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Players' Preference For Losses Disguised As Wins In Keno: A Concurrent Choice Procedure

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PLAYERS' PREFERENCE FOR LOSSES DISGUISED AS WINS IN KENO:

A CONCURENT CHOICE PROCEDURE

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PLAYERS' PREFERENCE FOR LOSSES DISGUISED AS WINS IN KENO: A
CONCURRENT CHOICE PROCEDURE

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Abstract

Roughly 3% of American citizens are considered to be problem gamblers (NCPG, 2014). This compulsion can have a detrimental impact on the pathological gambler's life. One factor that has been considered to lead to this compulsive gambling is the loss disguised as a win (LDW). These LDWs have been shown to increase slot machine playing in numerous studies. However, their effect has not been studied in connection to Club Keno, which is also a highly prevalent game. In 2017 the Michigan lottery took in over $600 million in revenue from Club Keno (FGSAD, 2017). The present study sought to determine LDW preference in Club Keno, and if the effects that have been shown in slot machines are similar. It was determined that the subjects did not show a statistically significant preference for LDW Keno over non-LDW Keno.

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Chapter 1: Introduction

Introduction

Gambling comes in many platforms, and is available in all but two states in America (American Gaming Association, 2018). Commercial gambling in America generated $40 billion in revenue, and lotteries grossed over $80 billion in 2017 (AGA, 2018). The AGA (2018) breaks down gambling into the following categories: card rooms, commercial casinos, charitable games, Indian casinos, legal bookmaking, lotteries, pari-mutuel wagering, and advance deposit wagering. For most, gambling is just an entertaining activity to do on an irregular basis, however an estimated 2.7% of Americans struggle with some form of pathological or problem gambling (Casino.Org, 2018).

There have been numerous studies done on the effect of losses disguised as wins (LDW) and near misses (NM) on slot machine gambling behavior. LDW's are defined as any outcome in which at least one credit is returned but the total number of credits returned is less than the wager (Dixon, 2010). Near misses are defined as a failure to reach a goal that comes close to being successful (Reid, 1986). Both of which are conditioned reinforcers, and can have a strong effect on future gambling behavior. Many studies have been conducted to determine the effect that these reinforcers have on gambling behavior of slot machine players. All citations made in this paper follow American Psychological Association (APA) guidelines.

Literature Review

One such study on the effect of NM's and LDWs on players was conducted by

Dixon, Harrigan, Sandhu, Collins, and Fugelsang (2010). The team measured the skin

conductance responses (SCR) of players during wins, losses, and losses disguised as

wins. In the study losses were classified as when they player placed a bet and won

nothing in return, wins were classified as when the amount won was larger than the

amount bet, and losses disguised as wins were classified as when the amount returned

was less than the original bet but more than zero. They also made the distinction that the

slot machine reacts in the same loud and exciting way during both wins and LDWs.

Their goal was to show that players do indeed react the same way during both wins and

LDWs. The study measured the skin conductance responses (SCR) and heart rates of 40

novice gamblers during wins, losses, and LDWs to determine the amount of "excitement"

the player experiences in these different scenarios. The hypothesis was that the

reinforcing sights and sounds that the slot machine emits when any amount of credits are

returned during a spin (both wins and LDWs) results in increased arousal and

development of problem gambling. SCRs were measured by comparing the subjects'

level one second after the spin outcome was delivered to the highest level in the

following three seconds. This was the measurement they used to determine the effect

that the spin outcome had on the subject. The average of all of the subjects' SCR's in

each of the three categories was then calculated to determine the overall effect of the

different outcomes. To determine heart rate changes the inter-beat intervals (IBI) of the

subjects were measured from two seconds prior to presentation of the spin outcome until

six seconds following the presentation of the spin outcome during the three different categories. These IBIs were measured during each second of that nine second window. The subjects' IBIs were then averaged for each category, and then averaged across subjects for each category during each second to determine overall effect. The results showed that the means SCRs were almost identical for wins and LDWs and were lower for losses. The results also showed that mean IBIs were very similar for wins and LDWs and were slightly lower for losses.

