

# **USING ONLINE RESPONSIBLE GAMBLING TOOLS AS INTERVENTIONS FOR PREVENTING ONLINE PROBLEM GAMBLING AND IMPLICATIONS FOR OTHER ONLINE ADDICTIONS**

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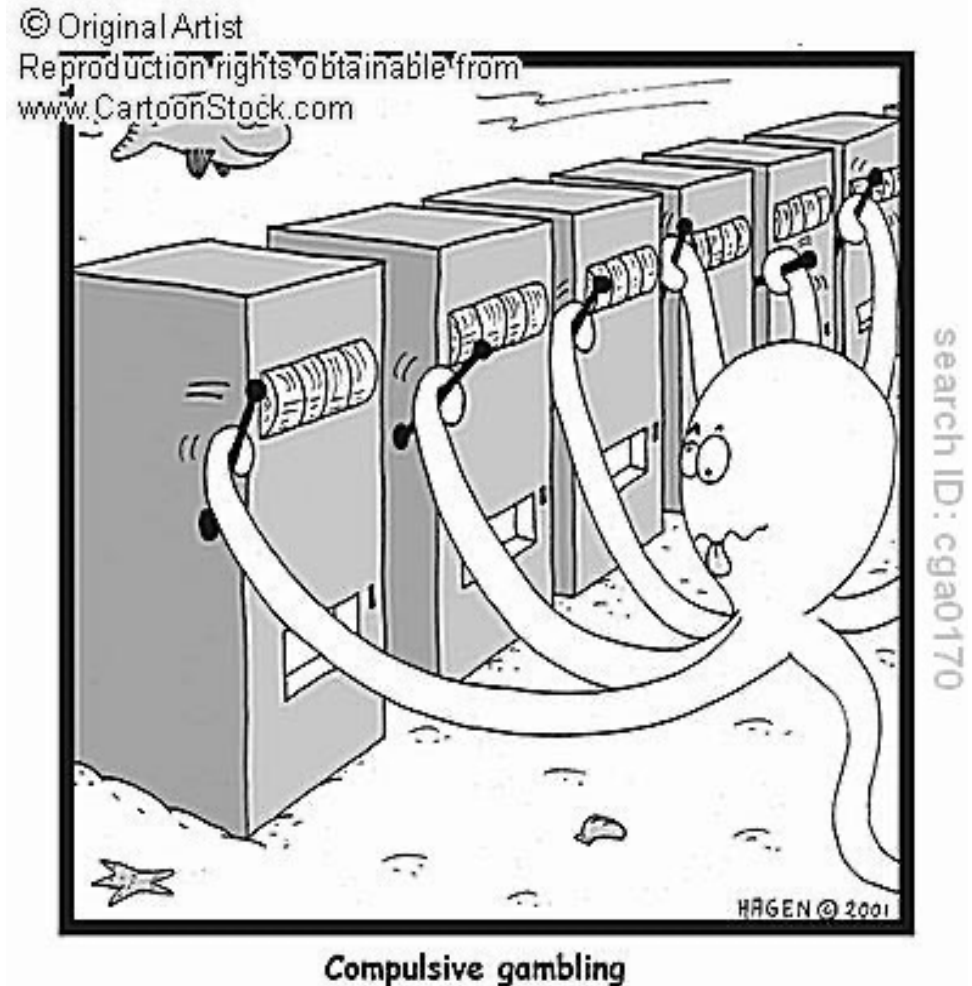
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# OVERVIEW OF THE TALK

- Brief overview of some empirical studies evaluating RG tools using tracking data (limit-setting, personalized messaging, pop-up messaging)
- Other ways to use online tracking data
- Implications for other online behaviours
- Conclusions



# ***LIMIT SETTING IN GAMBLING***

## **(Auer & Griffiths, 2013)**

- Data collected from a representative random sample of 100,000 players who gambled on the *win2day* gambling website
- During a three-month period, all voluntary time and/or money limit setting behaviour by a subsample of online gamblers ( $n=5000$ ) within this mandatory framework was tracked and recorded for subsequent data analysis.
- From the 5,000 gamblers, the 10% most intense players (as measured by theoretical loss) were further investigated.

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ORIGINAL PAPER

### **Voluntary Limit Setting and Player Choice in Most Intense Online Gamblers: An Empirical Study of Gambling Behaviour**

Michael Auer · Mark D. Griffiths

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**Abstract** Social responsibility in gambling has become a major issue for the gaming industry. The possibility for online gamblers to set voluntary time and money limits are a social responsibility practice that is now widespread among online gaming operators. The main issue concerns whether the voluntary setting of such limits has any positive impact on subsequent gambling behaviour and whether such measures are of help to problem gamblers. In this paper, this issue is examined through data collected from a representative random sample of 100,000 players who gambled on the *win2day* gambling website. When opening an account at the *win2day* site, there is a mandatory requirement for all players to set time and cash-in limits (that cannot exceed 800 € per week). During a 3-month period, all voluntary time and/or money limit setting behaviour by a subsample of online gamblers ( $n = 5,000$ ) within this mandatory framework was tracked and recorded for subsequent data analysis. From the 5,000 gamblers, the 10 % most intense players (as measured by theoretical loss) were further investigated. Voluntary spending limits had the highest significant effect on subsequent monetary spending among casino and lottery gamblers. Monetary spending among poker players significantly decreased after setting a voluntary time limit. The highest significant decrease in playing duration was among poker players after setting a voluntary playing duration limit. The results of the study demonstrated that voluntary limit setting had a specific and significant effect on the studied gamblers. Therefore, voluntary limits appear to show an appropriate effect in the desired target group (i.e., the most gaming intense players).

**Keywords** Online gambling · Responsible gambling · Social responsibility in gambling · Limit setting · Online lotteries · Online poker · Online casinos

- Voluntary spending limits had the highest significant effect on subsequent monetary spending among casino and lottery gamblers.
- Monetary spending among poker players significantly decreased after setting a voluntary time limit.
- Therefore, voluntary limits appear to show voluntary limit setting had an appropriate effect in the desired target group (i.e., the most gaming intense players).



