean differences in hours spent gambling at loyalty program-affiliated casinos by tier status and level of disordered gambling symptomatology (Chapter Two, Study 1)

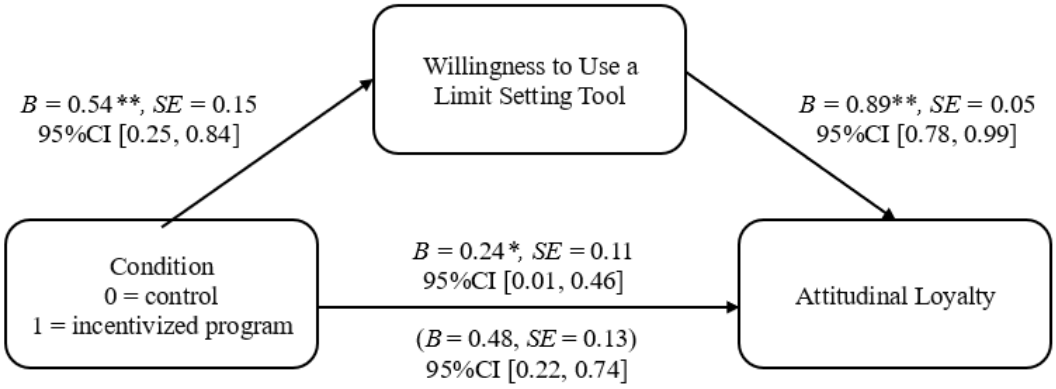


Figure 3. Mediation model with experimental condition as the independent variable, willingness to use the limit setting tool as the mediator and attitudinal loyalty as the outcome variable. The unstandardized coefficients and standard error shown in parentheses reflect the inclusion of the mediator in the equation. (Chapter Four, Study 2) $^{*}p < .05$, $^{**}p < .001$

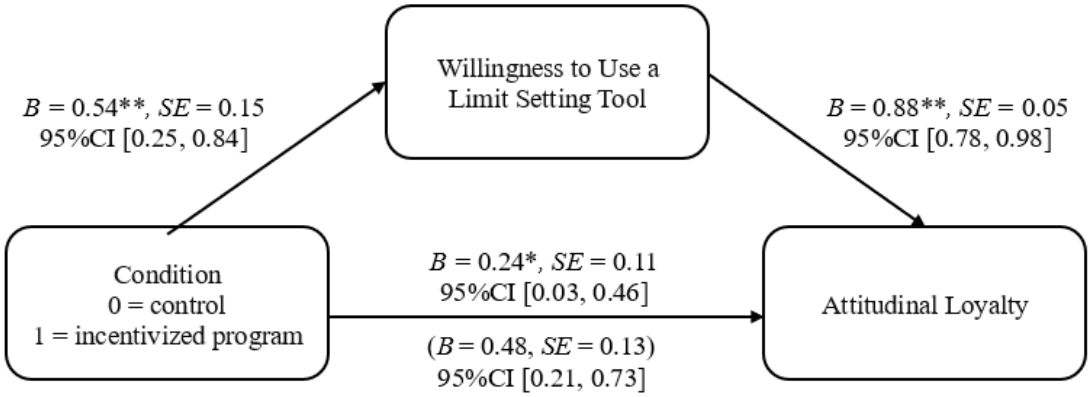
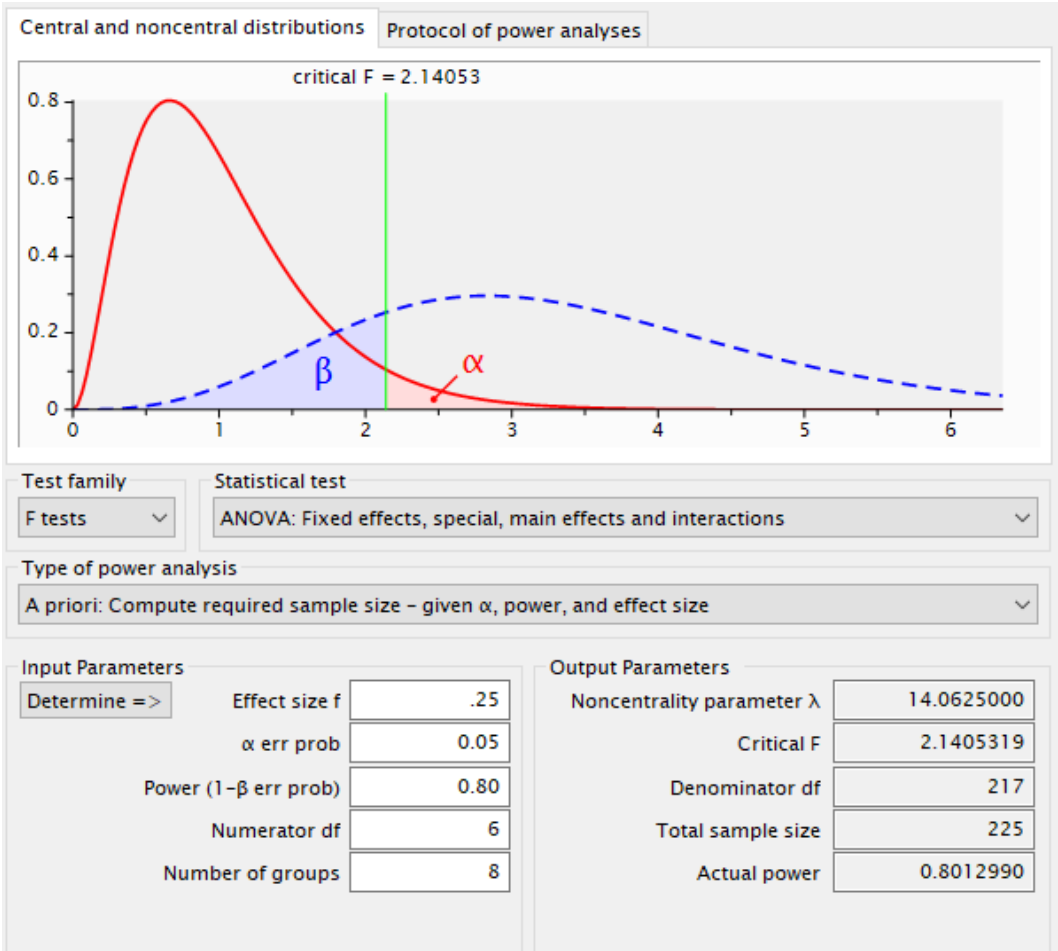


Figure 4. Mediation model with experimental condition as the independent variable, willingness to use the limit setting tool as the mediator and attitudinal loyalty as the outcome variable. Disordered gambling symptomatology was entered as a covariate. The unstandardized coefficients and standard error shown in parentheses reflect the inclusion of the mediator in the equation. (Chapter Four, Study 2) $*p < .05$, $**p < .001$

Appendices

Appendix A: Chapter Two, Study 1 Power Analysis



Appendix B: Chapter Two, Study 1 Measures

Informed Consent

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study. This study has received clearance by the Carleton University Research Ethics Board-B (Reference #105492).

This research is being funded by the Ontario Problem Gambling Research Centre.

Eligibility is dependent, in part, on the following:

1. Must have gambled (e.g. poker, blackjack, roulette, slot machine, etc.) in an online or land-based casino venue in the last 12 months.
2. Be a member of a major casino loyalty program located in the United States.
3. Must not currently be seeking or have previously sought treatment for gambling-related problems.
4. Must be a resident of the United States.

We will ask you to complete a set of questions to determine your eligibility. Only those who are determined to be eligible will be allowed to participate in this study and receive compensation.

Please note that you will be assessed on your eligibility to participate immediately following this consent form.

Present Study: Perceptions of Casino Loyalty Programs

Research Personnel: The following people are involved in this study, and may be contacted at any time if you have questions or concerns:

Michael Wohl (Faculty Investigator, michael.wohl@carleton.ca, (613) 520-2600, ext. 2908), Samantha Hollingshead (PhD student, sam.hollingshead@carleton.ca, (613) 520-2600, ext. 6312), or Amanda Feige (Other research personnel, Amanda.feige@carleton.ca, (613) 520-2600, ext. 2683).

Should you have any ethical concerns with the study, please contact Dr. Bernadette Campbell, Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085 or by email: ethics@carleton.ca). For all other questions about the study, please contact the researchers.

Purpose: The purpose of this study is to assess casino loyalty program members' gambling attitudes and behaviors.

Task Requirements: In this study, we will ask you to complete several questionnaires regarding your background (e.g., demographics), your gambling habits (i.e., how frequently you gamble) as well as your perceptions and attitudes towards casino loyalty programs.

Benefits/Compensation: We are offering eligible participants who complete the study US $1.00 for participating.

Duration and Locale: The survey will be administered online and should take approximately 20 minutes to complete. Be assured that your name will not be associated in any way with the research findings.

Potential Risk/Discomfort: We can anticipate no physical discomfort to you as a result of your participation in this study. If you do experience any distress or discomfort when thinking about your gambling behavior, you may wish to contact one of the helplines nearest to your location. A list of helplines by town and state can be found at http://www.ncpgambling.org/. A copy of this information will be provided to you in the debriefing sheet following the questionnaires.

Right to withdraw: Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw without penalty. If you withdraw, you have the right to request that your data be deleted. If you would like to withdraw your data, please email one of the researchers and provide them with the code given to you on your debriefing. The researcher will then delete any record of your participation in the study as well, as the email you sent. If you would like to withdraw from the study and NOT have your data deleted, simply click on the "Withdraw" button located at the bottom of each page of the survey.

Anonymity/Confidentiality: The data collected in this experiment are confidential. IP addresses and geo-location (i.e., longitude and latitude) will be recorded. Immediately upon project completion (December 2018), this information will be permanently deleted. The confidential data are made available only to the researchers associated with this project.

We collect data through an online server (Qualtrics). All data on the Qualtrics server is encrypted and protected using multiple layers of security (e.g., encrypted websites and password protected storage). For more information about the security of data on Qualtrics, please see the Qualtrics security and privacy policy, which can be found at the following link: http://www.qualtrics.com/securitystatement/

Your data will be stored and protected by Qualtrics servers located in Toronto, but may be disclosed via a court order or data breach. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study you acknowledge this.

Data Storing and Sharing: The data will be stored on the computers of the researchers and research assistants involved with this project. A dataset containing no personal information (with IP addresses and geo-location deleted) will be stored electronically and kept indefinitely. Additionally, we will upload this anonymized data set to an online data repository called Open Science Framework (http://osf.io/) for research and teaching purposes. Aggregate data may also be used in publications, presentations, and future research. Anonymized data may be shared with trusted colleagues.

Do you agree to participate in this study?

□ Yes.

□ No.

Analyzed Measures

Demographics

1. Age: _____

2. Gender: Male/Female/other

Loyalty Program Tier Status

Please indicate what tier (i.e., level) of the Total Rewards [Marquee Rewards] loyalty program you are currently on.

If Total Rewards:
a) Gold (entry tier)
b) Platinum (2nd tier)
c) Diamond (3rd tier)
d) Seven stars (highest tier)

If Marquee Rewards
a) Marquee/Choice (entry tier)
b) Celebrity/advantage (2nd tier)
c) Producer/Preferred (3rd tier)
d) Executive Producer/Elite (4th tier)
e) Icon/Owners club (highest tier)

Attitudinal Loyalty

When answering the following items, please keep in mind the Total Rewards [Marquee Rewards] loyalty program.

Indicate the extent to which you agree or disagree with the following statements.

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

Identification Subscale Items

1. I think of myself as a member of the Total Rewards [Marquee Rewards] loyalty program.
2. Being a member of the Total Rewards [Marquee Rewards] loyalty program is important to me.
3. I value being a member of the Total Rewards [Marquee Rewards] loyalty program.
4. Generally, I feel good when I think about myself as a Total Rewards [Marquee Rewards] member.
5. In general, I'm glad to be a Total Rewards [Marquee Rewards] member.
6. I consider myself to be loyal to the Marquee Rewards [Total Rewards] program.
7. I am invested in the Marquee Rewards [Total Rewards] loyalty program.

Satisfaction Subscale Items

1. In general, I consider Marquee Rewards [Total Rewards] to be a good loyalty program.
2. I trust that next year the Marquee Rewards [Total Rewards] loyalty program will be of equal or better value.
3. In general, I am satisfied with the Marquee Rewards [Total Rewards] loyalty program.
4. I trust that I will get my money's worth out of being a Marquee Rewards [Total Rewards] loyalty program member.
5. I intend to continue bring a Marquee Rewards [Total Rewards] loyalty program member in the future.
6. The Marquee Rewards [Total Rewards] program has met or exceeded my expectations.
7. I trust that I will always receive the correct amount of points and/or rewards from the Marquee Rewards [Total Rewards] program.
8. I like the Marquee Rewards [Total Rewards] loyalty program.

Items not included in final factor structure

1. I feel strong ties to the Marquee Rewards [Total Rewards] loyalty program.
2. I don't feel good about being a Marquee Rewards [Total Rewards] member.
3. I often regret that I am a Marquee Rewards [Total Rewards] member.
4. I would choose to be a Marquee Rewards [Total Rewards] loyalty program member over all other casino loyalty program.

Perceived Behavioural Loyalty

When answering the following questions, please keep in mind the casino you visit most frequently that is affiliated with the Total Rewards [Marquee Rewards] program.

In the past month,

1. How many times did you visit this casino?
2. Approximately how many hours did you spend at this casino?
3. How much money did you spend gambling at this casino?

Exploratory Measures

Involvement and Movement in Casino Loyalty Program

Please keep in mind the Total Rewards [Marquee Rewards] loyalty program when completing the remainder of the survey.

[If answer b to either 1 or 1b, go to 1c]

1. Do you use your Total Rewards [Marquee Rewards] loyalty program when gambling online only, at the casino only, or both?
   a) Online
   b) At the casino
   c) Both

[If they answer c, go to 1d]

1b. What proportion do you gamble online vs at the casino? (Please respond on the sliding scale)

Gambling online: 0% ---------- 100%
Gambling at the casino: 0% ---------- 100%

Total must equal 100%

2b. Have you ever fallen from a higher to a lower tier level?
   a) Yes
   b) No

2b.1. Please use the scale below to answer the following items:

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

Moving down a tier made me feel:

Disappointed
Sad
Upset with myself
Upset with my loyalty program

2c. I worry about losing my tier status (and the associated benefits).

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

2d. I don't want to fall to a lower tier.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

2e. Concern that I may lose my current tier status drives me to spend more money gambling (to help me maintain my current tier status or get a higher tier).

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

2f. Have you ever been at a higher tier?

a) Yes
b) No

[If they respond a, go to 2g, 2h]

2g. I miss having a higher tier status (and the associated benefits).

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

2h. One reason I gamble as much as I do is to reclaim the higher tier status that I lost.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

3. My tier status matters to me.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

4. I have a clear idea of how close I am to moving up a tier level for next year.

Not a clear idea ----------Very clear idea

5. I have a clear idea of how close I am to maintaining my tier status for next year.

Not a clear idea ---------- Very clear idea

6. I am confident I already know which tier level I will be on next year.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

7. Are you a member of any other casino loyalty programs?
a) Yes
b) No

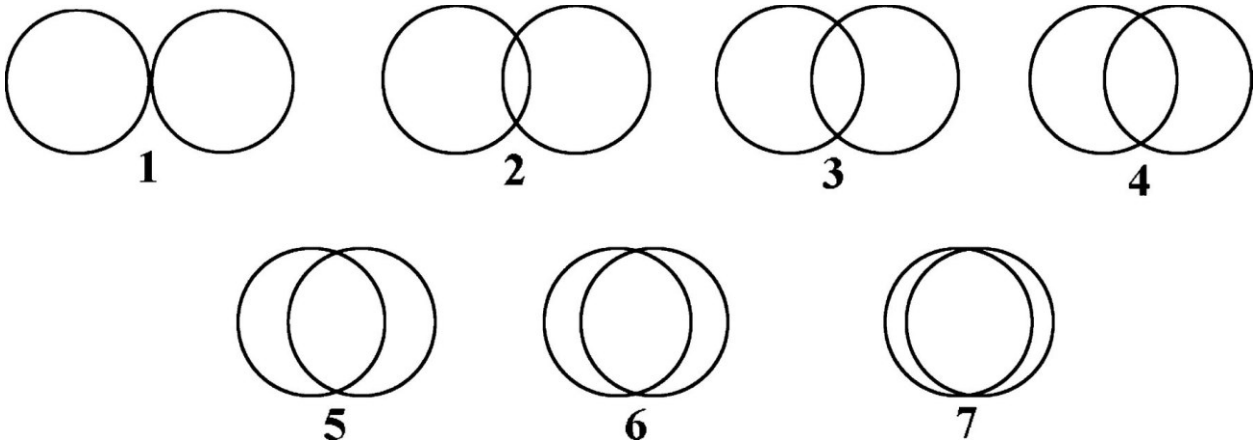
[If they respond a go to 4b]

7b. How often do you gamble at casinos affiliated with the Total rewards [Marquee rewards] compared to casinos that use a different casino loyalty program?