Another study performed on the subject was conducted by Dixon, Harrigan, Graydon, and Fugelsang (2015). In this study the researchers measured the effect of using negative sounds for LDWs instead of the positive sounds that are typically emitted during a LDW. The study involved three different conditions: The standard condition, in which positive sounds occurred following both wins and LDWs; a negative condition, in which negative sounds occurred following both losses and LDWs; and a silent condition, in which LDWs were paired with silence. This study also measured heart rate changes and skin conductance responses (SCR) to determine the effect of the various conditions. The study utilized 157 subjects that were novice gamblers, and majority scored low risk on the Problem Gambling Severity Index (PGSI). The PGSI is a self-report form used to determine the likelihood of problem gambling behavior in an individual in the general population (Holtgraves, 2009). The subjects were randomly assigned to the various conditions. In the standard condition, positive sounds were emitted following both wins and LDWs, which is similar to a typical slot machine. In the negative condition, a sound

was emitted that was described as "fat and fuzzy" for one and half seconds following both LDWs and losses. In the silent condition, no sounds was emitted at all following both LDWs and losses. The spin outcomes were divided by loss, win, or LDW, and also by how many credits were awarded per spin. In this study, they collapsed the SCR and IBI findings from the three different conditions to determine the overall response to losses, wins, and LDWs. It was found that SCRs in response to losses and LDWs did not differ much, and that wins resulted in significantly higher SCRs. However, the IBI for heart rate deceleration did show that subjects responded to LDWs and wins similarly and had less of a response to losses. It was also found that in the standard condition players were more likely to mis-categorize LDWs as wins, and were also more likely to overestimate the number of times they had won. Additionally, in the negative sound condition it was found that players were more likely to appropriately categorize LDWs as losses, and to accurately estimate the number of times they had won. This study may not have been able to replicate the findings of the previous study that SCRs were similar for wins and LDWs, however they were able to show that the positive sounds emitted from the machine during LDWs are connected to players identifying them as wins instead of losses, which is noteworthy.

Leino, et. al. (2016) also performed a study on the effect of LDWs on slot machine gambling behavior. In this study they sought to determine the effect of LDWs on real gamblers in real-life settings. The experimenters hypothesized that LDWs would increase with-in game gambling persistence when compared to losses. The study utilized

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slot machine data from a gambling company, and were able to analyze individual data using player cards that are linked to personal playing accounts. This company used a program called Multix on their gaming machines, which allows players to select a number of different games on one machine. A gaming session was defined as the time between when a player selects a particular game and begins betting, and when they discontinue betting and quit the game. The games available on the Multix machines were classified as LDW or non-LDW. They then used this information to determine the influence of LDWs on future gambling behavior. It was found that the likelihood of continuing a gaming session was greater when the subject experienced a win versus a LDW, but also greater following an LDW than a loss. It was also found that the greater the win, the greater the future gambling persistence. Another important finding was that gambling persistence overall was higher on LDW games than on non-LDW games. As a result of these findings, the authors hypothesized that LDWs may have a positive impact on the development of problem gambling.

Jensen, et. al. (2013) sought to determine how novice gamblers categorize LDWs. The researchers hypothesized that mis-categorization could increase the reinforcing effect of LDWs, and potentially lead to increased gambling persistence of players. The study recruited 47 novice gamblers that were undergraduates at their respective university. The subjects were asked to play 200 spins on an actual slot machine, and had them estimate how often they won. The experimenters then compared the subjects' estimates to how many LDWs they experienced. The results showed that

the more LDWs the subjects experienced, the higher their win estimates were. It was also found that most of the subjects mis-categorized LDWs as wins, although they are by definition a loss. The authors concluded that their hypothesis was correct, and that LDWs increase the reinforcing properties of gambling, and can increase future probability of gambling.

Another study conducted by Lole, Gonsalvez, Barry, & Blaszczynski (2014) sought to determine if problematic gamblers were more sensitive to wins, and if they physiologically responded differently to wins than non-problem gamblers. They did this by also examining skin conductance responses (SCR) of problem and non-problem gamblers while they played in real world situations. The participants were asked to play on the game of their choice for as long as they desired. There were 34 non-problem gamblers and 22 problem gamblers used in the study. The results supported the hypothesis that problem gamblers would have higher SCRs than non-problem gamblers in response to wins and LDWs.