# ***LIMIT SETTING AND GAMBLER LOYALTY***

## **(Auer, Hopfgartner & Griffiths, 2020)**


- The effect of voluntary limit-setting on player loyalty was evaluated over time using tracking data provided by *Kindred Gaming*
- Anonymized dataset of 175,818 players who had placed at least one bet or gambled at least once during January 2016 to May 2017
- The dataset comprised a 20% random sample of the total player population of *Kindred*

International Journal of Mental Health and Addiction  
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### ORIGINAL ARTICLE

#### An Empirical Study of the Effect of Voluntary Limit-Setting on Gamblers' Loyalty Using Behavioural Tracking Data



Michael Auer<sup>1</sup> · Niklas Hopfgartner<sup>1</sup> · Mark D. Griffiths<sup>2</sup> 

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#### Abstract

Online gambling has become increasingly popular over the past decade as has research using behavioural tracking (player account) data. To date, there is no study that has empirically investigated the effects of responsible gambling tools on loyalty. In the present study, the effect of voluntary limit-setting on player loyalty was evaluated over time using tracking data provided by an online gambling operator. More specifically, the authors were given access to an anonymised dataset of 175,818 players who had placed at least one bet or gambled at least once during January 2016 to May 2017 at the online gambling operator *Kindred*. The average age of the players was 31 years, and overall 18,484 of the players were female (10.5%). The dataset comprised a 20% random sample of the total player population of *Kindred*. In each of ten playing intensity groups, the percentage of active players in the first quarter of 2017 was higher in the group of players who had set voluntary money limits in the first quarter of 2016 compared to players that did not (suggesting players that set voluntary spending limits are more loyal compared to those who do not). The implications of these findings are discussed.

**Keywords** Online gambling · Internet gambling · Responsible gambling · Problem gambling · Behavioural tracking · Limit-setting



- Sample was divided into ten playing intensity groups based on amount of money wagered
- The percentage of active players in the first quarter of 2017 was higher in the group of players who had set voluntary money limits in the first quarter of 2016 compared to players that did not
- Suggests players that set voluntary spending limits are more loyal compared to those who do not).



# ***LIMIT-SETTING AND LONG-TERM SPENDING***

## **(Auer, Hopfgartner & Griffiths, 2020)**

- Study examined whether setting of voluntary monetary limits had any effect on online gambling expenditure over a one-year period
- Study comprised 49,560 players provided by *Kindred*
- Results showed among most gambling-intense players, those who set voluntary limits gambled significantly less money a year later compared with those who had not.
- Those with high gambling intensity more likely to be problem gamblers - limit-setting appears to be an effective responsible gambling tool

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### The Effects of Voluntary Deposit Limit-Setting on Long-Term Online Gambling Expenditure

Michael Auer, PhD,<sup>1</sup> Niklas Hopfgartner, MSc,<sup>1</sup> and Mark D. Griffiths, PhD<sup>2</sup>

#### Abstract

Online gambling has become increasingly popular but for a small minority of players can be problematic (~5 percent). Many socially responsible online gambling operators have introduced responsible gambling tools to help their players stay in control of their gambling such as monetary limit-setting (in which gamblers predetermine the amount of money they want to spend per day/week/month on gambling). Despite the widespread introduction of such tools, few studies have evaluated their efficacy. This study comprised of an anonymized dataset of 49,560 players who had placed at least one wager with the online gambling operator *Kindred*. The primary aim of the study was to examine whether the setting of voluntary monetary limits (independent variable) had any effect on online gambling expenditure over a 1-year period (dependent variable). The secondary aim was to examine whether there were any differences in gambling expenditure by gender, age, or gambling intensity ("gambling intensity" was simply operationalized as the total amount of money wagered during a 3-month period). Results demonstrated that there were no differences with regard to age and gender but that among the most gambling-intense players, those who had voluntarily set limits gambled significantly less money a year later compared with those who had not. Given that those individuals with the highest gambling intensity are more likely to comprise problem gamblers, limit-setting appears to be an effective responsible gambling tool because the top 10 percent of most gambling-intense individuals in this study significantly reduced their gambling expenditure over a 1-year period.

**Keywords:** online gambling, Internet gambling, responsible gambling, problem gambling, behavioral tracking, limit-setting

#### Introduction

ONLINE GAMBLING HAS become increasingly popular since its inception in the mid-1990s. Due to increasing legalization in many countries, it has been estimated that the market will grow to \$279.8 billion USD by 2023.<sup>1</sup> Generally, the types of games offered on online gambling websites are similar to those offered in offline (i.e., land-based) gambling operators. Like individuals who engage in offline gambling, a small minority of online gamblers can also develop problematic behavior (~5 percent are problem gamblers endorsing three or more of the DSM-IV criteria for pathological gambling<sup>2</sup>) based on findings using nationally representative samples.<sup>3-5</sup> Problem gambling can lead to a variety of consequences that can compromise relationships, disrupt education/occupation (depending upon age), affect mental health, and/or lead to criminal activity to fund the activity.<sup>6</sup>

Consequently, many socially responsible gambling operators now offer their clientele a variety of responsible gambling tools<sup>7</sup> to help players keep in control of the amount of time and money they spend online, and include tools such as limit-setting (allowing gamblers to predetermine the amount of time and/or money they want to spend in a given time period [day/week/month]), self-exclusions (allowing gamblers to exclude themselves from gambling on the website for predetermined amounts of time), pop-up messaging (providing in-play information as to how much time and/or money gamblers have spent in session), and personalized messaging (providing information to gamblers about various aspects of their gambling behavior and/or recommendations about what they can do to stay in control).<sup>7,8</sup>

One of the most popular types of responsible gambling tools is limit-setting.<sup>7,8</sup> A recent study carried out among 50 of the world's most popular online gambling sites found that

# ***SLOTS POP-UP EMPIRICAL STUDY***

## **(Auer & Griffiths, 2015)**

- Self-appraisal feedback, normative feedback, and cognitive belief feedback, have never been empirically examined in any real-world online gambling setting.
- This study investigated the effects of a normative and self-appraisal pop-up message among online slot machine players on a real online gambling site (i.e., *win2day*)

### **Testing normative and self-appraisal feedback in an online slot-machine pop-up in a real-world setting**

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Over the last few years, there have been an increasing number of gaming operators that have incorporated on-screen pop-up messages while gamblers play on slot machines and/or online as one of a range of tools to help encourage responsible gambling. Coupled with this, there has also been an increase in empirical research into whether such pop-up messages are effective, particularly in laboratory settings. However, very few studies have been conducted on the utility of pop-up messages in real-world gambling settings. The present study investigated the effects of normative and self-appraisal feedback in a slot machine pop-up message compared to a simple (non-enhanced) pop-up message. The study was conducted in a real-world gambling environment by comparing the behavioral tracking data of two representative random samples of 800,000 gambling sessions (i.e., 1.6 million sessions in total) across two conditions (i.e., simple pop-up message versus an enhanced pop-up message). The results indicated that the additional normative and self-appraisal content doubled the number of gamblers who stopped playing after they received the enhanced pop-up message (1.39%) compared to the simple pop-up message (0.67%). The data suggest that pop-up messages influence only a small number of gamblers to cease long playing sessions and that enhanced messages are slightly more effective in helping gamblers to stop playing in-session.