Casinos affiliated with Total Rewards [Marquee Rewards]: 0% ----------100%
Casinos that use a different casino loyalty program: 0% ---------- 100%

Overall total must equal 100%

In the diagrams below, one circle represents *you* and the other circle represents the Total Rewards [Marquee Rewards] program. The more the circles overlap, the more you identify with the rewards program. Please select the option that best describes your relationship with the Total Rewards [Marquee Rewards] Program.



Casino Characteristics

1. Is the casino you visit most often affiliated with the Total Rewards [Marquee Rewards] program?
    a. Yes
    b. No

2. What is the name of the casino you visit most often that is affiliated with the Total Rewards [Marquee Rewards] program?

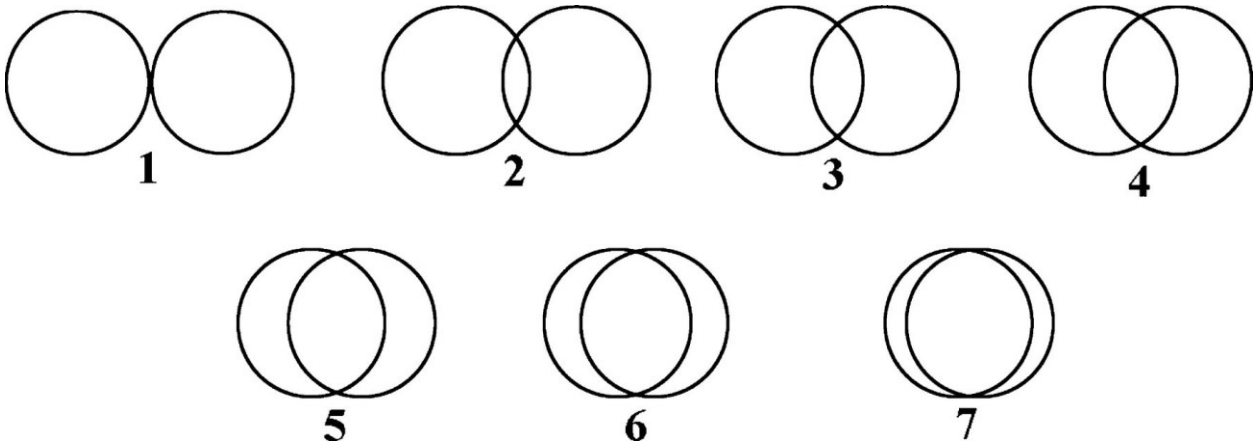
    _____

3. On the slider below, tell us the amount time/money you spend gambling at your most frequented casino compared to other casinos that use Total rewards [Marquee rewards] program?

My most frequented Casino that uses Total Rewards [Marquee Rewards]: 0% ---------- 100%
Other casinos that use Total Rewards [Marquee Rewards]: 0% ---------- 100%

Overall total must equal 100%

4. Please select the option that best describes how you view the Total Rewards [Marquee Rewards] loyalty program in relation to the casino you most frequently visit that is affiliated with this rewards program. In the diagrams below, the more the circles overlap, the more you view the Total Rewards [Marquee Rewards] program and the casino you most frequently visit as being one and the same.



5. On the slider below, tell us the amount time/money do you spend gambling at your most frequented casino compared to casinos that DO NOT use the Total Rewards [Marquee Rewards] program?

My most frequented Casino that uses Total Rewards [Marquee Rewards]: 0% ---------- 100%
Other casinos that DO NOT use Total Rewards [Marquee Rewards]: 0% ---------- 100%

Overall total must equal 100%

6. How many casinos with a different loyalty program are nearby to where you live? Please indicate on the slider below.

No other casinos with a different loyalty program ----------A lot of other casinos with a different loyalty program.

Identification with Casino

When answering the following questions, please keep in mind the **casino you visit most frequently that is affiliated with the Total Rewards [Marquee Rewards] program.**

Please write the name of the casino that you visit most frequently below:

_____

1. I think of myself as a patron of this casino.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

2. I feel strong ties to this casino.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

3. Being a patron of this casino is important to me.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

4. I value being a patron to this casino.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

5. In general, I'm glad to be a patron to this casino.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

6. Generally, I feel good when I think about myself as a patron to this casino.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

7. I often regret that I am a patron to this casino.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

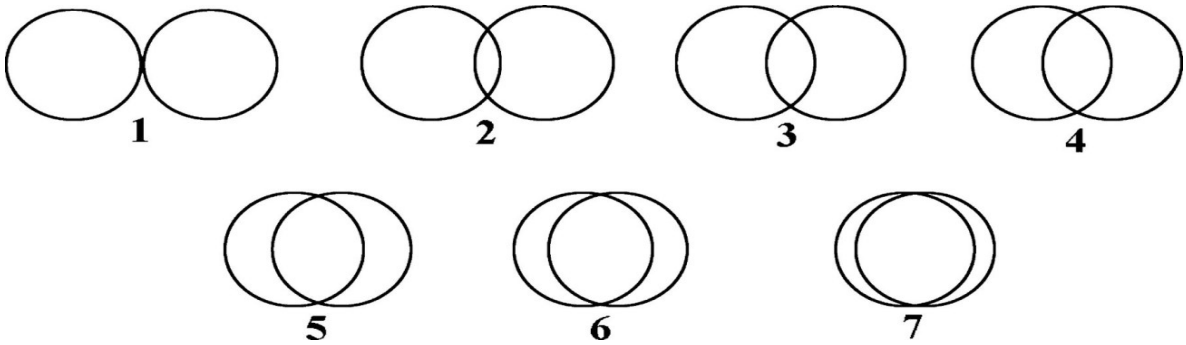
8. I don't feel good about being a patron to this casino

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

9. Just thinking about the fact that I am a patron to this casino sometimes gives me bad feelings.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

10. In the diagrams below, one circle represents *you* and the other circle represents **the casino you frequent that uses the Total Rewards [Marquee Rewards] program.** The more the circles overlap, the more you identify with this casino. Please select the option that best describes your relationship with this casino.



Attitudinal loyalty towards the casino

When answering the following questions, please keep in mind the casino you visit most frequently that is affiliated with the Total Rewards [Marquee Rewards] program.

Indicate the extent to which you agree or disagree with the following statements.

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

Satisfaction

1. In general, I consider this to be an enjoyable casino.
2. In general, I am satisfied with my experiences at this casino.
3. This casino meets or exceeds my expectations.
4. I like this casino.

Trust

1. I trust that my visits to this casino will continue to be of equal or better quality.
2. I trust that I will get my money's worth when I gamble at this casino.
3. I trust that I will always receive the correct payout amount at this casino.

Commitment

1. I consider myself to be loyal to this casino.
2. I intend to continue to visit this casino in the future.
3. I am invested in this casino.
4. The cost of changing to a different casino would be too great for me.
5. I would choose to visit this casino over all other casinos.

Switching cost scenario

Suppose the casino you frequent most decides to switch from using Total Rewards [Marquee Rewards] to a different loyalty program. However, there is another casino (on the opposite side of town) that starts using the Total Rewards [Marquee Rewards] program. On the sliding scale below, please tell us what you would be most likely to do?

Enroll in the new loyalty program (and stay at the casino I most frequent)----------Start playing at other casino (so I can keep using Total Rewards [Marquee Rewards])

Demographics

3. What is your best estimate of your total HOUSEHOLD income last year? [Please include income from all sources such as savings, pensions, rent, and employment insurances, as well as wages]
    a. Less than $10,000
    b. Between $10,000 and $14,999
    c. Between $15,000 and $24,999
    d. Between $25,000 and $34,999
    e. Between $35,000 and $49,999
    f. Between $50,000 and $74,999
    g. Between $75,000 and $99,999
    h. Between $100,000 and $149,999
    i. Between $150,000 and $199,999
    j. Over $200,000 or more

4. What is your best estimate of your total PERSONAL income last year? [Please include income from all sources such as savings, pensions, rent, and employment insurances, as well as wages]
    a. Less than $10,000
    b. Between $10,000 and $14,999
    c. Between $15,000 and $24,999
    d. Between $25,000 and $34,999
    e. Between $35,000 and $49,999
    f. Between $50,000 and $74,999
    g. Between $75,000 and $99,999
    h. Between $100,000 and $149,999
    i. Between $150,000 and $199,999
    j. Over $200,000 or more

5. In the past 12 months, how often did you bet or spend money on gambling?
    1. Daily
    2. 2 to 6 times/week
    3. About once/week
    4. 2-3 times/month
    5. About once/month
    6. Between 6-11 times/year
    7. Between 1-5 times/year

6. Select the game you MOST prefer to play:
   a. Slots
   b. Electronic gambling machines
   c. Poker
   d. Black Jack
   e. Roulette
   f. Pro-line or sports betting
   g. Lottery
   h. Scratch Tickets
   i. Other (please specify) _____

7. For how many years (or months) have you gambled? (Please answer in years, then months)
   _____

8. Where do you typically gamble (e.g., home, internet, casino, VLT, etc.)?
   _____

9. In a given gambling session, how much money do you need to lose to walk away? $
   _____

10. Do you think that you have a gambling problem?

    YES NO

Appendix C: Problem Gambling Severity Index

In the past 12 months how often …

1. Have you bet more than you could really afford to lose?

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

2. Have you needed to gamble with larger amounts of money to get the same feeling of excitement?

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

3. Have you gone back another to try and win back the money you lost?

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

4. Have you borrowed money or sold anything to get money to gamble?

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

5. Have you felt that you might have a problem with gambling?

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

6. Have you felt that gambling has caused you any health problems, including stress or anxiety?

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

7. Have people criticized your betting or told you that you have a gambling problem, whether or not you thought it is true?

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

8. Have you felt your gambling has caused financial problems for you or your household?

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

9. Have you felt guilty about the way you gamble or what happens when you gamble?

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

Appendix D: Chapter Two, Study 1 Factor Analysis Results

As a first step, the factor structure of 19-items designed to measure attitudinal loyalty was analyzed using the best practices for Exploratory Factor Analysis as suggested by Carpenter (2018). The 19 items were comprised of 15 experimenter-created items measuring attitudinal loyalty as well as the four item ingroup affect subscale of social identity adapted from Cameron (2004). Results from the Bartlett's test of sphericity were significant indicating that the 19 items were significantly correlated ($\chi^2(171) = 4919.05$, $p < .001$). Additionally, the result from the Kaiser-Meyer-Olkin test was greater than .80 indicating that the data were well suited for factor analysis (KMO = .94). The common factor analysis method of maximum likelihood was used. Moreover, we anticipated that factors measuring attitudinal loyalty would likely be correlated, for this reason, an oblique rotation (i.e., Promax) was used to identify our factors.

An examination of both the eigenvalues and a scree plot suggested that a three-factor structure best represented the data. However, only two reverse worded items adapted from Cameron's ingroup affect subscale of social identity (i.e., "I don't feel good about being a Total Rewards [Marquee Rewards] member" and "I often regret that I am Total Rewards [Marquee Rewards] member) significantly loaded onto a third factor. Given that these items were the only two items to load onto the third factor and did not load significantly onto any other factor, they were removed. Moreover, items were retained if their factor loadings were greater than .50. Three of the experimenter-created items did not significantly load onto any factor and were also removed. The factor analysis was rerun with the remaining 14 items. The results indicated that a two-factor structure best represented the data.

All items had factor loadings greater than .50 on one factor and less than .26 on the second factor, thus, all items were considered to load onto only one factor. Results from the pattern matrix (see Table A) indicated that seven items loaded onto Factor 1 and seven items loaded on Factor 2. The first factor, labeled identification, was comprised of items ($\alpha = .91$) that measured identification with the casino loyalty program (e.g., "I think of myself as a member of the Total Rewards [Marquee Rewards] program."). The second factor, labeled satisfaction, included items ($\alpha = .93$) that measured satisfaction and trust in the casino loyalty program (e.g., "In general, I am satisfied with the Total Rewards [Marquee Rewards] program"). The two subscales were significantly correlated ($r = .68$, $p < .001$).

Table A. *Labels and factor loadings for all items included the measure of attitudinal loyalty in Chapter 2, Study 1.*

Item	Identification	Satisfaction
I think of myself as a member of the [loyalty program name] loyalty program.	**.56**	.17
Being a member of the [loyalty program name] is important to me.	**.98**	-.24
I value being a member of the [loyalty program name] loyalty program.	**.86**	-.06
Generally, I feel good when I think about myself as a [loyalty program name] member.	**.82**	-.02
In general, I'm glad to be a [loyalty program name] member.	**.64**	.20
I consider myself to be loyal to the [loyalty program name] program.	**.58**	.26
I am invested in the [loyalty program name] loyalty program.	**.59**	.24
In general, I consider [loyalty program name] to be a good loyalty program.	.06	**.85**
I trust that next year, the [loyalty program name] program will be of equal or better value.	.08	**.72**
In general, I am satisfied with the [loyalty program name] loyalty program.	.05	**.84**
I trust that I will get my money's worth out of being a [loyalty program name] member.	.12	**.67**
The [loyalty program name] program has met or exceeded my expectations.	.10	**.69**
I trust that I will always receive the correct amount of points and/or rewards from the [loyalty program name] program.	-.26	**.91**
I like the [loyalty program name] loyalty program.	.06	**.80**

Appendix E: Chapter Two Assumption Checks

Study 1

Prior to conducting the analyses, the necessary assumptions were checked. The dependent variables were both continuous, and the independent variables involved two or more categorial groups, supporting the use of Multivariate Analysis of Variances (MANOVA). The data points were not collected with any known temporal link, supporting the independence of observations assumption. When PGSI category, tier status and their interaction term were entered as predictors of attitudinal loyalty (as measured by identification and satisfaction with the casino loyalty program), there were 4 outliers identified. Similarly, when behavioural loyalty (as measured by self-reported hours spent gambling, visits to the casino, and amount wagered) was used as the dependent measure, 20 outliers were noted. However, when both analyses were conducted with and without the outliers, the pattern of results remained the same. Thus, all outliers were retained.

Using Daryanto's (n. d.) macro for testing multivariate normality, results from Small's test revealed the data were not multivariate normal ($p < .001$). Results from Box's M (Box's M = 49.90, $p = .001$) revealed that the homogeneity of variance assumption was violated (i.e., the groups had heterogenous variance). Therefore, Pillai's Trace was used for interpreting the results, which is robust against violations of normality and homogeneity. Moreover, to correct for the skew, the data were square root transformed. The pattern of results remained unchanged after square root transformation. Thus, for interpretability, the untransformed results were used. Scatterplots revealed that there was a linear relationship between the dependent variables for every combination of

independent variables (see Figures A and B). Last, the dependent measures were correlated at $r = .67$, $p < .001$, supporting the use of MANOVA.