However, there is little to no research that has been done on the effect of LDWs and near misses on Club Keno gambling behavior. Club Keno is a highly popular game that is available in most bars, restaurants, and convenience/grocery stores. This game differs from electronic gaming machines (EGM) in the way that the player can select which numbers they want to bet on, and they have more control over what they play. This construct is referred to as the "illusion of control", which is defined as "gamblers engaging in a decision that has no actual bearing on the probability of winning" (Dixon,

2000). The Michigan Lottery (2018) describes keno as involving the player selecting between one and ten numbers (1-80) that they want to bet on, and during each "draw" the computer selects 20 numbers. The amount won depends on how many numbers match between the player's selection and the computer selection. However, Club Keno is similar to EGMs because the player is still betting against a computer system that offers LDWs. There are roughly 11,000 keno retailers in the state of Michigan, and in 2017 there was over $600 million dollars spent on Club Keno in Michigan (Financial Gaming Services & Accounting Division (FGSAD), 2017). Therefore, it is socially relevant that these effects be studied in relation to keno, because they have primarily been studied on slot machines in the past. The purpose of this study will be to determine if players' response allocation differs between versions of keno with and without LDWs.

Null hypothesis: There will not be a significant difference found between the players' response allocation towards the LDW and non-LDW versions of the keno game.

Alternative hypothesis: The players' response allocation will be significantly higher towards the LDW keno versus the non-LDW keno.

Chapter 2: Methods

Methods

The present study utilized a concurrent choice procedure to determine the preference of players toward LDW and non-LDW keno games. Preference was defined as the likelihood that an organism will engage with a stimulus, and was determined by measuring the players' response allocation.   The players had their choice of two keno games, one of which had the opportunity for LDW's, and the other version provided only wins or loses. Keno involves the player choosing between one and ten numbers that they want to bet on (1-80) each round and selecting how many credits he/she would like to bet, at which point the game then selects 20 numbers. The quantity of numbers that are mutually selected by the player and the game determines how much the player wins each round.

During the forced-choice phase the subjects were directed to play on each keno game for 30 continuous trials. The concurrent-choice phase allowed the players to play on the machine of their choosing for the following 100 trials. The quantity of trials spent on each machine (response allocation) was used as a measure of their preference.

Participants

There was a total of 20 participants used in the study, which were recruited from an upper Midwest American university. All participants were required to be 18 years of age or older, and sign an informed consent prior to beginning the study. The subjects were all screened for problem gambling tendencies using the South Oaks Gambling Scale (SOGS)

(Appendix 1), a demographics survey (Appendix 2), and a gambling functional

assessment (Appendix 3). The SOGS is a questionnaire used to determine an individual's

likelihood of pathological gambling behavior based on the Diagnostic and Statistical

Manual's criteria (Lesieur, 1987). Inclusion criteria required that the subjects did not

show any tendencies to be a pathological gambler, and the SOGS provides a numeric

score to determine if the subject shows a propensity towards problem gambling

behavior. According to the SOGS if a subject were to receive a score of zero that would

indicate that they do not have a problem with gambling, a score of one through four

indicates a possible potential for problem gambling, and a score of five or higher

indicates that the subject is highly probably to engage in pathological gambling. Subjects

receiving a score of zero to four were allowed to participate in the study, and any subject

with a score of five or higher would not have been allowed to participate in the study.

All of the recruits completed and passed the screenings, therefore they were then required

to sign an informed consent to participate (Appendix 4). The informed consent specified

the purpose of the study, the procedures involved, confidentiality practices, risks,

compensation, right to refuse or withdraw, and contact information of the primary

investigator.   Finally, all participants were provided a pathological gambling information

sheet (Appendix 5) following completion of the study. The purpose of which was to

ensure that if participating in the study evoked an increase in future gambling behavior

the participant would have the resources available to treat such behavior. The actual

participants' ages ranges from 19-27. 10 of them were male and 10 of them were female. All but two of them were right-handed (N=18).