**Keywords:** online gambling, responsible gambling, online slot machines, pop-up messaging, normative feedback, ecological validity, behavioral tracking, health messaging

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#### Introduction

The increasingly advanced technological environments of online gambling companies now allow for sophisticated ways of promoting responsible play among gamblers (Griffiths et al., 2009; Auer and Griffiths, 2013). The use of pop-up messages that appear on-screen while an individual is gambling on a slot machine and/or online is one way of informing players about how much time they have been playing and/or how much money they have spent. Pop-up messages are one of a range of tools that have been increasingly used by gaming operators to help encourage responsible gambling (Griffiths, 2012). Providing specific information in the form of messages to players while gambling is one way of intervening and helping gamblers that play excessively. It is believed that information that is given to people to enable behavioral change should encourage reflection as research has shown that self-monitoring changes behavior in the desired direction (e.g., Gilberts et al., 2001; Hardeman et al., 2002; Schwedes et al., 2002). However, it remains to be determined whether these pop-up interventions deliver the desired effects among the players that receive such messaging.



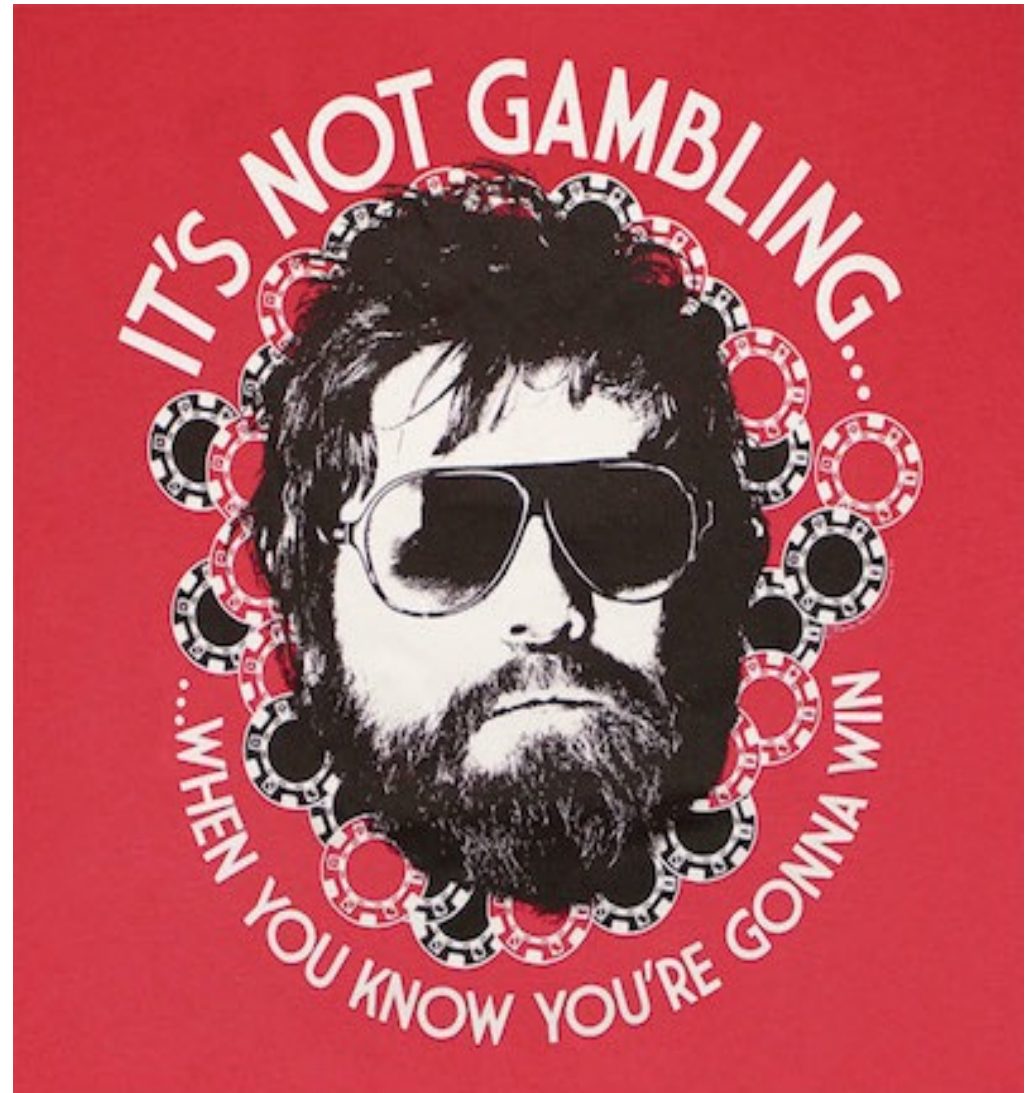
- In September 2013, the content of the *win2day* pop-up message was changed and
- New pop-up addressed self-appraisal, provided normative feedback, and addressed cognitive beliefs commonly found among gamblers.
- The new pop-up message (translated from German, the native language used on the Austrian site) reads:
- *"We would like to inform you, that you have just played 1,000 slot games. Only a few people play more than 1,000 slot games. The chance of winning does not increase with the duration of the session. Taking a break often helps, and you can choose the duration of the break"*
- The reasoning behind the messaging is as follows:

- The reasoning behind the messaging is as follows:
- **"We would like to inform you, that you have just played 1,000 slot games":** This objectively informs players about the behavior they engaged in.
- **"Only a few people play more than 1,000 slot games":** This provides normative feedback. Only 1.5% of playing sessions exceeds 1,000 consecutive slot games
- **"The chance of winning does not increase with the duration of the session":** This addresses a common misbelief among gamblers (i.e., the gamblers' fallacy).
- **"Taking a break often helps, and you can choose the duration of the break":** This provides advice and leaves the decision up to the player and is in line with the techniques of motivational interviewing (*Millner & Rollnick, 1991*)

- Accessed two representative random samples of 800,000 sessions before and after the pop-up message was changed.
- The total dataset comprised 1,600,000 game sessions that contained at least one slot game (70,000 gamblers).
- We hypothesized that the changed message content would lead to an increase in gamblers terminating their gambling session after playing 1,000 consecutive slot games compared to the previous message (*i.e.*, Auer et al, 2014).