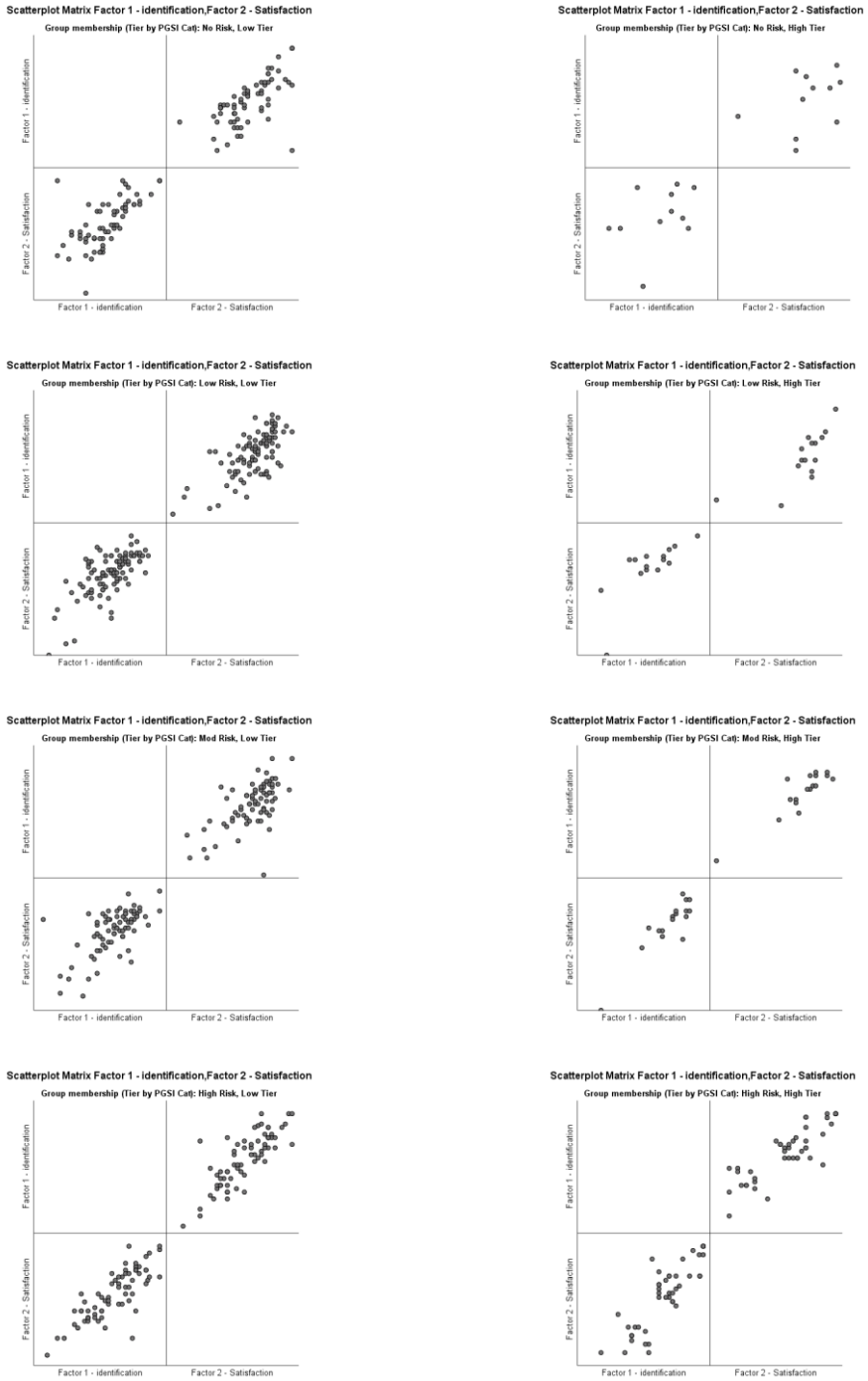


Figure A. Scatter plots of the relation between the two dependent measures of attitudinal loyalty (i.e., identification and satisfaction) for every combination of tier status and PGSI category.

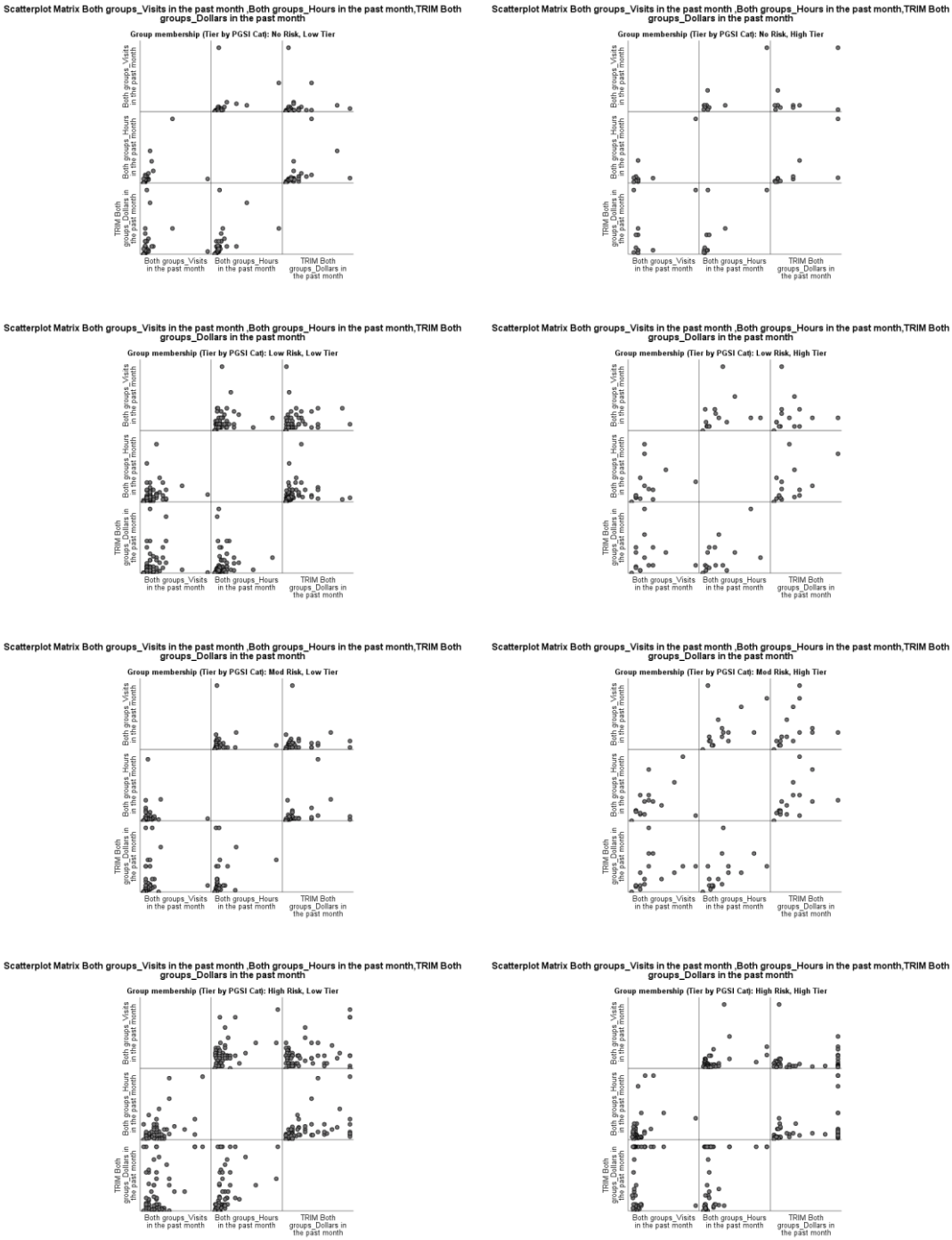


Figure B. Scatter plots of the relation between the three dependent measures of behavioural loyalty (i.e., hours, visits and amount wagered at the casino) for every combination of tier status and PGSI category.

Study 2

As in study 1, the assumptions of MANOVA were checked to determine the appropriateness of the analysis. Both dependent variables were continuous in nature and the independent variables in volved two or more categorical groups. Moreover, each data point was collected independently, supporting the assumption of the independence of observations. There were 14 outlier cases identified (both univariate and multivariate). When the analysis was conducted with the outlier cases removed, the pattern of results remained the same, thus the outliers were retained. Using Daryanto's macro for testing multivariate normality, results from Small's test revealed the data were not multivariate normal ($p < .001$). Results from Box's M (Box's M = 453.14, $p < .001$) revealed that the homogeneity of variance assumption was violated (i.e., the groups had heterogenous variance). Therefore, Pillai's Trace was used for interpreting the results, which is robust against violations of normality and homogeneity. Moreover, to correct for the skew, the data were square root transformed. The pattern of results remained unchanged after square root transformation. Thus, for interpretability, the untransformed results were used. Scatterplots revealed that there was a linear relationship between the dependent variables for every combination of independent variables (see Figure C). Last, the dependent measures were correlated at $r = .52$, $p < .001$, supporting the use of MANOVA.

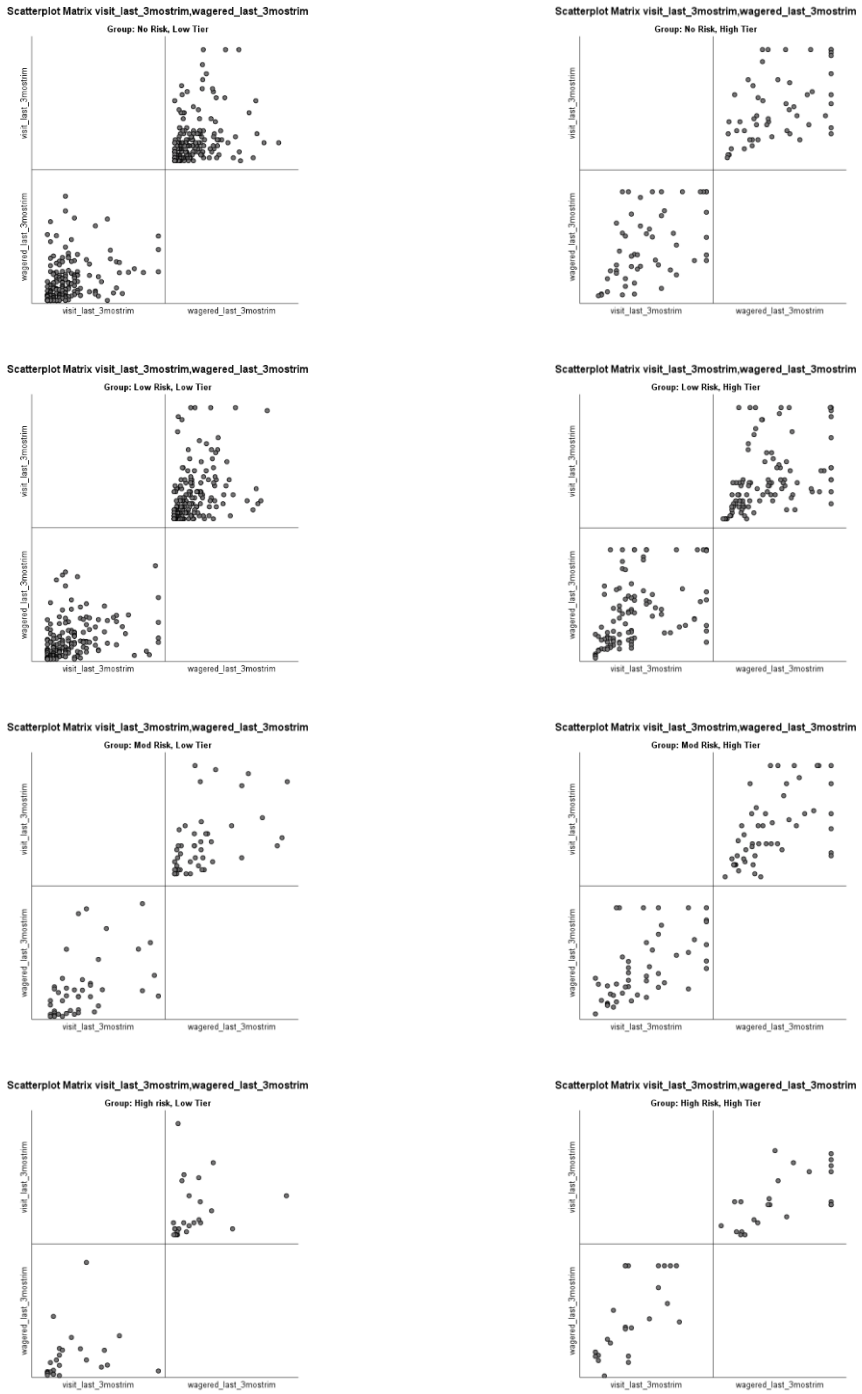


Figure C. Scatter plots of the relation between the dependent measures of behavioural loyalty (i.e., visits and amount wagered at the casino) for every combination of tier status and PGSI category.

Appendix F: Supplemental Results: Multivariate and Univariate Main Effects

STUDY 1

Results

Attitudinal loyalty. There was a significant multivariate effect of loyalty program tier status, Pillai's Trace = .11, $F(2, 381) = 23.48$, $p < .001$, $\eta^2 = .11$, but not for level of disordered gambling symptomatology, Pillai's Trace = .03, $F(6, 764) = 1.80$, $p = .10$, $\eta^2 = .01$. Follow-up univariate analyses further examining the main effect of tier status revealed that tier status had a significant effect on both identification with the loyalty program, $F(1, 382) = 40.88$, $p < .001$, $\eta^2 = .10$ and satisfaction with the loyalty program, $F(1, 382) = 7.59$, $p = .006$, $\eta^2 = .02$. Members in higher tiers had higher levels of identification and satisfaction with the loyalty program compared to members in lower tiers, ps $\leq .006$.

Behavioural loyalty. Results revealed a significant multivariate effect of tier status, Pillai's Trace = .11, $F(3, 378) = 15.20$, $p < .001$, $\eta^2 = .11$. Follow-up ANOVAs were then conducted separately for each dependent variable. The results indicated that the main effect of tier status was significant for hours gambled, $F(1, 380) = 22.43$, $p < .001$, $\eta^2 = .06$, dollars gambled, $F(1, 380) = 33.71$, $p < .001$, $\eta^2 = .08$ and visits to the casino, $F(1, 380) = 15.53$, $p < .001$, $\eta^2 = .04$. Those in higher tiers spent more hours gambling, gambled more money, and visited the casinos more often than did those in lower tiers.

There was also a significant multivariate effect of disordered gambling symptomatology (Pillai's Trace = .16, $F(9, 1140) = 7.23$, $p < .001$, $\eta^2 = .05$). Univariate analyses revealed that the main effect of disordered gambling symptomatology was significant for dollars spent gambling, $F(3, 380) = 11.34$, $p < .001$, $\eta^2 = .08$, and visits to

the casino, $F(3, 380) = 12.42$, $p < .001$, $\eta^2 = .09$, but not hours spent gambling, $F(3, 380) = 2.07$, $p = .10$, $\eta^2 = .02$. Tukey HSD post hoc analyses demonstrated that members high in disordered gambling symptomatology self-reported spending more money gambling and visiting the casino more frequently than members with no-, low-, or moderate-levels of disordered gambling symptoms, *p*'s < .001.

STUDY 2

Results

At the multivariate level there was a significant main effect of tier status, Pillai's Trace = .44, $F(2, 634) = 247.83$, $p < .001$, $\eta^2 = .44$, but not for disordered gambling symptomatology, Pillai's Trace = .01, $F(6, 1270) = 1.40$, $p = .21$, $\eta^2 = .007$. Results from follow-up ANOVAs for each dependent variable indicated that the main effect of tier status was significant for both visits, $F(1, 635) = 90.18$, $p < .001$, $\eta^2 = .12$, and amount wagered, $F(1, 635) = 496.31$, $p < .001$, $\eta^2 = .44$. Members in higher tiers visited the casino more frequently and wagered more compared to members in lower tiers.

Appendix G: Chapter Three, Study 1 Power Analysis

A-priori Sample Size Calculator for Multiple Regression

This calculator will tell you the minimum required sample size for a multiple regression study, given the desired probability level, the number of predictors in the model, the anticipated effect size, and the desired statistical power level.