Apparatus and Stimuli

For the purposes of this study modified versions of Keno were created. Every aspect of the game remained the same as original Keno, as the Michigan Lottery (2018) defines it. However, one version was designed to allow for LDWs to occur, and one version was designed to not allow LDWs to occur, while ensuring the same payout ratios, so that there was no chance for bias. Both types of Keno were presented concurrently on two separate halves of a computer screen. During the forced-choice phases, in which the players were only allowed to play one version of the game, the other game was blacked out to represent that it was not currently an option. During the concurrent choice procedure both options were available simultaneously. The computer system recorded the players' response allocation to each game type. The system also recorded how much the players bet, the numbers that were selected, what they won, and how many LDWs were provided.

Procedure

A concurrent choice procedure was utilized to determine preference for LDW versus non-LDW keno games. All participants signed informed consent and passed the SOGS screening prior to initiation of the study. Once the study began, each participant was asked to sit at the computer. When the program was initiated a message appeared on

the screen: "Thank you for participating in this study. During this part of the study you will be able to play 30 rounds on game one followed by 30 rounds on game two. You will be able to choose which numbers you want to bet on by selecting 10 different numbers (1-80). You will then choose how much you would like to bet per round by selecting 1, 2, 5, 10, or 20 credits. Once you are ready you will select the "Play" button and the round will begin. "You may begin on Keno game one." This period was considered the forced-choice phase. At this point the left side of the screen was enabled, and the right side of the screen was disabled (50% of participants), or the right side of the screen was enabled and left side of the screen was disabled (50% of participants). Additionally, for 50% of the participants that began on the left side the LDW version was played (N=5), and for 50% of those subjects it was the non-LDW version (N=5). For 50% of the participants that began on the right side it was the LDW version (N=5), and for 50% of those it was the non-LDW version (N=5). Once the subject completed 30 rounds on their respective first side it was disabled and the opposite side was enabled, which allowed them to complete 30 more rounds. Upon completing the forced-choice phase another message appeared on the screen: "Now that you have played both game you will now play for real. You will be able to play 100 rounds on the game of your choosing. Each round you may pick which game you would like to play once you have selected your numbers and placed you wager. You may begin." At this point the concurrent choice phase was initiated. Once the player read this message both sides of the screen were enabled, and the player then played 100 rounds on the game that he/she

selected each round. After the player completed all required rounds a final message was

displayed on the screen: "Thank you for your participation, you may let the research

assistant know you are done." After letting the assistant know that the study was

completed their responses were recorded and the participant was free to leave after being

provided information on problem gambling assistance.

Chapter 3: Results

Results

All participants completed the forced-choice and concurrent-choice phases (N=20).   The

response allocation of the participants was measured by the computer system to

determine preference. Twelve of the twenty participants allocated 50% or more of their

responses to the LDW version of the game. The percentage of trials that each player

allocated to the LDW Keno ranged from 1%-100% with a mean of 55.2%. A one sample

t-test was conducted to compare response allocation toward the LDW game and the

response allocation toward the non-LDW game to a 50% test value. There was not a

significant difference in the scores for the LDW ($M = 55.20$, $SD = 34.21$) and non-LDW

($M = 44.80$, $SD = 34.21$) conditions, t (19) $= 0.68$, $p = 0.51$. A Pearson's correlation was

conducted to determine if there was an effect of the forced-choice order (LDW first or

second) on preference. A significant effect was not found, r (19) $= -2.75$, $p = 0.24$.

Therefore, the null hypothesis was accepted, because a statistically significant difference

was not found ($\alpha < 0.05$).   When analyzing the SOGS scores 15 of the participants

scored zero, four of them scored one, and one of them scored two. A second Pearson's

correlation was conducted to determine if there was a relationship between the subjects'

SOGS score (M $= 0.30$, $SD = 0.57$) and their LDW preference ($M = 55.2$, $SD = 34.21$). A

significant relationship was not found, r (19) $= -0.65$, $p = 0.79$. A third Pearson's

correlation was conducted to determine if there was a relationship between the subject's

usage of the quick pick option ($M = 71.94$, $SD = 26.53$) and their LDW preference ($M =$

55.2, $SD = 34.21$).   A significant relationship was again not found, $r(19) = 0.36$, $p = 0.12$.