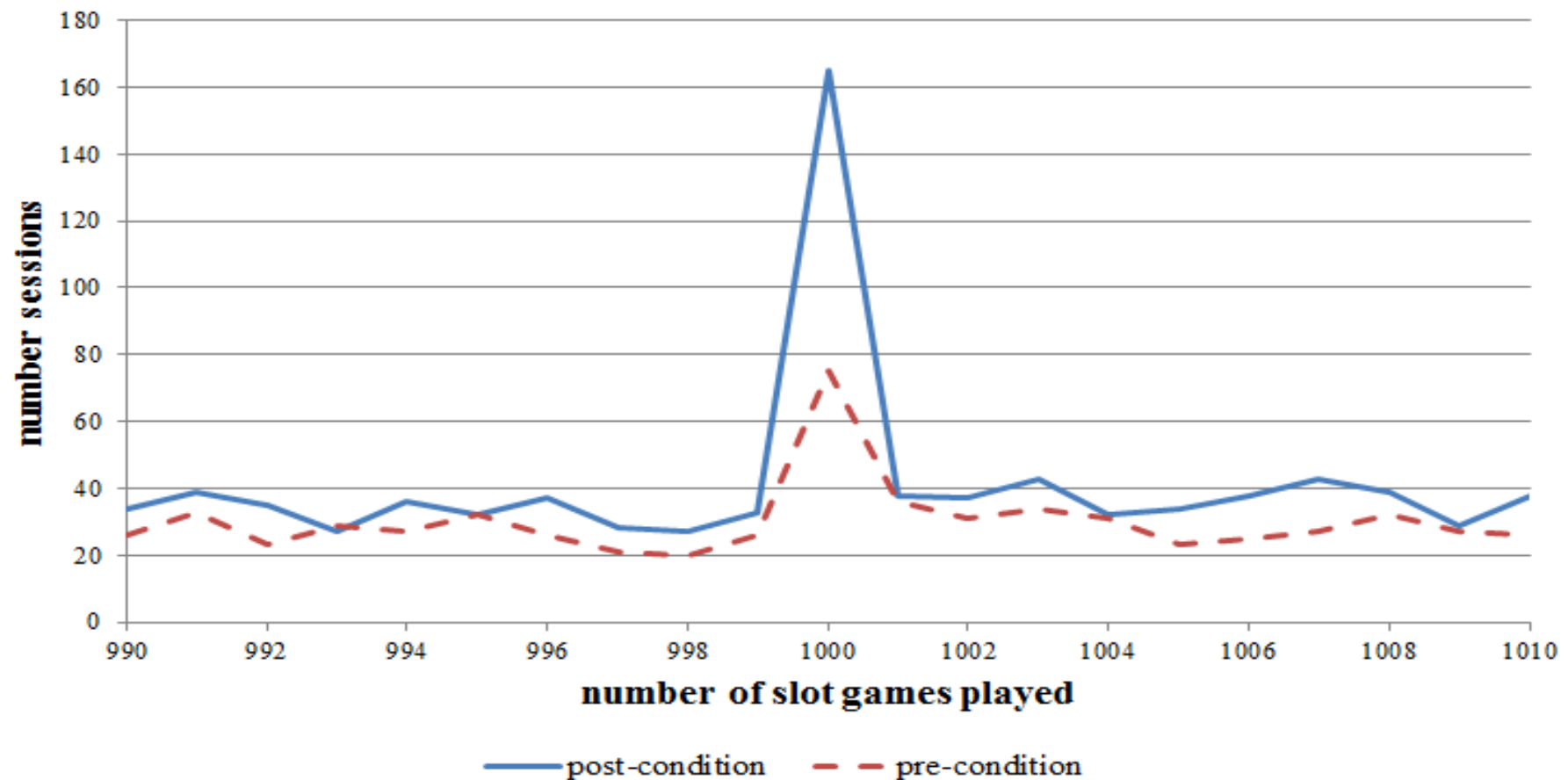


- Of the 11,232 sessions that lasted at least 1,000 games prior to the pop-up message change, 75 sessions immediately terminated after the simple pop-up message was shown (0.67%).
- After the new pop-up was introduced, 169 sessions (of 11,878) immediately terminated when the pop-up message was shown at 1,000 consecutive slot games (1.39%).





Number of sessions ended between 990 and 1,010 slot games comparing simple pop-up message (pre-condition) and enhanced pop-up message (post-condition)



# PERSONALISED FEEDBACK STUDY 1

## (Auer & Griffiths, 2015)

- Study evaluated the effectiveness of *mentor* (a responsible gambling tool) among 1,015 online gamblers at a European online gambling site
- Compared their behavior with matched controls ( $n=15,216$ ) on the basis of age, gender, playing duration, and theoretical loss.



### The use of personalized behavioral feedback for online gamblers: an empirical study

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Over the last few years, online gambling has become a more common leisure time activity. However, for a small minority, the activity can become problematic. Consequently, the gambling industry has started to acknowledge their role in player protection and harm minimization and some gambling companies have introduced responsible gambling tools as a way of helping players stay in control. The present study evaluated the effectiveness of *mentor* (a responsible gambling tool that provides personalized feedback to players) among 1,015 online gamblers at a European online gambling site, and compared their behavior with matched controls ( $n = 15,216$ ) on the basis of age, gender, playing duration, and theoretical loss (i.e., the amount of money wagered multiplied by the payout percentage of a specific game played). The results showed that online gamblers receiving personalized feedback spent significantly less time and money gambling compared to controls that did not receive personalized feedback. The results suggest that responsible gambling tools providing personalized feedback may help the clientele of gambling companies gamble more responsibly, and may be of help those who gamble excessively to stay within their personal time and money spending limits.

**Keywords:** responsible gambling, player tracking, problem gambling, harm minimization, player protection

#### Introduction

In recent years, online gambling has become a more common leisure time activity. Data from 2010 British Gambling Prevalence Survey reports that 14% of the population gambled on the internet in the past year (Wardle et al., 2011a). According to Griffiths (2003), there are a number of situational and structural characteristics that make online gambling potentially risky for susceptible and