Please enter the necessary parameter values, and then click 'Calculate'.

Anticipated effect size (f^2):	0.08
Desired statistical power level:	0.8
Number of predictors:	5
Probability level:	0.05

Calculate!

Minimum required sample size: **165**

Appendix H: Chapter Three, Study 1 Recruitment Notice

Perceptions of Casino Loyalty Programs (12 mins/$0.80)

A "**casino loyalty program"** is a rewards program offered by a casino that allows its members access to special deals, promotions, exclusive features (such as new games), or free merchandise (such as free spins, cash back, or giveaways).
For this study, we are seeking members of casino loyalty programs located in the United States. If you do not gamble or are not a member of a major casino loyalty program in the United States, please do not participate in this study.

In this study, we will ask you to complete several questionnaires regarding your background (e.g., demographics), the characteristics of the casino loyalty programs for which you are a member (e.g., what are the features of your casino loyalty program), your gambling behaviors and your gambling attitudes (e.g., how often you gamble).

Your participation as well as your responses will be strictly confidential. Only researchers associated with the project will know you participated in the study and no one will know how you responded to the questions asked.

Eligibility is dependent, in part, on the following:

1. Must be a member of a casino loyalty program located in the United States
2. Must be a resident of the United States
3. Must have gambled in a land-based casino during the previous 12 months
4. Must not currently be seeking or have previously sought treatment for gambling-related problems.

We will ask you to complete a set of questions to determine your further eligibility. Only those who are determined to be eligible will be allowed to participate in this study and receive compensation.

Please note that you will be assessed on your eligibility to participate immediately following the informed consent form.

This study takes about 12 minutes, and upon completion you will receive **US $0.80** for your participation.

This study is being conducted by the Carleton University Gambling Lab.

Research Personnel: Samantha Hollingshead (samhollingshead@cmail.carleton.ca), Dr. Michael Wohl (Michael.wohl@carleton.ca), and Mackenzie Dowson (mackenzie.dowson@carleton.ca).

This study has received clearance by the Carleton University Research Ethics Board-B (Reference #105492).

Appendix I: Chapter Three, Study 1 Informed Consent

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study. This study has received clearance by the Carleton University Research Ethics Board-B (Reference #105492).

Eligibility is dependent, in part, on the following:

1. Must be a member of a casino loyalty program located in the United States
2. Must be a resident of the United States
3. Must have gambled in a land-based casino during the previous 12 months
4. Must not currently be seeking or have previously sought treatment for gambling-related problems.

We will ask you to complete a set of questions to determine your eligibility. Only those who are determined to be eligible will be allowed to participate in this study and receive compensation.

Please note that you will be assessed on your eligibility to participate immediately following the informed consent form.

Present Study: Perceptions of Casino Loyalty Programs

Research Personnel: The following people are involved in this study, and may be contacted at any time if you have questions or concerns:

Michael Wohl (Faculty Investigator, michael.wohl@carleton.ca, Samantha Hollingshead (PhD candidate, sam.hollingshead@carleton.ca, or Mackenzie Dowson (Other research personnel, Mackenzie.dowson@carleton.ca).

Should you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone: 6135202600 ext. 4085 or by email: ethics@carleton.ca). For all other questions about the study, please contact the researchers.

Purpose: The purpose of this study is to assess casino loyalty program members' perceptions of their program membership as well as their gambling attitudes and behaviours.

Task Requirements: In this study, we will ask you to complete several questionnaires regarding your background (e.g., demographics), your gambling habits (i.e., how frequently you gamble) as well as your perceptions and attitudes towards casino loyalty programs.

Benefits/Compensation: We are offering eligible participants who complete the study US $0.80 for participating.

Duration and Locale: The survey will be administered online and should take approximately 12 minutes to complete. Be assured that your name will not be associated in any way with the research findings.

Potential Risk/Discomfort: We can anticipate no physical discomfort to you as a result of your participation in this study. If you do experience any distress or discomfort when thinking about your gambling behavior, you may wish to contact one of the helplines nearest to your location. A list of helplines by town and state can be found at http://www.ncpgambling.org/. A copy of this information will be provided to you in the debriefing sheet following the questionnaires.

Right to withdraw: Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw without penalty. If you withdraw, you have the right to request that your data be deleted. If you would like to withdraw your data, please email one of the researchers listed on the debriefing. The researcher will then delete any record of your participation in the study as well, as the email you sent. If you would like to withdraw from the study and NOT have your data deleted, simply click on the "Withdraw" button located at the bottom of each page of the survey.

Anonymity/Confidentiality: The data collected in this experiment are confidential. IP addresses and geo-location (i.e., longitude and latitude) will be recorded. Immediately upon project completion (December 2021), this information will be permanently deleted. The confidential data are made available only to the researchers associated with this project.

We collect data through an online server (Qualtrics). All data on the Qualtrics server is encrypted and protected using multiple layers of security (e.g., encrypted websites and password protected storage). For more information about the security of data on Qualtrics, please see the Qualtrics security and privacy policy, which can be found at the following link: http://www.qualtrics.com/securitystatement/

Your data will be stored and protected by Qualtrics servers located in Toronto, but may be disclosed via a court order or data breach. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study you acknowledge this.

Data Storing and Sharing: The data will be stored on the computers of the researchers and research assistants involved with this project. A dataset containing no personal information (with IP addresses and geo-location deleted) will be stored electronically and kept indefinitely. Additionally, we will upload this anonymized data set to an online data repository called Open Science Framework (http://osf.io/) for research and teaching

purposes. Aggregate data may also be used in publications, presentations, and future research. Anonymized data may be shared with trusted colleagues.

Do you consent to participate in the study?

a. Yes, I consent
b. No, I do not consent

Appendix J: Chapter Three, Study 1 Measures

Analyzed Measures

Demographics

1. Age: _____

2. Gender: Male/Female/other

Positive Play Scale

The following statements have to do with your beliefs and opinions about gambling. There are no right or wrong answers. Please indicate the extent to which you agree or disagree with each statement.

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

Gambling Literacy

1. Gambling is not a good way to make money.
2. My chances of winning get better after I have lost.
3. If I gamble more often, it will help me to win more than I lose.

Honesty and Control

1. In the last month, I felt in control of my gambling behaviour.
2. In the last month, I was honest with my family and/or friends about the amount of MONEY I spent gambling.
3. I was honest with my family and/or friends about the amount of TIME I spent gambling.

Personal Responsibility

1. I should be able to walk away from gambling at any time.
2. I should be aware of how much money I spend when I gamble.
3. It's my responsibility to spend only money that I can afford to lose.
4. I should only gamble when I have enough money to cover all my bills first.

Pre-commitment

1. I only gambled with MONEY that I could afford to lose.
2. I only spent TIME gambling that I could afford to spend.
3. I considered the amount of MONEY I was willing to lose BEFORE I gambled.
4. I considered the amount of TIME I was willing to spend BEFORE I gambled.

Attitudinal Loyalty to the loyalty program (Experimenter created)

When answering the following items, please keep in mind the **M Life Rewards** casino loyalty program.

Indicate the extent to which you agree or disagree with the following statements.

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

Identification Subscale Items

1. I think of myself as a member of the M Life Rewards loyalty program.
2. Being a member of the M Life Rewards loyalty program is important to me.
3. I value being a member of the M Life Rewards loyalty program.
4. Generally, I feel good when I think about myself as an M Life Rewards member.
5. In general, I'm glad to be an M Life Rewards member.
6. I consider myself to be loyal to the M Life Rewards loyalty program.
7. I am invested in the M Life Rewards loyalty program.

Satisfaction Subscale Items

1. In general, I consider M Life Rewards to be a good loyalty program.
2. I trust that next year the M Life Rewards loyalty program will be of equal or better value.
3. In general, I am satisfied with the M Life Rewards loyalty program.
4. I trust that I will get my money's worth out of being an M Life Rewards loyalty program member.
5. The M Life Rewards loyalty program has met or exceeded my expectations.
6. I trust that I will always receive the correct amount of points and/or rewards from the M Life Rewards program.
7. I like the M Life Rewards loyalty program.

Exploratory Measures

Tier Status

What tier of the M Life Rewards loyalty program are you currently on?
a. Sapphire
b. Pearl
c. Gold
d. Platinum
e. Noir

1a. I care about what tier of the loyalty program that I am in.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

1b. I will gamble to achieve or maintain a tier status.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

1c. I actively try to achieve higher tiers of the loyalty program through my play.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

1d. At times, I have increased my play to get rewards from the loyalty program.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

Single-Item Measure of Awareness of RG Tools

Responsible gambling tools help players avoid the possible harms of engaging in gambling activities. Common tools include the possibility to set a limit on how much time or money one may spend gambling in a given session, receiving feedback on one's gambling activity, or taking an online self-test.

Please think about the MGM affiliated casino you visit most often. Does this casino offer responsible gambling tools?

a. Yes
b. No

Problematic Gambling Behaviours Scale

When you gamble at MGM casinos, do you:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Almost Always

1. Withdraw money from an ATM during a gambling session to continue playing?
2. Ask to borrow money from a family member or friend during a gambling session to continue playing?
3. Play for longer than you planned to?
4. Spend more money than you planned to?

Reward Responsiveness Scale

Each item of this questionnaire is a statement that a person may either agree with or disagree with. For each item, indicate how much you agree or disagree with what the item says. Respond to each item as if it were the only item. That is, don't worry about being "consistent" in your responses. Choose from the following four response options:

1	2	3	4
Very false for me	Somewhat false for me	Somewhat true for me	Very true for me

1. When I do well at something, I love to keep at it.
2. When I get something I want, I feel excited and energized.
3. When I see an opportunity for something I like, I get excited right away.
4. When good things happen to me, it affects me strongly.
5. It would excite me to win a contest.

Attitudinal Loyalty to the casino (Adapted from Baloglu, 2002)

When answering the following items, please keep in mind the casino you visit most frequently that is affiliated with the **M Life Rewards** loyalty program.

What is the name of the **M Life Rewards** casino you visit most frequently?

_____

Indicate the extent to which you agree or disagree with the following statements.

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

Trust subscale

1. I trust the management of [insert casino name].
2. I am certain the service I receive from [insert casino name] will be consistent from visit to visit.
3. If I make a request at [insert casino name], no matter how trivial that request might be, it gets taken care of.
4. If I ask management or an employee a question, I feel they will be truthful to me.
5. The communication I receive from [insert casino name] (letters. Promotional material, advertising) is credible.
6. When employees at [insert casino name] say they will do something, I am sure it will get done.

Psychological commitment subscale

1. I am “emotionally attached” to [insert casino name].
2. I have a sense of belonging to [insert casino name].
3. I feel good going to [insert casino name].
4. I enjoy visiting [insert casino name].
5. Even if there were other casinos I could play at, I would still go to [insert casino name].

Perceived Behavioural Loyalty Scale

When answering the following questions, please keep in mind [insert casino name] (the casino you visit most frequently that is affiliated with the **M Life Rewards** loyalty program).

Please only report on your **in-person gambling at the venue.** That is, please do not count any online gambling.

1. In the last month, how many times (i.e., days) did you visit [insert casino name]? ____ days
2. In the last month, approximately how many hours did you spend at [insert casino name]? ____ hours
3. In the last month, how much money did you spend gambling at [insert casino name]?
   $ _____

We would like to get a better picture of where you gamble.

1. Do you gamble at another casino (in-person) that is not affiliated with **M Life Rewards**?

   a. Yes
   b. No

[if yes go to 2, if no go to next portion of survey]

2. What is the name of that casino?
_____

3. Do you belong to the loyalty program at [insert casino name]?
a. Yes
b. No

Please only report on your **in-person gambling at the venue.** That is, please do not count any online gambling.

4. In the last month, how many times (i.e., days) did you visit [insert casino name]? _____ days
5. In the last month, approximately how many hours did you spend at [insert casino name]? _____ hours
6. In the last month, how much money did you spend gambling at [insert casino name]? $_____

Financially Focused Scale

Please indicate the extent to which you agree with the following statements:

0	1	2	3	4
Not at all				Extremely

1. How I feel about myself is largely based on the amount of money I have.
2. My moods are influenced by the amount of money I have.
3. People will think less of me if I don't have a lot of money.
4. The opportunities that are available to me depend on the amount of money I have.

Additional Demographics items

1. What is your ethnicitiy?

a. Caucasian/European origin
b. African American
c. East Asian (Chinese, Japanese, Korean, etc.)
d. South Asian (Indian, Pakistani, Sri Lankan, etc.)
e. Middle Eastern
f. Native American
g. Hispanic or South American
h. Other or multi-ethnic origin

2. What is your best estimate of your total HOUSEHOLD income last year? [Please include income from all sources such as savings, pensions, rent, and employment insurances, as well as wages]

a. Less than $10,000
b. Between $10,000 and $14,999
c. Between $15,000 and $24,999
d. Between $25,000 and $34,999
e. Between $35,000 and $49,999
f. Between $50,000 and $74,999
g. Between $75,000 and $99,999
h. Between $100,000 and $149,999
i. Between $150,000 and $199,999
j. $200,000 or more

3. What is your best estimate of your total PERSONAL income last year? [Please include income from all sources such as savings, pensions, rent, and employment insurances, as well as wages]

a. Less than $10,000
b. Between $10,000 and $14,999
c. Between $15,000 and $24,999
d. Between $25,000 and $34,999
e. Between $35,000 and $49,999
f. Between $50,000 and $74,999
g. Between $75,000 and $99,999
h. Between $100,000 and $149,999
i. Between $150,000 and $199,999
j. $200,000 or more

4. What State do you live in?

_____

5. What county do you live in?

_____

6. COVID has influenced my gambling at [insert primary casino name].

-3	-2	-1	0	1	2	3
My gambling there has decreased.			My gambling there has stayed the same			My gambling there has increased.

7. COVID has influenced my loyalty to [insert primary casino name].

-3	-2	-1	0	1	2	3
My loyalty has decreased.			My loyalty has stayed the same			My loyalty has increased.

Appendix K: Chapter Three, Study 1 Debriefing

Thank you for participating in this study!

This post-survey information is provided to inform you of the exact nature of the research you just participated in.

Compensation

Please continue onto the next page to receive your completion code. Since the compensation for this study will given directly by MTurk, we do not require any personal or identifying information.

What are we trying to learn in this research?

Loyalty programs are becoming increasingly offered in casinos and other gambling venues. These programs are designed to encourage members to be more loyal to the casino brand (i.e., spend more money and think more positively about the casino). To date, very few empirical studies have examined how responsible or risky gambling attitudes and behaviours are related to loyalty. The current study aims to fill this gap.

Why is this important to scientists or the general public?

This research will help to inform the gambling industry and policy makers about the characteristics of loyal players. Understanding who is more likely to be loyal will provide insight into potential avenues for how to increase both responsible gambling habits and player loyalty.

Is there anything I can do if I found this study to be emotionally upsetting?

Yes, if you feel any distress or anxiety after participating in this study there are a number of agencies that offer confidential services for Problem Gambling. A list of helplines by town and state can be found at http://www.ncpgambling.org/.

What if I have questions later?

If you have any other questions or comments about this research, please feel free to contact Dr. Michael Wohl (Faculty Investigator, michael.wohl@carleton.ca), Samantha Hollingshead (PhD candidate, sam.hollingshead@carleton.ca), or Mackenzie Dowson (mackenzie.dowson@carleton.ca).

Should you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone: 6135202600 ext. 4085 or by email: ethics@carleton.ca). For all other questions about the study, please contact the researchers.

Where can I learn more?

If you are interested in learning more about loyalty programs and responsible gambling, please see the following articles:

Henderson, C. M., Beck, J. T., & Palmatier, R. W. (2011). Review of the theoretical underpinnings of loyalty programs. *Journal of Consumer Psychology*, *21*(3), 256-276.

Nisbet, S. (2005). Responsible gambling features of card-based technologies. *eCOMMUNITY: International Journal of Mental Health & Addiction, 3*(2), 54-63.

Palmer, R., & Mahoney, E. (2005). Winners and losers: Segmenting a casino loyalty programme. *International Gambling Studies*, *5*(2), 271-287.