Chapter 4: Discussion

Discussion

The purpose of this study was to determine if the preference for LDWs that has been found exist in slot machines players would be present with keno. Players were asked to perform forced-choice trials on each of the two keno games (LDW/ non-LDW), and then were provided a concurrent choice between the two games throughout 100 rounds. Their preference was measured by their response allocation to the LDW game during the concurrent choice phase. The alternative hypothesis was that the participants would have a higher response allocation toward the LDW game than the non-LDW game. The null hypothesis was that there would not be a significant difference in the players' response allocation toward the two versions of the game. Although the results of the present study show that more than half of the subjects (N=12) showed a preference for the LDW game there was not a statistically significant difference between the players' response allocation toward the two different games. Therefore, the alternative hypothesis was rejected, and the null hypothesis was accepted.

The results of this study also do not coincide with the results of past studies that have shown players to have a preference for LDW's in other gambling games. Previous research has been done on the effect of LDW's with slot machines. Daar (2016) found a significant increase in players' response allocation toward LDW versions of the game, additionally as the LDW rate increased the response allocation increased. Leino et. al. (2016) also found that players had a higher preference for LDW's on electronic gaming

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machines with real-world gambling. The previous research proves that subjects can be sensitive to and show a preference for LDW's in regards to slot machines. However, there has not currently been any research published on the topic of LDW preference in reference to keno games.

The present study sought to determine if consistent results would be found when studying LDWs in regards to keno. Keno is a relevant topic because it is highly prevalent throughout the state of Michigan with more than 11,000 keno retailers in the state (FGSAD, 2017). However, the present study did not yield results consistent with the previous slot machine research.   There are a number of explanations for these results that should be explored in further research. One such issue is that all of the participants had little to no experience with gambling in any format, and therefore would not necessarily exhibit gambling similar to a more seasoned or problematic gambler. As previously stated 15 of the 20 participants had no experience gambling. Therefore, it stands to reason that these results would not be representative of the gambling behavior of real-world gamblers, because this group of participants has not developed the LDW as a conditioned reinforcer, which more experienced/problematic gamblers would have (Leino et. al., 2016).   Further research should study if there is a difference in the response allocation between inexperienced gamblers and experienced/problematic gamblers. Another issue with the study is that the subjects were not playing with real money.   While the idea of winning extra credit is reinforcing, if there were the potential to win/lose actual money it can be assumed that money is a substantially stronger

conditioned reinforcer than extra credit, and players would be more focused on the contingencies of their playing.

Another potential flaw with the study is that the credits did not have an explicit value associated to them. The participants were told that the amount of extra credit they earned would be dependent on how many credits they earned, but they were not told what the relationship was between game credits and how much extra credit they would earn. Cooper, Heron, and Heward (1987) explain that any type of economy has the strongest behavioral effect when the contingencies are explicitly explained, and clear values are associated with the relevant currency. Perhaps, if the credits in the game were assigned an equivalent extra credit value the participants would have been more cautious with spending them. For example, if the participant ended the session with 100 credits they were not aware of how much extra credit that would equate to. Even though they all earned five points of extra credit for participating they were not made aware of that at any point.

Another possible explanation for the difference in the present results from the results that have been found in the previous literature is that the pace of the trials was slower than the pace of trials in a standard slot machine simulation. In the present study the rate of the trials was approximately 20-30 seconds, however a slot machine spin typically lasts only a matter of seconds. The small sample size was also a limitation. A more significant effect may have been found if a large sample size was tested. A final possible justification for these results is simply that players are not sensitive to the effects of LDW when playing keno as they have been found to be in other games.

The statistical analyses that were conducted did not find a statistically significant explanation for these results either. Statistical tests were performed that looked at the relationship between the subjects' LDW preference and both the forced-choice phase order and the subjects' SOGS score. Neither of the variables were found to have a significant relationship with the subjects' preference, and therefore are not relevant explanations for the present results.