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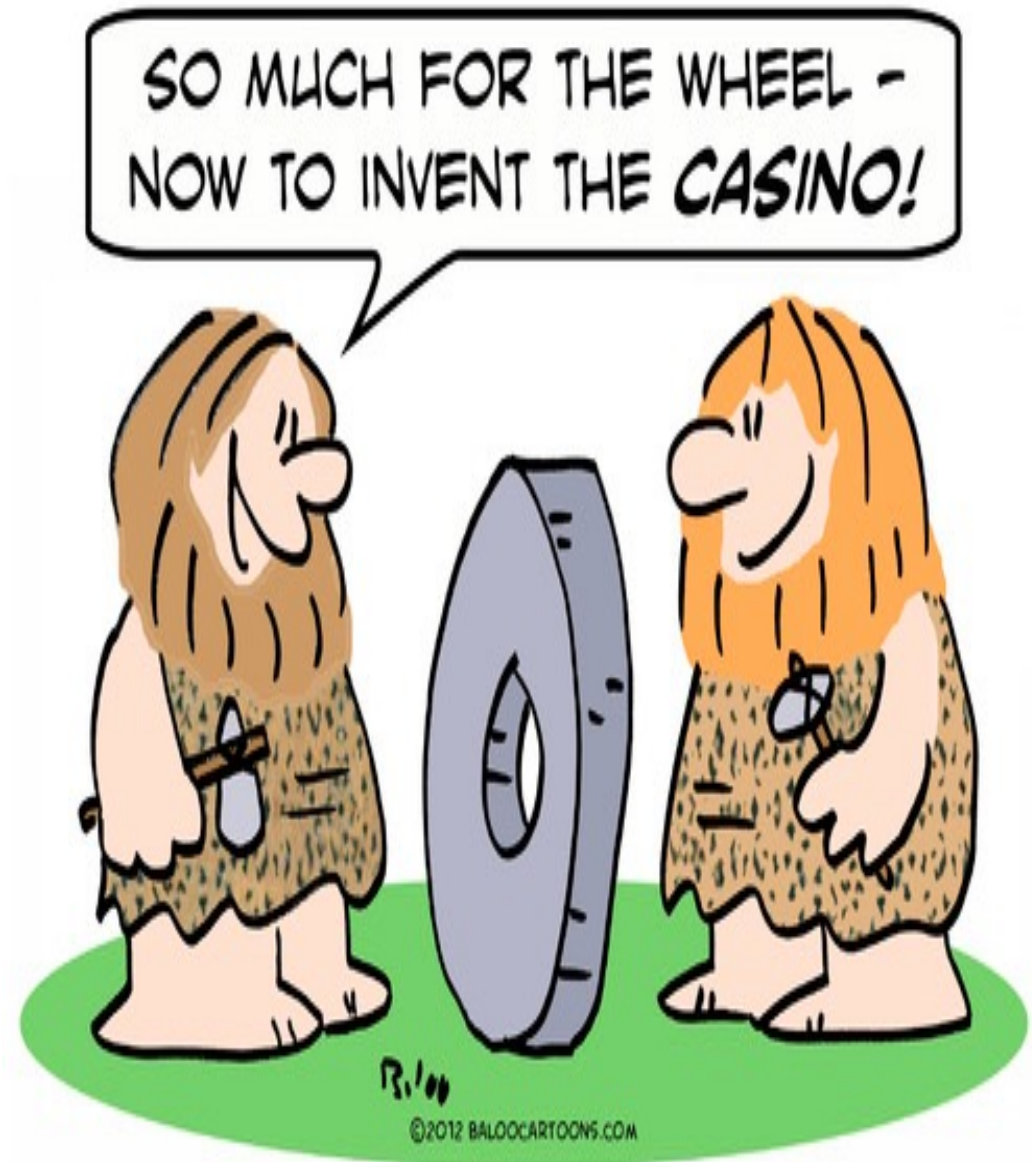
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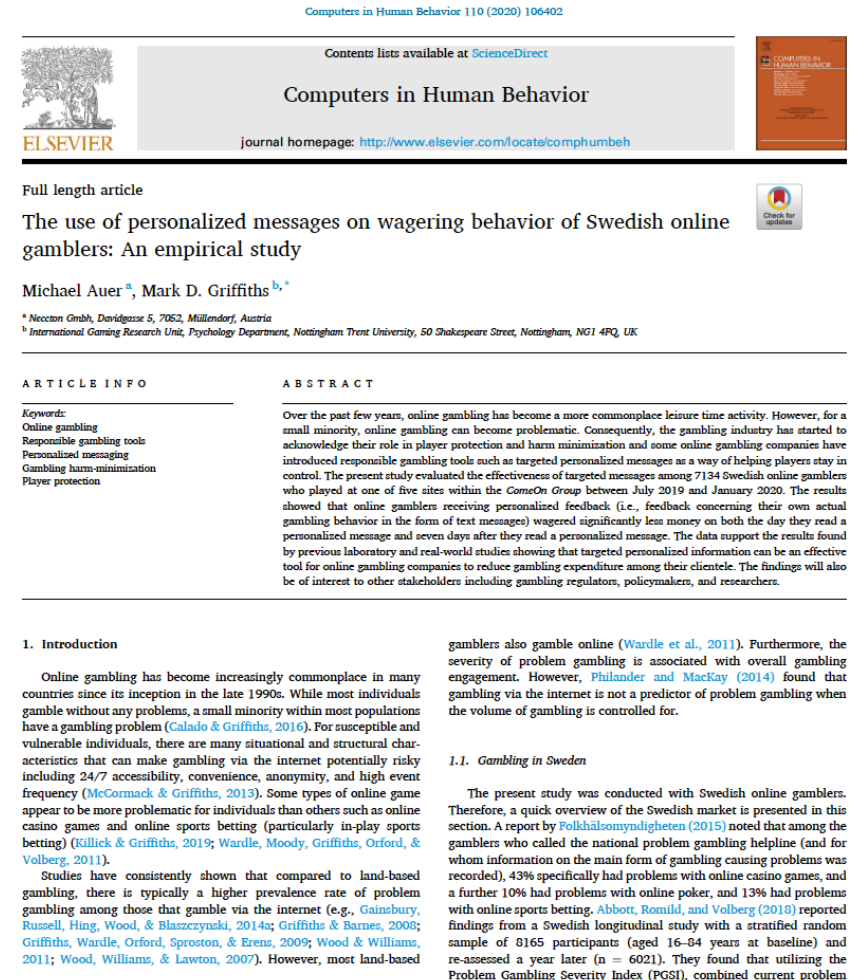
- The results showed that online gamblers receiving personalized feedback spent significantly less time and money compared to controls.
- The results suggest that responsible gambling tools providing personalized feedback may help the clientele of gambling companies gamble more responsibly
- May be of help those who gamble excessively to stay within their personal time and money spending limits.



# PERSONALISED FEEDBACK STUDY 2

## (Auer & Griffiths, 2020)

- Study evaluated the effectiveness of targeted messages among 7,134 Swedish online gamblers (*ComeOn Group*) - July 2019 to January 2020.
- Results showed that online gamblers receiving personalized feedback (i.e., feedback concerning their own actual gambling behavior in the form of text messages) wagered significantly less money on both the day they read a personalized message and seven days after they read a personalized message.