If you are interested in additional gambling-related resources, The National Center for Responsible Gambling http://www.ncrg.org/ has a wealth of current research, information and confidential services for gambling and problem gambling research. Additional resources can be found at http://www.rgrc.org/en**.**

Thank you for participating in this study! We greatly appreciate your participation.

Appendix L: Chapter Three Assumption Checks

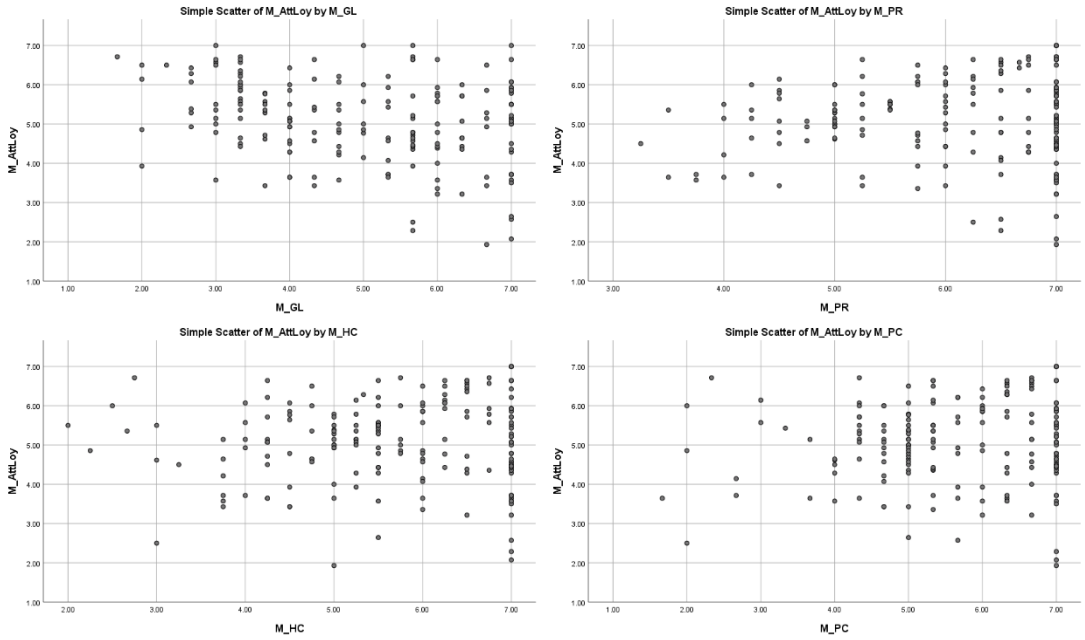
Study 1

Prior to the multiple regression analyses being conducted, necessary assumptions were checked to ensure the analysis was appropriate. The analysis included a continuous dependent variable, as well as two or more continuous independent variables supporting the use of multiple regression. As well, all cases were independently drawn with no known temporal component indicating that the assumption of independence of observations was met. Moreover, scatterplots suggested that there was a linear relationship between each of the four subscales of positive play (as well as the composite score), disordered gambling symptomatology and attitudinal loyalty (see Figure D). Additionally, an inspection of the normal probability plot of the standardized residuals indicated that the error terms were normally distributed for both the regression involving the composite score of positive play and the regression using the four subscales of positive play as predictors of loyalty (Figure E).

The data was then examined for highly influential points (i.e., outliers). When conducting the first regression with the composite score of positive play and disordered gambling symptomatology as the predictors, results from Mahalanobis' distance indicated that there were nine outlier cases ($p < .001$), whereas in the regression with all four subscales of positive play used as predictors, there were only three outlier cases. However, there was no indication that the data points were of poor quality or due to measurement or sampling error; as a result, the outliers were retained.

Next, correlations were conducted to determine whether multicollinearity was present (see Table 3). There was a moderately strong correlation between the honesty and

control and pre-commitment subscales ($r = .79$, $p < .001$). However, the VIF factor for the regression involving the individual subscales of positive play was only 3.29, indicating that the multicollinearity was not sufficiently problematic. Last, the presence of heteroskedasticity was examined using Daryanto's (2020) Heteroskedasticity Test macro version 3. Results from the Breusch-Pagan test were statistically significant ($p < .001$) when the four individual subscales of positive play were used as predictors of attitudinal loyalty, indicating there was heteroskedasticity present in the data. However, when the composite score was used, the Breusch-Pagan test statistic was null ($p = .41$). To combat the violation of the homoskedasticity assumption, the multiple regression using all four subscales of positive play as predictors was conducted using robust standard errors.



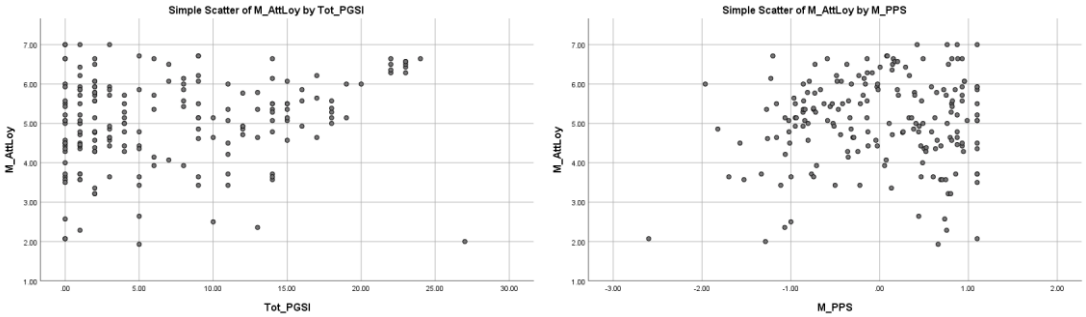


Figure D. Scatterplots of the relation between each of the four subscales of positive play, disordered gambling symptomatology and attitudinal loyalty.

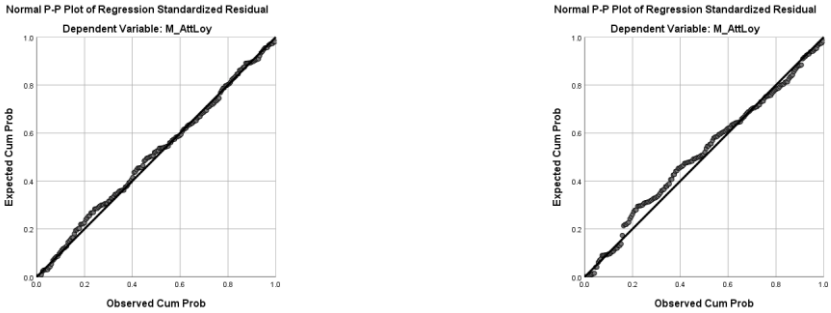


Figure E. Normal probability plots of the studentized residuals

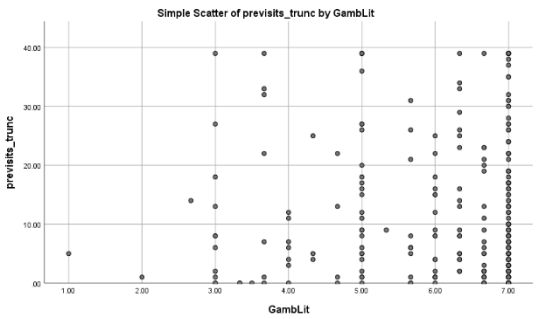
Study 2

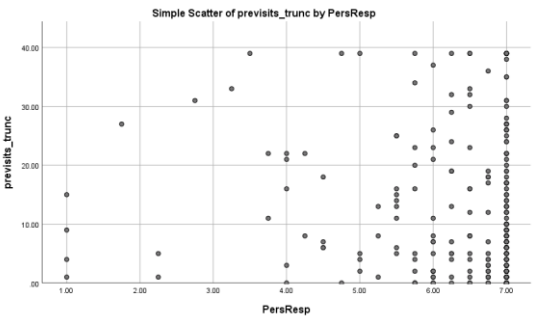
Assumptions

Assumption checks were first conducted to determine the appropriateness of the analytical technique. All variables in the analysis were continuous, supporting the use of multiple regression. Additionally, all cases were independently collected (i.e., independence of observations assumption). Scatterplots of the relation between the independent variables and each of the dependent variables (i.e., visits to the casino and

amount of money wagered) suggested that the relations between the predictor and outcome variables were indeed linear (see Figures F and G).

To avoid the influence of outliers, extreme scores (i.e., > 95th percentile) for both visits to the casino and amount of money wagered were recoded to be equal to the 95th percentile score (see Wohl et al.,2017 for similar methodology). Across all regression analyses that used either the composite score of positive play as a predictor or the individual subscales of positive play as predictors, 18 outliers were identified using Mahalanobis' distance (i.e., *p*s < .001). However, to avoid removing variance in the data, the cases were retained. Moreover, robust standard errors were used to combat distributional violations. Correlational analyses were conducted to check for potential multicollinearity (see Table 4 for results). The results indicated that there were no problematic correlations detected (i.e., *r*s > .70), as well the VIF values were all less than 1.53 suggesting the data were not multicollinear. Last, the presence of heteroskedasticity was examined using Daryanto's (2020) Heteroskedasticity macro version 3. Results from the Breusch-Pagan test for all regression analyses were statistically significant ($p \leq .05$) indicating that there was heteroskedasticity present in the data. Additionally, the normal probability plot of the standardized residuals indicated that the error terms were not normally distributed (see Figures H and I). To combat these violations of assumptions, the multiple regression analyses were conducted in MPlus using robust standard errors.





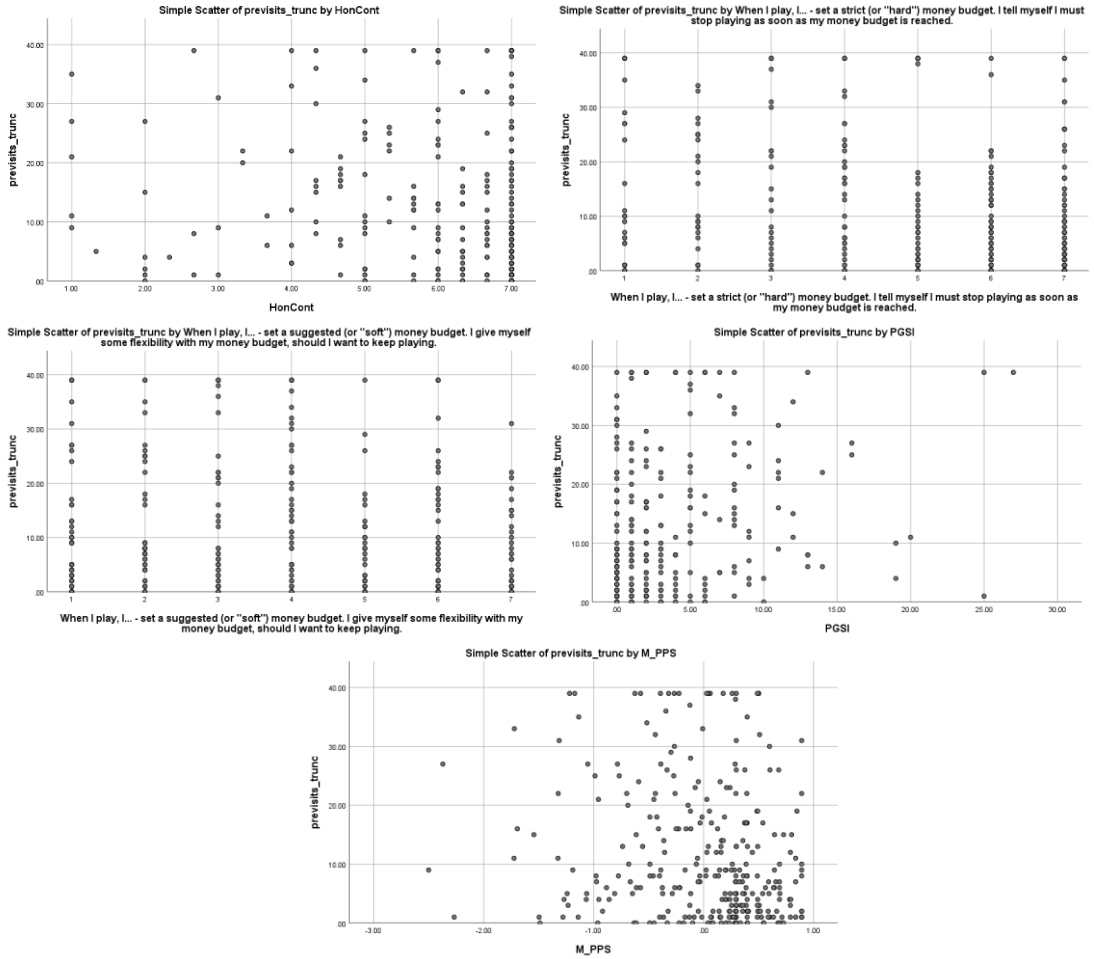
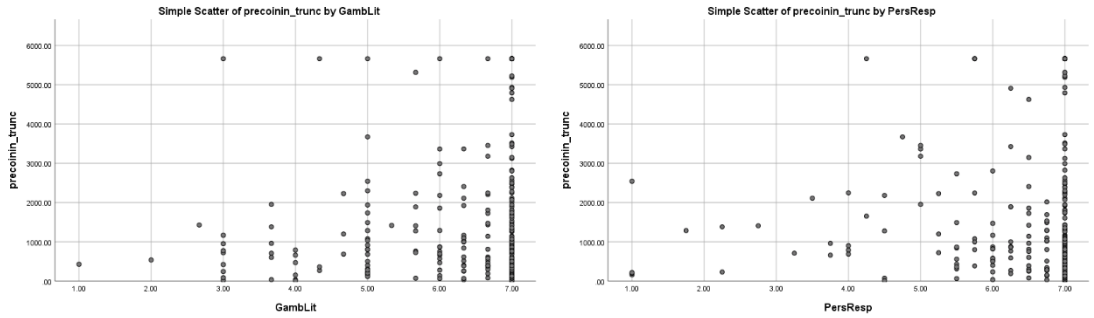


Figure F. Scatterplots of the relation between the four subscales of positive play, positive play as a composite score and visits to the casino