In further research, it is recommended that more experienced gamblers are utilized, because more significant results may be found. It would also be of interest to compare the gambling behavior of novice players and more experienced players to determine if there is a significant difference in their response allocation. Future research should also employ a larger sample size, because there is a higher likelihood of finding a significant result. Also, future research should adjust the speed of the round (both faster and slower) to determine if the rate of the trials has an impact on preference. It is also recommended that research be conducted on real-world players that are gambling with their own money, because such results would be more socially relevant than those of novice gamblers with no problem gambling tendencies. Another area of interest that future research may be concerned with is the use of the quick pick option. The majority of the subjects in the present study utilized the quick pick option in more than 50% of trials (N=16). Therefore, it may be of interest to determine what the subjects' LDW preference would be if there were not a quick pick option. It would be interesting to see if players have a higher response allocation toward LDW's when they are playing of their own volition instead of for a grade. Nevertheless, the concept of LDW's in keno should

be examined further to determine if keno players are indeed sensitive to their effect or
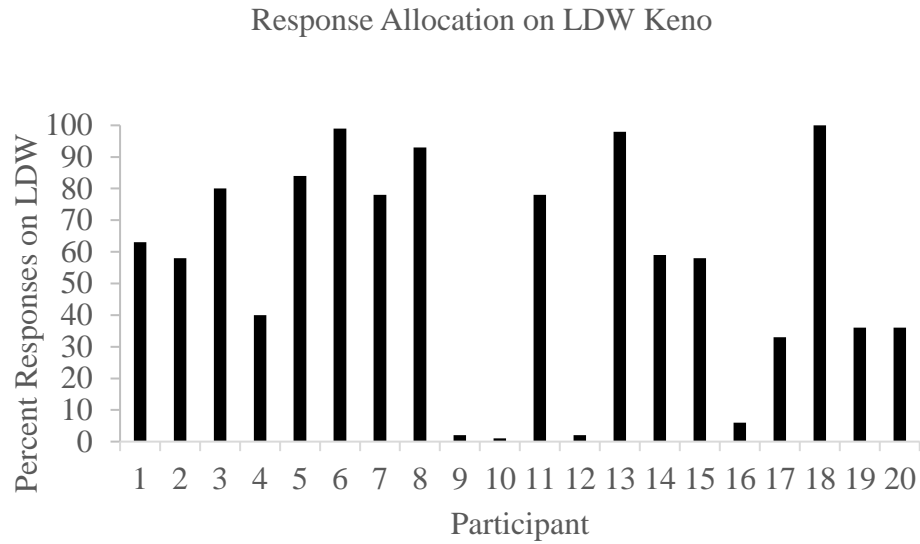
not.

Response Allocation on LDW Keno

Figure 1. Response Allocation on LDW Keno. This figure represents the percentage of

responses that each player allocated to the LDW keno instead of the non-LDW keno.

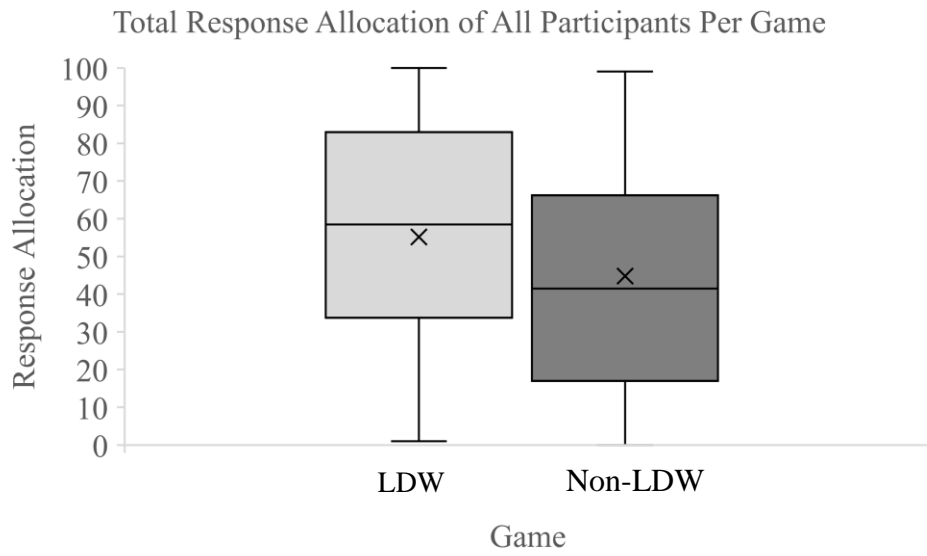Total Response Allocation of All Participants Per Game