# IDENTIFTING PROBLEM GAMBLING ONLINE

- Different gambling activities might have different markers of gambling harm.
- We compared online casino players and online sports bettors via predictive modelling using behavioural tracking data (Ukhov, Bjurgert, Auer & Griffiths, 2020).
- Objective was to identify and quantify both common and distinct markers that are characteristic to casino and sports problem gamblers.

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ORIGINAL PAPER



## Online Problem Gambling: A Comparison of Casino Players and Sports Bettors via Predictive Modeling Using Behavioral Tracking Data

Ivan Ukhov<sup>1</sup> · Johan Bjurgert<sup>1</sup> · Michael Auer<sup>2</sup> · Mark D. Griffiths<sup>3</sup>

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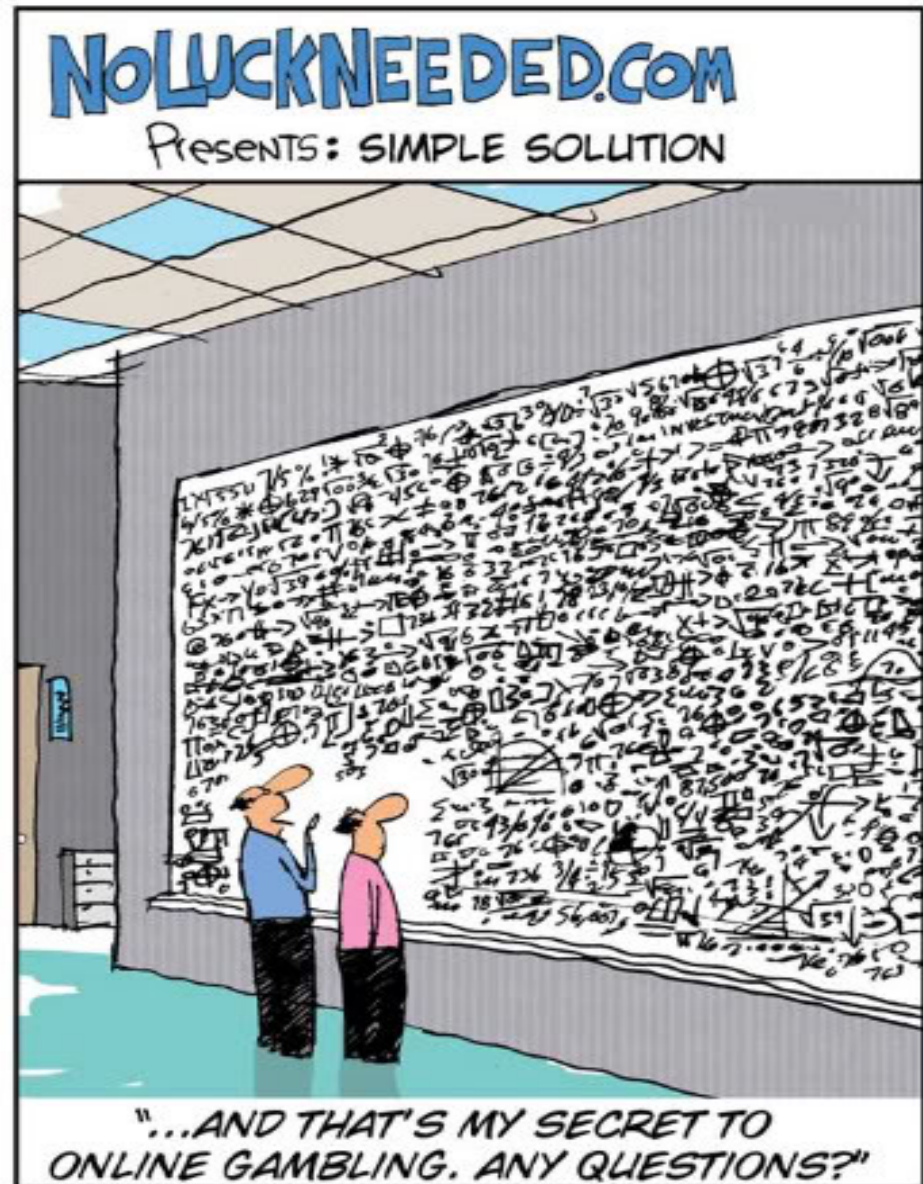
### Abstract

In this study, the differences in behavior between two groups of online gamblers were investigated. The first group comprised individuals who played casino games, and the second group comprised those who bet on sports events. The focal point of the study was on problem gambling, and the objective was to identify and quantify both common and distinct traits that are characteristic to casino and sports problem gamblers. To this end, a set of gamblers from the gaming operator *LeoVegas* was studied. Each gambler was ascribed two binary variables: one separating casino players from sports bettors, and one indicating whether there was an exclusion related to problem gambling. For each of the four combinations of the two variables, 2500 gamblers were randomly selected for a thorough comparison, resulting in a total of 10,000 participants. The comparison was performed by constructing two predictive models, estimating risk scores using these models, and scrutinizing the risk scores by means of a technique originating from collaborative game theory. The number of cash wagers per active day contributed the most to problem-gambling-related exclusion in the case of sports betting, whereas the volume of money spent contributed the most to this exclusion in the case of casino players. The contribution of the volume of losses per active day was noticeable in the case of both casino players and sports bettors. For casino players, gambling via desktop computers contributed positively to problem-gambling-related exclusion. For sports bettors, it was more concerning when the individual used mobile devices. The number of approved deposits per active day contributed to problem-gambling-related exclusion to a larger extent for sports bettors than casino players. The main conclusion is that the studied explanatory variables contribute differently to problem-gambling-related exclusion among casino players and sports bettors.

- Each gambler was ascribed two binary variables (casino player vs. sports bettor; problem gambling exclusion vs. no exclusion).
- 2500 gamblers were randomly selected for a thorough comparison, resulting in a total of 10,000 participants.
- The volume of losses per active day noticeably contributed to problem gambling-related exclusion for both casino players and sports bettors.



- In sports gambling, number of cash wagers per active day and gambling via mobile devices contributed the most to problem gambling-related exclusion
- In casino gambling, the volume of money spent and gambling via a desktop computer contributed most to problem gambling-related exclusion
- In short, our study showed that there are different behavioural predictors for problem gambling-related exclusion among casino gamblers and sports bettors.