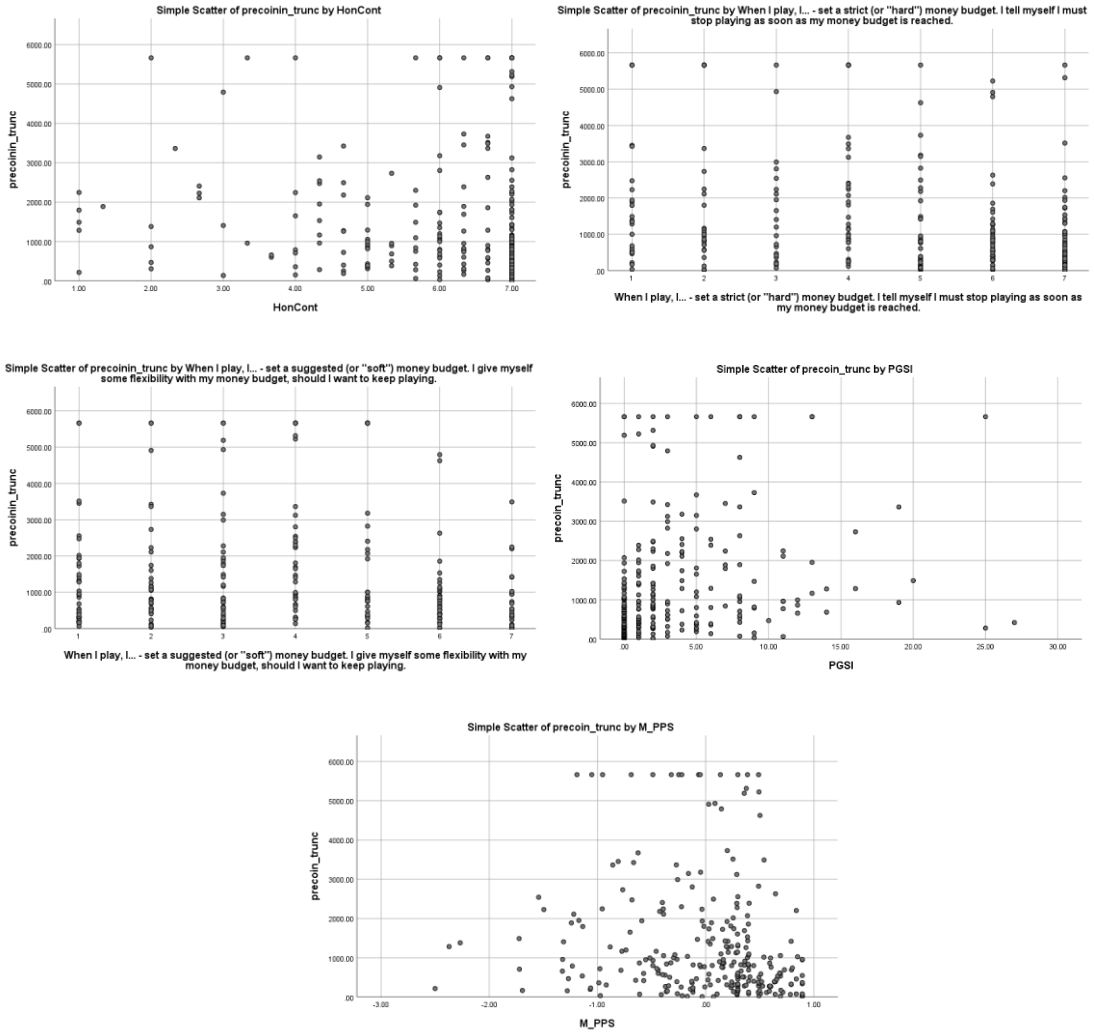


Figure G. Scatterplots of the relation between the four subscales of positive play, positive play as a composite score and amount of money wagered

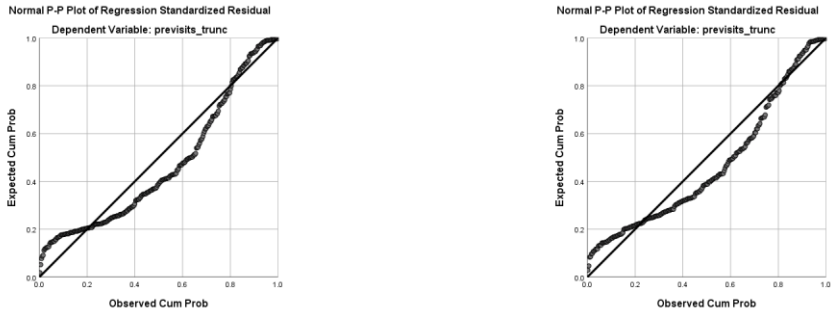


Figure H. Normal probability plots of the studentized residuals when predicting visits to the casino

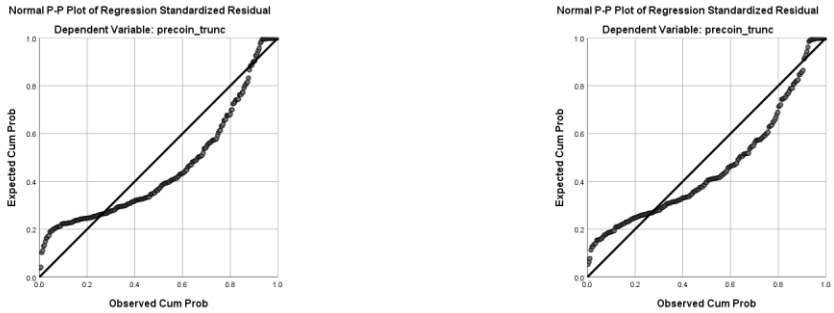


Figure I. Normal probability plots of the studentized residuals when predicting amount of money wagered

Missing Data Analysis

A missing values analysis determined that there was minimal missingness on any of the independent variables (i.e., <5%). However, there was 21.1% and 29.2% missingness on visits to the casino and amount of money wagered, respectively. As a next step, I examined whether there were any differences between those with missing versus complete data. A multiple binary logistic regression was conducted with age, gender (0 = male, 1 = female), frequency in which they used their loyalty card when gambling, proportion of gambling conducted at the Hard Rock casino and frequency of slot machine play entered as independent variables predicting missingness on visits to the casino (coded as 0 = non-missing, 1 = missing). The results indicated that frequency of using a loyalty card when gambling at the casino significantly predicted missingness on visits to the casino, Wald's$\chi^2(1) = 9.51$, $p = .002$, $B = -.32$, $SE = 0.10$, $OR = .72$, 95% CI[.60, .89]. Members who used their loyalty program card less frequently were more likely to have missing data. Similarly, self-reported proportion of gambling spent at the Hard Rock casino was a also a significant predictor of missingness on visits to the casino, Wald's$\chi^2(1) = 7.25$, $p = .007$, $B = -.01$, $SE = 0.004$, $OR = .99$, 95% CI[.98, .99].

Members who reported spending less of a proportion of their gambling at the Hard Rock were more likely to have missing data. Age, gender and frequency of playing slot machines were not predictive of missingness on visits to the casino.

A second multiple binary logistic regression was conducted with the same set of predictors with missingness on amount of money wagered serving as the dependent variable (0 = non-missing, 1 = missing). The same pattern of results emerged. Frequency of using their loyalty program card when gambling was a significant predictor of missingness on amount of money wagered, Wald's $\chi^2(1) = 11.68$, $p = .001$, $B = -.32$, $SE = 0.09$, $OR = .73$, 95% CI[.60, .87]. Members who used their loyalty card less often when gambling were more likely to have missing data. Similarly, proportion of gambling spent at Hard Rock also predicted missingness on amount of money wagered, Wald's $\chi^2(1) = 6.44$, $p = .01$, $B = -.01$, $SE = 0.003$, $OR = .99$, 95% CI[.98, .99]. Members who spent less of a proportion of their gambling at Hard Rock were more likely to have missing data. Age, gender and frequency of slot play did not predict missingness on amount of money wagered. As a result of these findings, the missing data were handled using Full Information Maximum Likelihood with frequency of loyalty card use and proportion of gambling at Hard Rock included in the analyses as correlates of both the independent variables and the error term of the dependent variable.

Appendix M: Chapter Three, Study 2 Measures

Positive Play Scale (Gambling literacy, Personal Responsibility, Honesty & Control)

	1- Strongly disagree (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7- Strongly agree (7)
I should be able to walk away from gambling at any time. (1)	○	○	○	○	○	○	○
I should be aware of how much money I spend when I gamble. (2)	○	○	○	○	○	○	○
It's my responsibility to spend only money that I can afford to lose. (3)	○	○	○	○	○	○	○
I should only gamble when I have enough money to cover all my bills first. (4)	○	○	○	○	○	○	○
Gambling is not a good way to make money. (5)	○	○	○	○	○	○	○
My chances of winning get better after I have lost. (6)	○	○	○	○	○	○	○
If I gamble more often, it will help me to win more than I lose. (7)	○	○	○	○	○	○	○

Pre-commitment

	Never (1)	Rarely (about 10% of the time) (2)	Occasionally (about 30% of the time) (3)	Sometimes (about 50% of the time) (4)	Frequently (about 70% of the time) (5)	Usually (about 90% of the time) (6)	Every time (7)
set a strict (or "hard") MONEY budget. I tell myself I must stop playing as soon as my money budget is reached. (1)	○	○	○	○	○	○	○
set a suggested (or "soft") MONEY budget. I give myself some flexibility with my money budget, should I want to keep playing. (2)	○	○	○	○	○	○	○

Appendix N: Chapter Four, Study 1 Power Analysis

A-priori Sample Size Calculator for Multiple Regression

This calculator will tell you the minimum required sample size for a multiple regression study, given the desired probability level, the number of predictors in the model, the anticipated effect size, and the desired statistical power level.

Please enter the necessary parameter values, and then click 'Calculate'.

Anticipated effect size (f^2):	0.08
Desired statistical power level:	0.8
Number of predictors:	2
Probability level:	0.05

Calculate!

Minimum required sample size: 122

Related Resources

x^2 Formulas References Related Calculators Search

Appendix O: Chapter Four, Studies 1 & 2 Recruitment Notices

Study 1:

Features of Casino Loyalty Programs (10 mins/$0.70)

A "**casino loyalty program"** is a rewards program offered by a casino that allows its members access to special deals, promotions, exclusive features (such as new games), or free merchandise (such as free spins, cash back, or giveaways).
For this study, we are seeking members of casino loyalty programs located in the United States. If you do not gamble or are not a member of a major casino loyalty program, please do not participate in this study.

In this study, we will ask you to complete several questionnaires regarding your background (e.g., demographics), the characteristics of the casino loyalty programs for which you are a member (e.g., what are the features of your casino loyalty program), your gambling behaviors and your gambling attitudes (e.g., how often you gamble).

Your participation as well as your responses will be strictly confidential. Only researchers associated with the project will know you participated in the study and no one will know how you responded to the questions asked.

Eligibility is dependent, in part, on the following:

5. Must be a member of a casino loyalty program located in the United States
6. Must be a resident of the United States
7. Must have gambled in either an online or land-based casino during the previous 12 months
8. Must not currently be seeking or have previously sought treatment for gambling-related problems.

We will ask you to complete a set of questions to determine your eligibility. Only those who are determined to be eligible will be allowed to participate in this study and receive compensation.

Please note that you will be assessed on your eligibility to participate immediately following the informed consent form.

This study takes about 10 minutes, and upon completion you will receive **US $0.70** for your participation.

This study is being conducted by the Carleton University Gambling Lab.

Research Personnel: Samantha Hollingshead (samhollingshead@cmail.carleton.ca), Dr. Michael Wohl (Michael.wohl@carleton.ca), and Mackenzie Dowson (mackenzie.dowson@carleton.ca).

This study has received clearance by the Carleton University Research Ethics Board-B (Reference #105492).

Study 2

What would you like in a casino loyalty program? (10 mins/$0.70)

A "**casino loyalty program"** is a rewards program offered by a casino that allows its members access to special deals, promotions, exclusive features (such as new games), or free merchandise (such as free spins, cash back, or giveaways).
For this study, we are seeking members of casino loyalty programs located in the United States. If you do not gamble or are not a member of a major casino loyalty program in the United States, please do not participate in this study.

In this study, we will ask you to read about some new features being introduced to a casino loyalty program in the United States. We will then ask you to provide feedback on the new features. We want to know what you think!

You will also be asked to complete several questionnaires regarding your background (e.g., demographics), your gambling behaviors and your gambling attitudes (e.g., how often you gamble).

Your participation as well as your responses will be strictly confidential. Only researchers associated with the project will know you participated in the study and no one will know how you responded to the questions asked.

Eligibility is dependent, in part, on the following:

1. Must be a member of a casino loyalty program located in the United States
2. Must be a resident of the United States
3. Must have gambled in a casino (land-based or online) during the previous 12 months
4. Must not currently be seeking or have previously sought treatment for gambling-related problems.

We will also ask you to complete a set of questions to determine your further eligibility. Only those who are determined to be eligible will be allowed to participate in this study and receive compensation.

Please note that you will be assessed on your eligibility to participate immediately following the informed consent form.

This study takes about 10 minutes, and upon completion you will receive **US $0.70** for your participation.

This study is being conducted by the Carleton University Gambling Lab.

Research Personnel: Samantha Hollingshead (samhollingshead@cmail.carleton.ca), Dr. Michael Wohl (Michael.wohl@carleton.ca), and Mackenzie Dowson (mackenzie.dowson@carleton.ca).

This study has received clearance by the Carleton University Research Ethics Board-B (Reference #105492).

Appendix P: Chapter Four, Study 1 Informed Consent

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study. This study has received clearance by the Carleton University Research Ethics Board-B (Reference #105492).

Eligibility is dependent, in part, on the following:

1. Must be a member of a casino loyalty program located in the United States
2. Must be a resident of the United States
3. Must have gambled in either an online or land-based casino during the previous 12 months
4. Must not currently be seeking or have previously sought treatment for gambling-related problems.

We will ask you to complete a set of questions to determine your eligibility. Only those who are determined to be eligible will be allowed to participate in this study and receive compensation.

Please note that you will be assessed on your eligibility to participate immediately following the informed consent form.
Present Study: Features of Casino Loyalty Programs

Research Personnel: The following people are involved in this study, and may be contacted at any time if you have questions or concerns:

Michael Wohl (Faculty Investigator, michael.wohl@carleton.ca, Samantha Hollingshead (PhD candidate, sam.hollingshead@carleton.ca, or Mackenzie Dowson (Other research personnel, Mackenzie.dowson@carleton.ca).

Should you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone: 6135202600 ext. 4085 or by email: ethics@carleton.ca). For all other questions about the study, please contact the researchers.

Purpose: The purpose of this study is to assess casino loyalty program members' perceptions of their program membership as well as their gambling attitudes and behaviours.

Task Requirements: In this study, we will ask you to complete several questionnaires regarding your background (e.g., demographics), your gambling habits (i.e., how frequently you gamble) as well as your perceptions and attitudes towards casino loyalty programs.

Benefits/Compensation: We are offering eligible participants who complete the study US $0.70 for participating.

Duration and Locale: The survey will be administered online and should take approximately 10 minutes to complete. Be assured that your name will not be associated in any way with the research findings.

Potential Risk/Discomfort: We can anticipate no physical discomfort to you as a result of your participation in this study. If you do experience any distress or discomfort when thinking about your gambling behavior, you may wish to contact one of the helplines nearest to your location. A list of helplines by town and state can be found at http://www.ncpgambling.org/. A copy of this information will be provided to you in the debriefing sheet following the questionnaires.

Right to withdraw: Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw without penalty. If you withdraw, you have the right to request that your data be deleted. If you would like to withdraw your data, please email one of the researchers listed on the debriefing. The researcher will then delete any record of your participation in the study as well, as the email you sent. If you would like to withdraw from the study and NOT have your data deleted, simply click on the "Withdraw" button located at the bottom of each page of the survey.

Anonymity/Confidentiality: The data collected in this experiment are confidential. IP addresses and geo-location (i.e., longitude and latitude) will be recorded. Immediately upon project completion (December 2021), this information will be permanently deleted. The confidential data are made available only to the researchers associated with this project.

We collect data through an online server (Qualtrics). All data on the Qualtrics server is encrypted and protected using multiple layers of security (e.g., encrypted websites and password protected storage). For more information about the security of data on Qualtrics, please see the Qualtrics security and privacy policy, which can be found at the following link: http://www.qualtrics.com/securitystatement/

Your data will be stored and protected by Qualtrics servers located in Toronto, but may be disclosed via a court order or data breach. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study you acknowledge this.

Data Storing and Sharing: The data will be stored on the computers of the researchers and research assistants involved with this project. A dataset containing no personal information (with IP addresses and geo-location deleted) will be stored electronically and kept indefinitely. Additionally, we will upload this anonymized data set to an online data repository called Open Science Framework (http://osf.io/) for research and teaching

purposes. Aggregate data may also be used in publications, presentations, and future research. Anonymized data may be shared with trusted colleagues.

Do you consent to participate in the study?

a. Yes, I consent
b. No, I do not consent

Appendix Q: Chapter Four, Study 1 Measures

Analyzed Measures

Willingness to use a limit setting tool if reward

1. I would be more willing to use a limit setting tool if my casino loyalty program were to give me reward points doing so.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

2. I would find a limit setting tool more appealing if my casino loyalty program were to give me reward points for using it.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

3. Limit setting tools would be more valuable to me if I received loyalty program reward points for using them.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

4. More people would use a limit setting tool if they were given reward points for doing so.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

5. I would be more likely to use a limit setting tool if I received loyalty program reward points for doing so.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

Attitudinal loyalty to the loyalty program (Experimenter created)

When answering the following items, please keep in mind the casino loyalty program that you use most frequently, in which:

a) you are given access to a money/time limit setting tool, BUT
b) you have NEVER USED the money and/or time limit tool when gambling

Indicate the extent to which you agree or disagree with the following statements.