# TRACKING DATA TO EXAMINE GAMBLING AND ALCOHOL-SERVING VENUES

(Leino, Molde, Griffiths et al., 2017)

- Study examined relationship between gambling behavior in alcohol-serving venues (ASVs) and non-alcohol serving venues (NASVs).
- The sample comprised 1452 observations of 726 individuals using player card data
- In-session analysis showed that gamblers staked less money in ASVs than in NASVs but lost more money in ASVs than in NASVs.
- Gamblers appear to be more willing to take more risk in ASVs compared to NASVs.

ADDICTION RESEARCH & THEORY, 2017  
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## ORIGINAL ARTICLE

### Gambling behavior in alcohol-serving and non-alcohol-serving-venues: a study of electronic gaming machine players using account records

Tony Leino<sup>a</sup>, Helge Molde<sup>a</sup>, Mark D. Griffiths<sup>b</sup>, Rune A. Mentzoni<sup>c,d</sup>, Dominic Sagoe<sup>c</sup> and Ståle Pallesen<sup>c</sup>

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#### ABSTRACT

**Aim:** Contextual factors, such as venue characteristics appear to influence gambling behavior. However, few studies have compared the relationship between gambling behavior in alcohol-serving venues (ASVs) and non-alcohol serving venues (NASVs). The aim of the study was to examine individual gambling behavior in ASVs and NASVs.

**Method:** A repeated-measures design was used to examine individual gambling behavior in ASVs and NASVs covering a month. The sample comprised 1452 observations of 726 individuals (25.2% female). A quantile regression model was conducted to examine individual differences in gambling behavior (number of days, sessions, bets made, stake, time spent, money lost, and average bet size) across ASVs and NASVs. Analyses were broken down by gambler category (those that reached legal mandatory spending limits and those that did not) as well as on time frame (overall gambling behavior and average in-session gambling behavior).

**Results:** Individuals gambled regularly in NASVs and occasionally in ASVs. Compared to NASVs, in-session gambling behavior was more variable in ASVs. In-session analysis showed that non-limit reaching gamblers staked less money in ASVs than in NASVs but lost more money in ASVs than in NASVs. Limit reaching gamblers showed no differences in gambling behavior across venues.

**Conclusions:** The findings show that in-session gambling behavior is more variable in ASVs compared to NASVs regardless of gambler category. Non-limit reaching gamblers may be more sensitive to contextual factors than limit reaching gamblers and appear to be more willing to take more risk in ASVs compared to NASVs. The contextual implications are discussed.

#### ARTICLE HISTORY

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#### KEYWORDS

Contextual characteristics; gambling venues; gambling behavior; account-based gambling data; repeated measures; alcohol

## Introduction

Contextual factors, such as venue and structural game characteristics appear to influence gambling behavior (Parke & Griffiths 2007; Marshall 2009; Hing & Haw 2010; Young et al. 2012). It is well established that density and proximity of gambling venues are positively associated with gambling participation and gambling problems (Abbott 2007; Ministry of Health 2008). Moreover, it is assumed that gambling in diffused sites (i.e. venues where gambling is not the main activity within the site) is less intense than gambling within concentrated sites (i.e. venues where gambling is the primary activity of the site) (Reith 1999).

However, less is known about the relationship between type of venue, venue characteristics, and gambling behavior (Hing & Haw 2010; Young et al. 2012). As all gambling venues differ, the individual has the opportunity to choose to gamble in a multitude of different settings, such as casinos, bingo halls, arcades, betting shops, clubs, and pubs. As such, the selection of a specific venue over another might be related to different gambling motives (Thorne et al. 2016) that may subsequently influence gambling behavior. In line with the proposition that structural game characteristics

might influence gambling motives and gambling behaviors (Parke & Griffiths 2007), venue characteristics may also have an additional effect on gambling behavior (Griffiths & Parke 2003; Markham et al. 2012). Consequently, the relationship between venue characteristics and gambling behavior merits further research (Hing & Haw 2010; Young et al. 2012).

The unique characteristics of a venue have been associated with both choice and popularity of the venue (Hing & Haw 2010). The attractiveness of a gambling venue is positively associated with hospitality factors, safety and secure surroundings, atmospheric features (e.g. décor, color, lighting, temperature, floor layout, seating comfort, noise level, ceiling height, etc.), the availability of low-denomination electronic gaming machines, low entry costs, and social opportunities (Griffiths 2009; Hing & Haw 2010). The size of a venue appears to influence both those seeking out the venue and the gambling behavior. Large venues (casinos and clubs in shopping centers) have been associated with a higher proportion of problem gamblers (PGs) compared to small venues. Furthermore, individuals are more likely to gamble on EGMs and are more prone to long gambling sessions in casinos compared to other venues (Markham et al. 2012;



# TRACKING DATA TO EXAMINE GAMBLING AND VENUE SIZE (Sagoe, Pallesen, Griffiths et al., 2017)

- Study examine gambling behaviour in gambling venues venues with one terminal; 2–5 terminals; 6–10 terminals; 11–16 terminals).
- Gambling data comprised 153,379 observations within 93,034 individual gamblers
- Venues with two or more terminals were associated with gamblers placing more bets, and spending more time and money per session.
- However, gamblers had higher losses (albeit small) in venues with one terminal compared to venues with 2–5 terminals.



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## Does Individual Gambling Behavior Vary across Gambling Venues with Differing Numbers of Terminals? An Empirical Real-World Study using Player Account Data

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Research examining gambling behavior via experiments, self-report, and/or observation presents many methodical challenges particularly in relation to objectivity. However, the use of player account-based gambling data provides purely objective data. Based on this real-world data, the primary aim of the present study was to examine gambling behavior in gambling venues with different numbers of gambling terminals (i.e., venues with one terminal; 2–5 terminals; 6–10 terminals; 11–16 terminals). Player account-based gambling data aggregated over a year (2015) amounting to 153,379 observations within 93,034 individual gamblers (males = 74%; mean age = 44.1, *SD* = 16.4 years) were analyzed. Gambling frequency was highest in venues with 2–5 terminals (54.5%) and lowest in venues with 11–16 terminals (1.6%). Approximately half of the sample (52.5%) gambled in only one venue category, with the majority (81.5%) preferring venues with 2–5 terminals present. Only 0.8% of the sample gambled in all four venue categories. Compared to venues with one terminal, venues with two or more terminals were associated with gamblers placing more bets, and spending more time and money per session. However, gamblers had higher losses (albeit small) in venues with one terminal compared to venues with 2–5 terminals. No differences in net outcome were found between venues with one terminal and those with 6–10 and 11–16 terminals. Overall, the present study demonstrates that in the natural gambling environment, gambling behavior is reinforced in venues with multiple terminals.

**Keywords:** casino environment, electronic gaming machines, gambling environment, gambling terminals, gambling venue, social facilitation

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## Article

# Understanding Online Voluntary Self-Exclusion in Gambling: An Empirical Study Using Account-Based Behavioral Tracking Data

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**Abstract:** Online gambling has created a need for better behavioral tracking as a way to enhance responsible gaming for consumers that have used voluntary self-exclusion programs. However, some scholars have argued that self-exclusion is not. This present study examined this issue using data from a large, national, present study examined this issue have engaged in VSE. The participants (n = 7732), and customer reported gambling addiction (n = 1,044) only had gambling activity for less than seven days of account registration. Results indicated that individuals different to be treated as a homogeneous group for problem gambling. The findings suggest that the current policy makers because it provides a way to track technologies, which

**Keywords:** gambling operators; gambling; consumer protection

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## FULL-LENGTH REPORT

# The effects of a mandatory play break on subsequent gambling among Norwegian video lottery terminal players

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## 1. Introduction

Through the internet, an activity that can be done any time and anywhere, the Prevalence Survey, it was released online [2] and had increasing popularity. Gambling has increased in popularity, the possibility of offering more services, which can in turn lead to expanded quickly but gambling tended to lag behind. Due to the fact that gambling is not across national borders. While gambling, many countries have Subsequently, there is a high local authority imposes licensing, borderless gambling possible

It is understandable that concerning it may be because it net gambling is often seen ne

**Background and aims:** Responsible gambling (RG) tools and initiatives have been introduced by social RG operators as a means to help prevent problem gambling. One such initiative is the use of mandatory play breaks (i.e., forced session terminations). Recommendations by RG experts for gambling operators to implement mandatory play breaks appear to be intuitively sensible but are not evidence-based. **Methods:** The present authors were given access by the Norwegian gambling operator *Norsk Tipping* to data from 7,190 video lottery terminal (VLT) players who gambled between January and March 2018. This generated 218,523 playing sessions for further analysis. Once a gambling session reaches a 1-hr play duration, a forced session termination of 90 s comes into effect. This study evaluated the effect of mandatory play breaks on subsequent gambling. **Results:** Compared to similar sessions identified using a matched-pairs design, results demonstrated that there was no significant effect of the forced termination regarding the amount of money staked in the subsequent gambling session or on the time duration of the subsequent gambling session. **Conclusions:** Although expenditure was higher in the subsequent 24 hr for terminated sessions, this is likely due to higher intensity gamblers being more likely to trigger mandatory breaks. Implications of these findings are discussed.

**Keywords:** gambling, responsible gambling, responsible gambling tools, problem gambling, mandatory play breaks, forced session termination

# Self-Reported Losses Versus Actual Losses in Online Gambling: An Empirical Study

Michael Auer<sup>1</sup> · Mark D. Griffiths<sup>2</sup>

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liture .



# IMPACT OF COVID-19 ON ONLINE GAMBLING

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## ORIGINAL ARTICLE



### Gambling Before and During the COVID-19 Pandemic Among European Regular Sports Bettors: An Empirical Study Using Behavioral Tracking Data

Michael Auer<sup>1</sup> · Doris Malischnig<sup>2</sup> · Mark D. Griffiths<sup>3</sup>

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#### Abstract

The novel coronavirus-2019 (COVID-19) pandemic has had major impacts on most societies worldwide including the cancelation and postponement of sports events. This has had a major impact on the sports betting industry. The present study is first to investigate the behavior of a sample of online sports bettors before and after COVID-19 measures were put in place by European governments. The authors were given access to the player data by a large European online gambling operator comprising players from Sweden, Germany, Finland, and Norway. The behavioral change of the sports bettors before March 7 and after March 7 (2020) was computed. All sports bettors who placed at least one wager in at least 5 calendar weeks out of the 10 possible calendar weeks between January 1 and March 7 ( $n = 5396$ ) were included in the analysis. Results showed statistically significant reductions among sports bettors wagering in online casinos. This indicates that there was no conversion of money spent from sports betting to online casino games, at least for this particular online gambling operator. The findings suggest that there was a significant decrease in the amount of money wagered by sports bettors during the COVID-19 pandemic (compared with before it) and that sports bettors did not switch to playing more online casino games and that there was also a significant reduction in playing online casino games among sports bettors.

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## ORIGINAL ARTICLE



### Gambling Before and During the COVID-19 Pandemic Among Online Casino Gamblers: An Empirical Study Using Behavioral Tracking Data

Michael Auer<sup>1</sup> · Mark D. Griffiths<sup>2</sup>

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#### Abstract

Gambling, like many other leisure activities, has been greatly affected by the novel coronavirus disease 2019 (COVID-19) pandemic. The present study investigated the behavior of a sample of online casino gamblers before and after the COVID-19 pandemic was announced in March 2020. The authors were given access to behavioral tracking data of a representative sample of 133,286 online casino gamblers by a large European online gambling operator with several online casino Swedish licenses. Online casino gambling activity utilizing daily cross-sectional data was examined over a 5-month period from January 1 to May 31 (2020). Results indicated that the (i) number of active online casino gamblers significantly increased over time, (ii) mean average amount of money bet by online casino gamblers daily significantly decreased over time, (iii) mean average daily bet by online casino gamblers at both the 90th and 99th percentiles significantly decreased over time, and (iv) mean average daily bet by online casino gamblers at the 10th and 25th percentiles significantly increased over time. The analysis also indicated that the number of high-risk players significantly decreased during the 5-month study period. While many different groups have claimed that gambling and problem gambling would increase during the pandemic due to more time being spent at home, evidence from the present study suggests that this is not the case because gambling intensity decreased, at least among Swedish gamblers.

**Keywords:** COVID-19 · Gambling · Online gambling · Casino gambling · Behavioral tracking

# ***IMPLICATIONS FOR OTHER PROBLEMATIC ONLINE BEHAVIORS***

- Tools used by gambling operators could be used by gaming operators and social media providers (e.g., limit-setting, personalized messaging, mandatory breaks)
- Social media operators have already implemented some of these tools but not the video gaming industry
- Tracking data from gaming operators and social media providers could be used to look for variables involved in excessive use
- Tracking data could be used to look at patterns of use before, during and post COVID-19 pandemic
- The simultaneous use of objective (tracking data) and subjective (self-report) methodologies may reveal new insights about online user behaviour



# CONCLUSIONS

- Behavioural tracking is an innovative method way to evaluate RG tools
- RG tools that use a player's tracking data can help some (but not all) players
- Behavioural tracking data has multiple uses
- Many of the ways that tracking data have been used could be applied to other online problem behaviours



# ***THANK YOU FOR LISTENING!***