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

Identification Subscale Items

If my loyalty program were to give me reward points for using a money and/or time limit tool…

1. I would be more likely to think of myself as a member of the [insert program name] loyalty program.
2. Being a member of the [insert program name] loyalty program would become more important to me.
3. I would be more likely to value being a member of the [insert program name] loyalty program.
4. I would be more likely to feel good when I think about myself as a [insert program name] member.
5. In general, I would be happier to be a [insert program name] member.
6. I would be more likely to be loyal to the [insert program name] program.
7. I would be more invested in the [insert program name] loyalty program.

Satisfaction Subscale Items

1. In general, I would be more likely to consider [insert program name] to be a good loyalty program.
2. I would be more likely to trust that next year the [insert program name] loyalty program will be of equal or better value.
3. In general, I would be more satisfied with the [insert program name] loyalty program.
4. I would be more likely to trust that I will get my money's worth out of being a [insert program name] loyalty program member.
5. The [insert program name] program would better meet or would exceed my expectations.
6. I would be more likely to trust that I will receive the correct amount of points and/or rewards from the [insert program name] program.
7. I would like the [insert program name] loyalty program more.

Demographics

1. Age: _____

2. Gender: Male/Female

3. In the past 12 months, how often did you bet or spend money on gambling?
   8. Daily
   9. 2 to 6 times/week
   10. About once/week
   11. 2-3 times/month
   12. About once/month
   13. Between 6-11 times/year
   14. Between 1-5 times/year

4. Select the game you MOST prefer to play:
   j. Slots
   k. Electronic gambling machines
   l. Poker
   m. Black Jack
   n. Roulette
   o. Pro-line or sports betting
   p. Lottery
   q. Scratch Tickets
   r. Other (please specify) _____

5. For how many years (or months) have you gambled? (Please answer in years, then months)

   _____

6. Where do you typically gamble (e.g., home, internet, casino, VLT, etc.)?
_____

7. In a given gambling session, how much money do you need to lose to walk away? $
_____

8. Do you think that you have a gambling problem?

YES NO

Exploratory Measures

Loyalty Program Characteristics

A "**casino loyalty program"** is a rewards program offered by a casino that allows its members access to special deals, promotions, exclusive features (such as new games), or free merchandise (such as free spins, cash back, or giveaways).
1a. What is the name of the casino loyalty program (land-based or online) you use most frequently? _____

1b. Can you use this loyalty program membership at both a land-based and online casino?
a. Yes
b. No

1c. If yes, where do you use it most often?
a. land-based
b. online
c. both

1d. How many tiers does this loyalty program have?
a. 1
b. 2
c. 3
d. 4
e. I don't know

1e. What tier of the loyalty program are you currently on? _____

1f. I care about what tier of the loyalty program that I am in.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

1g. I will gamble to achieve or maintain a tier status.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

1h. I actively try to achieve higher tiers of the loyalty program through my play.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

1i. At times, I have increased my play to get rewards from the loyalty program.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

The next few items will ask you about **limit setting tools or apps.** These are typically provided to players by inserting their loyalty program card into a gambling machine. Such tools typically allow the player to set a limit on the amount of time and/or money they spend gambling.

Previously, you indicated that you have not previously used a limit setting tool made available to you through your casino loyalty program.

1. Please indicate the name of the casino loyalty program that you use most frequently, in which:
a) you are given access to a money/time limit setting tool, BUT
b) you have NEVER USED the money and/or time limit tool when gambling

_____

2. If you did decide to use the tool, which tools would you use?
   a. Money limit setting tool
   b. Time limit setting tool
   c. Both

3. In one or two sentences, please explain your main reason for choosing not to use a limit setting tool when you gamble.

_____

Attitudinal Loyalty to the casino (Adapted from Baloglu, 2002)

When answering the following items, please keep in mind the casino loyalty program that you use most frequently, in which:

a) you are given access to a money/time limit setting tool, BUT
b) you have NEVER USED the money and/or time limit tool when gambling

Indicate the extent to which you agree or disagree with the following statements.

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

Trust subscale

If my loyalty program were to give me reward points for using a money and/or time limit tool…

1. I would be more trusting of the management at this casino.
2. I would be more certain the service I would receive from this casino would be consistent from visit to visit.
3. I would be more certain that requests I make at this casino, no matter how trivial the request may be, would be taken care of.
4. I would be more certain that questions I ask of management or an employee a question would be answered truthfully.
5. The communication I would receive from this casino (letters, promotional material, advertising) would be more credible.
6. Employees at this casino who say they would do something for me, would get it done.

Psychological commitment subscale

If my loyalty program were to give me reward points for using a limit setting tool…

1. I would become “emotionally attached” to this casino.
2. I would have an increased sense of belonging to this casino.
3. It would make me feel better going to the casino.
4. I would enjoy visiting this casino more.
5. Even if there were other casinos I could play at, I would still go to this casino.

Perceived Behavioural Loyalty

If your loyalty program were to start giving you rewards points for using a limit setting tool today, in the next month:

7. How many times (i.e., days) do you think you would visit this casino (either online or in-person)? ____ days
8. Approximately how many hours do you think you spend at this casino (either online or in-person)? ____ hours
9. How much money do you think you would spend gambling at this casino (either online or in-person)? $ _____

4. Do you belong to another casino's loyalty program?
    a. Yes
    b. No

1. How many times (i.e., days) do you think you would visit another casino for which you are also a loyalty program member (either online or in-person)? _____ days
2. Approximately how many hours do you think you would spend at this casino (either online or in-person)?
   _____ hours
3. How much money do you think you'd spend gambling at this casino (either online or in-person)? $_____

Appendix R: Chapter Four, Study 1 Debriefing

Thank you for participating in this study!

This post-survey information is provided to inform you of the exact nature of the research you just participated in.

Compensation

Please continue onto the next page to receive your completion code. Since the compensation for this study will given directly by MTurk, we do not require any personal or identifying information.

What are we trying to learn in this research?

Loyalty programs are becoming increasingly offered in casinos and other gambling venues. Moreover, many of these programs offer their members access to responsible gambling tools that can help them to keep their play positive. Additionally, this study sought to explore how perceptions and use of responsible gambling tools relates to members' gambling attitudes and behaviours. As well, we will also be examining how perceptions of responsible gambling tools differ among members who have and have not previously used these tools.

Why is this important to scientists or the general public?

This research will help to inform the gambling industry and policy makers about how casino loyalty program members perceive the responsible gambling tools that are being offered to them through their program. Understanding these perceptions will provide insight into potential avenues for how to increase engagement with responsible gambling tools.

Is there anything I can do if I found this study to be emotionally upsetting?

Yes, if you feel any distress or anxiety after participating in this study there are a number of agencies that offer confidential services for Problem Gambling. A list of helplines by town and state can be found at http://www.ncpgambling.org/.

What if I have questions later?

If you have any other questions or comments about this research, please feel free to contact Dr. Michael Wohl (Faculty Investigator, michael.wohl@carleton.ca), Samantha Hollingshead (PhD candidate, sam.hollingshead@carleton.ca), or Mackenzie Dowson (mackenzie.dowson@carleton.ca).

Should you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone: 6135202600 ext. 4085 or by email:

ethics@carleton.ca). For all other questions about the study, please contact the researchers.

Where can I learn more?

If you are interested in learning more about loyalty programs and responsible gambling, please see the following articles:

Henderson, C. M., Beck, J. T., & Palmatier, R. W. (2011). Review of the theoretical underpinnings of loyalty programs. *Journal of Consumer Psychology*, *21*(3), 256-276.

Nisbet, S. (2005). Responsible gambling features of card-based technologies. *eCOMMUNITY: International Journal of Mental Health & Addiction, 3*(2), 54-63.

Palmer, R., & Mahoney, E. (2005). Winners and losers: Segmenting a casino loyalty programme. *International Gambling Studies*, *5*(2), 271-287.

If you are interested in additional gambling-related resources, The National Center for Responsible Gambling http://www.ncrg.org/ has a wealth of current research, information and confidential services for gambling and problem gambling research. Additional resources can be found at http://www.rgrc.org/en**.**

Thank you for participating in this study! We greatly appreciate your participation.

Appendix S: Chapter Four Assumption Checks

Study 1

Necessary assumptions were checked before conducting the main regression analysis. Both the independent and dependent variables were continuous, supporting the use of linear regression. The cases were independently drawn with no known temporal connections, providing support for the independence of observations assumption. A scatterplot of the independent variable (i.e., willing to use a responsible gambling tool if rewarded) against the dependent variable (i.e., attitudinal loyalty) indicated that the relation between the two variables was linear in nature. As well, the relation between the covariate (i.e., PGSI) and attitudinal loyalty was also linear (Figure J). The normal probability plot of the studentized residuals suggested the error terms were normally distributed (see Figure K).

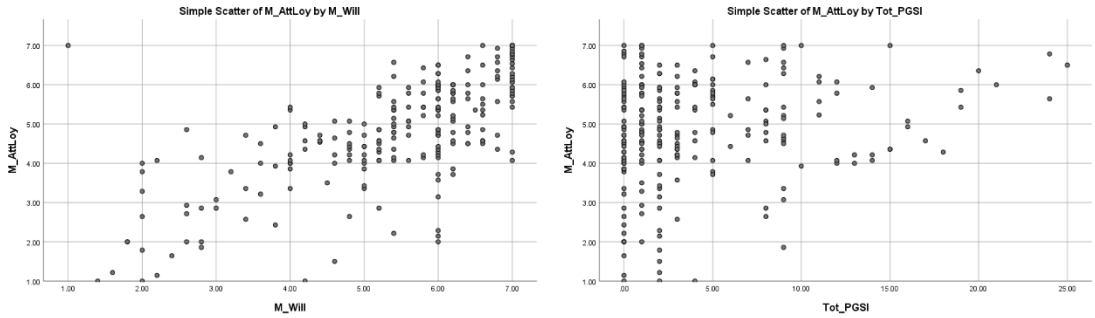


Figure J. Scatterplot of the independent variable (willingness to use a limit setting tool) and covariate (disordered gambling symptomatology) against the dependent measure of attitudinal loyalty

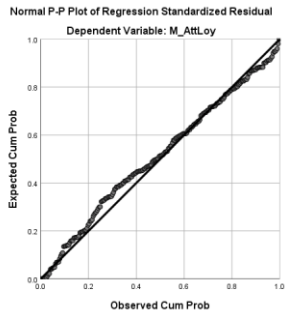


Figure K. Normal probability plot of the studentized residuals when predicting attitudinal loyalty

Four potential outliers were identified using Mahalanobis' distance (*p*s < .001). However, the cases were not of poor data quality, and therefore were retained to maintain variability in the data. The independent variable (i.e., willingness) and the control variable (i.e., disordered gambling symptomatology) were not significantly correlated ($r = .05$, $p = .42$), therefore multicollinearity was not present in the data. Heteroskedasticity was then examined using Daryanto's (2020) Heteroskedasticity Test macro version 3. Results from the Breusch-Pagan test were statistically significant ($p < .001$) indicating that there was heteroskedasticity present in the data. To combat the violation of the homoskedasticity assumption, the regression analysis was conducted using robust standard errors. Last, a missing values analysis revealed that there was less than 3% missingness on the variables included in the model, indicating that missing data techniques did not need to be used when conducting the analysis.

Study 2

Prior to conducting the analyses, necessary assumptions were checked. All cases were independently drawn with no known temporal connection, supporting the assumption of the independence of observations. Scatterplots of willingness to use the

tool by attitudinal loyalty indicated that the variables were linearly related (and that this relation was also present for each condition; see Figure L). Additionally, a histogram and normal probability plot of the studentized residuals suggested the error terms were normally distributed (Figure M).

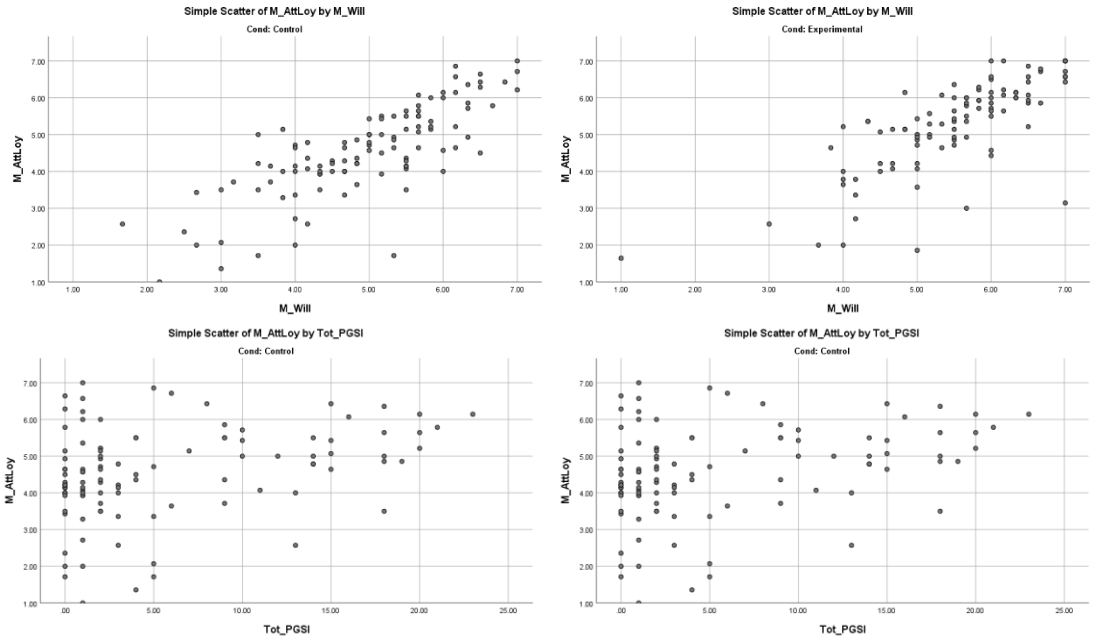


Figure L. Scatterplots of the relation between willingness to use a limit setting tool and attitudinal loyalty, as well as the relation between disordered gambling symptomatology and attitudinal loyalty, separately by condition.

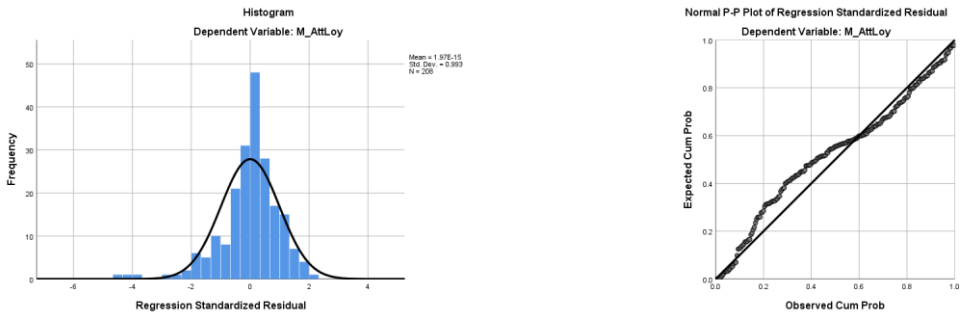


Figure M. Histogram and normal probability plot of the studentized residuals when predicting attitudinal loyalty

One outlier was identified using Mahalanobis' distance ($p < .001$). However, upon inspecting the case, the data was of high quality (i.e., provided detailed responses to open-ended items, passed all attention checks) so the point was retained to maintain variability. Heteroskedasticity was determined to be present when examined using Daryanto's (2021) macro to conduct the Breusch-Pagan test ($p = .02$). Therefore, the analyses were conducted using robust standard errors. Last, there was 0% missingness on all variables, indicating missing data analysis did not need to be used when conducting the main mediation.

Appendix T: Chapter Four, Study 2 Informed Consent

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study. This study has received clearance by the Carleton University Research Ethics Board-B (Reference #105492).

Eligibility is dependent, in part, on the following:

1. Must be a member of a casino loyalty program located in the United States
2. Must be a resident of the United States
3. Must have gambled in a casino (land-based or online) during the previous 12 months
4. Must not currently be seeking or have previously sought treatment for gambling-related problems.

We will ask you to complete a set of questions to determine your eligibility. Only those who are determined to be eligible will be allowed to participate in this study and receive compensation.

Please note that you will be assessed on your eligibility to participate immediately following the informed consent form.

Present Study: What would you like in a casino loyalty program?

Research Personnel: The following people are involved in this study, and may be contacted at any time if you have questions or concerns:

Michael Wohl (Faculty Investigator, michael.wohl@carleton.ca, Samantha Hollingshead (PhD candidate, sam.hollingshead@carleton.ca, or Mackenzie Dowson (Other research personnel, Mackenzie.dowson@carleton.ca).

Should you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (email: ethics@carleton.ca). For all other questions about the study, please contact the researchers.

Purpose: The purpose of this study is to provide feedback on a new feature being introduced to a casino loyalty program in the United States.

Task Requirements: In this study, we will ask you to read about some new features being introduced to a casino loyalty program in the United States. We will then ask you to provide feedback on the new features. We want to know what you want to see!

You will also be asked to complete several questionnaires regarding your background (e.g., demographics), your gambling behaviors and your gambling attitudes (e.g., how often you gamble).

Benefits/Compensation: We are offering eligible participants who complete the study US $0.70 for participating.

Duration and Locale: The survey will be administered online and should take approximately 10 minutes to complete. Be assured that your name will not be associated in any way with the research findings.

Potential Risk/Discomfort: We can anticipate no physical discomfort to you as a result of your participation in this study. If you do experience any distress or discomfort when thinking about your gambling behavior, you may wish to contact one of the helplines nearest to your location. A list of helplines by town and state can be found at http://www.ncpgambling.org/. A copy of this information will be provided to you in the debriefing sheet following the questionnaires.

Right to withdraw: Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw without penalty. If you withdraw, you have the right to request that your data be deleted. If you would like to withdraw your data, please email one of the researchers listed on the debriefing. The researcher will then delete any record of your participation in the study as well, as the email you sent. If you would like to withdraw from the study and NOT have your data deleted, simply click through the survey until you reach the debriefing.

Anonymity/Confidentiality: The data collected in this experiment are confidential. IP addresses and geo-location (i.e., longitude and latitude) will be recorded. Immediately upon project completion (December 2021), this information will be permanently deleted. The confidential data are made available only to the researchers associated with this project.

We collect data through an online server (Qualtrics). All data on the Qualtrics server is encrypted and protected using multiple layers of security (e.g., encrypted websites and password protected storage). For more information about the security of data on Qualtrics, please see the Qualtrics security and privacy policy, which can be found at the following link: http://www.qualtrics.com/securitystatement/

Your data will be stored and protected by Qualtrics servers located in Toronto, but may be disclosed via a court order or data breach. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study you acknowledge this.

Data Storing and Sharing: The data will be stored on the computers of the researchers and research assistants involved with this project. A dataset containing no personal information (with IP addresses and geo-location deleted) will be stored electronically and kept indefinitely. Additionally, we will upload this anonymized data set to an online data

repository called Open Science Framework (http://osf.io/) for research and teaching purposes. Aggregate data may also be used in publications, presentations, and future research. Anonymized data may be shared with trusted colleagues.

Do you consent to participate in the study?

a. Yes, I consent
b. No, I do not consent

Appendix U: Chapter Four, Study 2 Measures

Analyzed Measures

Demographics

Age: _____

Gender: Male/Female/Non-binary/Prefer not to say

Manipulations

Control Condition: No reward for use

Shortly, a major casino chain in the United States will introduce a new feature to their casino loyalty program.

This feature is a tool that will **allow members to set a money and/or time limit on their gambling**. Players will be able to choose whether or not to set a limit.

After inserting their loyalty card into any electronic gambling machine (for example, a slot machine), a pop-up message will appear on the screen that asks the player if they want to set a limit on the amount of money and/or time they spend gambling that day. If a player would like to set a limit, they will then be given the opportunity to do so. For instance, a player could set a money limit of $20 over a period of 24 hours, meaning they can only lose a maximum of $20 gambling at the casino that day.

When the player has reached their limit, they will be notified with a message that appears on the screen of the game.

Members can then choose if they want to quit gambling and cash out, or close the message and continue playing.

The purpose is help people to play responsibly.

Experimental Condition: Rewarding limit setting

Shortly, a major casino chain in the United States will introduce a new feature to their casino loyalty program.

This feature is a tool that will **allow members to set a money and/or time limit on their gambling**. Players will be able to choose whether or not to set a limit. To encourage players to use the tool, the casino will **reward players with loyalty program points** every time the player chooses to set a money and/or time limit on their gambling session.

After inserting their loyalty card into any electronic gambling machine (for example, a slot machine), a pop-up message will appear on the screen that asks the player if they want to set a limit on the amount of money and/or time they spend gambling that day. If a player would like to set a limit, they will then be given the opportunity to do so. For instance, a player could set a money limit of $20 over a period of 24 hours, meaning they can only lose a maximum of $20 gambling at the casino that day.

When the player has reached their limit, they will be notified with a message that appears on the screen of the game.

Members can then choose if they want to quit gambling and cash out, or close the message and continue playing. Regardless of their decision, loyalty points will be earned for setting the limit, but **bonus loyalty points will be earned for staying within their limit**.

The purpose is help and motivate people to play responsibly.

Comprehension check

Control condition: No reward for use

Which of the below statement **best** describes what you just read?

A casino loyalty program in the United States...
a. ...is considering changing their marketing slogan.
b. ...is introducing a tool that will allow members to set a money or time limit on their gambling.
c. ...is incorporating video games into their sports betting platform and will allow players to place wagers on video game tournaments.
d. ...is considering giving all loyalty program members free access to an exclusive lounge.

Experimental condition: Reward for limit setting

Which of the below statement **best** describes what you just read?

A casino loyalty program in the United States...
a. ...is considering changing their marketing slogan.
b. ...is introducing a tool that will reward players with loyalty program points for using a tool that allows them to set a money or time limit on their gambling.
c. ...is incorporating video games into their sports betting platform and will allow players to place wagers on video game tournaments.
d. ...is considering giving all loyalty program members free access to an exclusive lounge.

Willingness to Use the Responsible Gambling Tool (post-manipulation)

In thinking about what you just read…

Please indicate the extent to which you agree or disagree with the following statements.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

1. I would use this tool to set a MONEY limit on my gambling.
2. I would use this tool to set a TIME limit on my gambling.
3. Players will find this tool appealing.
4. Players will get value from using this tool to set a limit.
5. This tool would help me gambling more responsibly.
6. The tool will help others to gamble more responsibly.

Attitudinal loyalty (Experimenter created)

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

Please think about the casino you just read about. When answering the following questions, please imagine you were a member of their casino loyalty program. Indicate the extent to which you agree or disagree with the following statements.

If this casino were to introduce the new limit setting tool...

Identification Subscale Items

1. I would be more likely to think of myself as a member of their loyalty program.
2. Being a member of their loyalty program would become more important to me.
3. I would be more likely to value being a member of their loyalty program.
4. I would be more likely to feel good when I think about myself as a member.
5. I would be happier to be a member.
6. I would be more likely to be loyal to the program.
7. I would be more invested in their loyalty program.

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

Please think about the casino you just read about. When answering the following questions, please imagine you were a member of their casino loyalty program. Indicate the extent to which you agree or disagree with the following statements.

If this casino were to introduce the new limit setting tool...

Satisfaction Subscale Items

1. I would be more likely to consider it to be a good loyalty program.
2. I would be more likely to trust that next year the loyalty program will be of equal or better value.
3. I would be more satisfied with the loyalty program.
4. I would be more likely to trust that I will get my money's worth out of being a loyalty program member.
5. The program would better meet or would exceed my expectations.
6. I would be more likely to trust that I will receive the correct amount of points and/or rewards from the program.
7. I would like the loyalty program more.

Exploratory Measures

Characteristics of Casino Loyalty Program (pre-manipulation)

A "**casino loyalty program"** is a rewards program offered by a casino that allows its members access to special deals, promotions, exclusive features (such as new games), or free merchandise (such as free spins, cash back, or giveaways).
1a. What is the name of the casino loyalty program (land-based or online) you use most frequently? _____

1b. What is the name of casino you play at most frequently that is affiliated with [insert loyalty program name]?
_____

1c. Can you use this loyalty program membership at both a land-based and online casino?
a. Yes
b. No

1d. If yes, where do you use it most often?
a. land-based
b. online
c. both

2. The next item will ask you about **limit setting tools or apps.** These are typically provided to players by inserting their loyalty program card into a gambling machine. Such tools allow the player to set a limit on the amount of time and/or money they spend gambling.

Previously, you indicated that you have never previously used a money or time limit setting tool when you gamble. In one or two sentences, please explain your main reason for choosing not to use a limit setting tool when you gamble.

_____

Tier Status

1a. I care about what tier of the loyalty program that I am in.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

1b. I will gamble to achieve or maintain a tier status.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

1c. I actively try to achieve higher tiers of the loyalty program through my play.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

1d. At times, I have increased my play to get rewards from the loyalty program.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

Attitudinal Loyalty to the casino (adapted from Baloglu)

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

Please think about the casino you just read about. When answering the following questions, please imagine you were a member of their casino loyalty program. Indicate the extent to which you agree or disagree with the following statements.

If this casino were to introduce the new limit setting tool...

Trust subscale

1. I would be more trusting of the management at this casino.
2. I would be more certain the service I would receive from this casino would be consistent from visit to visit.
3. I would be more certain that requests I make at this casino, no matter how trivial the request may be, would be taken care of.
4. I would be more certain that questions I ask of management or an employee a question would be answered truthfully.
5. The communication I would receive from this casino (letters, promotional material, advertising) would be more credible.
6. Employees at this casino who say they would do something for me, would get it done.

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

Please think about the casino you just read about. When answering the following questions, please imagine you were a member of their casino loyalty program. Indicate the extent to which you agree or disagree with the following statements.

If this casino were to introduce the new limit setting tool...

Psychological commitment subscale

1. I would become “emotionally attached” to this casino.
2. I would have an increased sense of belonging to this casino.
3. It would make me feel better going to the casino.
4. I would enjoy visiting this casino more.
5. Even if there were other casinos I could play at, I would still go to this casino.

Perceived Behavioural Loyalty

Please think about the casino you just read about. When answering the following questions, please imagine you were a member of their casino loyalty program.
If this casino were to introduce the new limit setting tool...

1. Would you increase the number of times you visited the casino?
   a. Yes
   b. No

   If yes, by how many days per month would you increase your visits?

   If no, why not? _____

2. Would you increase the amount of money you spend gambling at the casino?
   a. Yes
   b. No

   If yes, how much more money would you spend gambling per month?

   If no, why not? _____

3. Would you increase the amount of time you spend gambling at the casino?
   a. Yes
   b. No

   If yes, how much more time (in hours) would you spend gambling per month?

   If no, why not? _____

Perceptions of Social Responsibility

Please indicate the extent to which you agree or disagree with the following statement:

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

1. By offering this limit setting tool, the casino is acting in the best interest of their loyal program members.
2. By offering this limit setting tool, the casino is trying to strike an ethical balance between making a profit and helping their loyalty program members to gamble more responsibly.
3. I think it is socially responsible to give players loyalty program reward points for using a limit setting tool when they gamble.

Reward Responsiveness

For each item, indicate how much you agree or disagree with what the item says.

0	1	2	3
Very false for me	Somewhat false for me	Somewhat true for me	Very true for me

1. When I do well at something, I love to keep at it.
2. When I get something I want, I feel excited and energized.
3. When I see an opportunity for something I like, I get excited right away.
4. When good things happen to me, it affects me strongly.
5. It would excite me to win a contest.

Financially Focused Self-Concept

Please indicate the extent to which you agree with the following statements:

0	1	2	3	4
Not at all				Extremely

1. How I feel about myself is largely based on the amount of money I have.
2. My moods are influenced by the amount of money I have.
3. People will think less of me if I don’t have a lot of money.
4. The opportunities that are available to me depend on the amount of money I have.

Appendix V:
Chapter Four, Study 2 Debriefing and Informed Consent to the Use of Data

Thank you for participating in this study!

This post-survey information is provided to inform you of the exact nature of the research you just participated in.

Compensation

Please continue onto the next page to receive your completion code. Since the compensation for this study will given directly by MTurk, we do not require any personal or identifying information.

What are we trying to learn in this research?

Loyalty programs are becoming increasingly offered in casinos and other gambling venues. Moreover, many of these programs offer their members access to limit setting tools that can help them to keep their play positive. However, very few players actually use these tools to set a money or time limit on their gambling. One way to potentially encourage more players to use these tools may be to offer players loyalty program reward points for doing so. The current study aimed to understand how rewarding players for using a limit setting tool may be related to willingness to use the tool and brand perceptions.

Why is this important to scientists or the general public?

This research will help to inform the gambling industry and policy makers about a new potential pathway to increase rates of engagement with responsible gambling tools,

What are our hypotheses and predictions?

In this study, you were randomly assigned to read one of two blurbs describing a new feature being introduced to a major casino loyalty program. In one condition, participants read about a new tool that would allow players to set a limit on the amount of time or money they wish to spend gambling. In the other condition, participants read about the same limit setting tool, however, they were also told they would receive loyalty program reward points for using the tool to set a limit, as well as bonus points if they adhered to their limit. These blurbs were created by the research team. That is, no part of what you read was real.

We hypothesized that participants who were told that they would receive loyalty program reward points for using the tool, would evaluate the tool more positively and be more willing to use the limit setting tool (compared to those who were not told about rewards).

We did not tell you our hypotheses or that the information was fake ahead of time because, if we had done so, you might have felt pressure or some demand to respond or react in a particular way. That is, you might have responded based on what you thought we wanted rather than on your typical or normal response. When people respond based on what they believe the researcher is looking for, this is called the demand-awareness effect. This can be a problem in research because our results would not accurately reflect your true attitudes and/or behaviours. If this did occur, scientific progress would be affected because inappropriate avenues of research might be followed. Therefore, we inform you about the nature of a particular study AFTER you have participated in it. Because we could not tell you this up front, on the next page, we will ask for your consent to use your data.

Is there anything I can do if I found this study to be emotionally upsetting?

Yes, if you feel any distress or anxiety after participating in this study there are a number of agencies that offer confidential services for Problem Gambling. A list of helplines by town and state can be found at http://www.ncpgambling.org/.

What if I have questions later?

If you have any other questions or comments about this research, please feel free to contact Dr. Michael Wohl (Faculty Investigator, michael.wohl@carleton.ca), Samantha Hollingshead (PhD candidate, sam.hollingshead@carleton.ca), or Mackenzie Dowson (mackenzie.dowson@carleton.ca).

Should you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (email: ethics@carleton.ca). For all other questions about the study, please contact the researchers.

Where can I learn more?

If you are interested in learning more about loyalty programs and responsible gambling, please see the following articles:

Henderson, C. M., Beck, J. T., & Palmatier, R. W. (2011). Review of the theoretical underpinnings of loyalty programs. *Journal of Consumer Psychology*, *21*(3), 256-276.

Nisbet, S. (2005). Responsible gambling features of card-based technologies. *eCOMMUNITY: International Journal of Mental Health & Addiction, 3*(2), 54-63.

Palmer, R., & Mahoney, E. (2005). Winners and losers: Segmenting a casino loyalty programme. *International Gambling Studies*, *5*(2), 271-287.

If you are interested in additional gambling-related resources, The National Center for Responsible Gambling http://www.ncrg.org/ has a wealth of current research,

information and confidential services for gambling and problem gambling research. Additional resources can be found at http://www.rgrc.org/en**.**

Thank you for participating in this study! We greatly appreciate your participation.

Now that you know the true nature of the study, do you consent to the use of your data?
a. Yes, I consent to the use of my data.
b. No, I do not consent to the use of my data.