Figure 2. Total Response Allocation of All Participants per Game. This figure represents

the minimum, maximum, and median response allocations of all participants for the

LDW and non-LDW Keno games.

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Appendixes

Appendix 1. South Oaks Gambling Screen (SOGS).

SOUTH OAKS GAMBLING SCREEN
[SOGS]

1. Please indicate which of the following types of gambling you have done in your lifetime. For each type, mark one answer: **"Not at All," "Less than Once a Week,"** or **"Once a Week or More."**

PLEASE "✓" ONE ANSWER FOR EACH STATEMENT:	NOT AT ALL	LESS THAN ONCE A WEEK	ONCE A WEEK OR MORE
a. Played cards for money			
b. Bet on horses, dogs, or other animals (at OTB, the track or with a bookie			
c. Bet on sport (parlay cards, with bookie at Jai Alai)			
d. Played dice games, including craps, over and under or other dice games			
e. Went to casinos (legal or otherwise)			
f. Played the numbers or bet on lotteries			
g. Played bingo			
h. Played the stock and/or commodities market			
i. Played slot machines, poker machines, or other gambling machines			
j. Bowled, shot pool, played golf, or some other game of skill for money			
k. Played pull tabs or "paper" games other than lotteries			
l. Some form of gambling not listed above (please specify: _____			

2. What is the largest amount of money you have ever gambled with on any one-day?

_____ Never gambled

_____ $1.00 or less

_____ More than $1.00 up to $10.00

_____ More than $10.00 up to $100.00

_____ More than $100.00 up to $1,000.00

_____ More than $1,000.00 up to $10,000.00

_____ More than $10,000.00

3. Check which of the following people in your life has (or had) a gambling problem.

_____ Father _____ Mother

_____ Brother/Sister _____ My Spouse/Partner

_____ My Child(ren) _____ Another Relative

_____ A Friend or Someone Important in My Life

4. When you gamble, how often do you go back another day to win back money you have lost?

_____ Never _____ Most of the Times I Lose

_____ Some of the Time (less than half the time I lose) _____ Every Time I Lose

5. Have you ever claimed to be winning money gambling, but weren't really? In fact, you lost?

_____ Never

_____ Yes, less than half the time I lost

_____ Yes, most of the time

6. Do you feel you have ever had a problem with betting or money gambling?

_____ No _____ Yes _____ Yes, in the past, but not now

7. Did you ever gamble more than you intended to? _____ Yes _____ No

8. Have people criticized your betting or told you that you had a problem, regardless of whether or not you thought it was true? _____ Yes _____ No

9. Have you ever felt guilty about the way you gamble, or what happens when you gamble? _____ Yes _____ No

10. Have you ever felt like you would like to stop betting money on gambling, but didn't think you could? _____ Yes _____ No

11. Have you ever hidden betting slips, lottery tickets, gambling money, IOUs, or other signs of betting or gambling from your spouse, children or other important people in your life? _____ Yes _____ No

12. Have you ever argued with people you live with over how you handle money? _____ Yes _____ No

13. (If you answered "Yes" to question 12) Have money arguments ever centered on your gambling? _____ Yes _____ No

14. Have you ever borrowed from someone and not paid them back as a result of your gambling? _____ Yes _____ No

15. Have you ever lost time from work (or school) due to betting money or gambling? _____ Yes _____ No

16. If you borrowed money to gamble or to pay gambling debts, who or where did you borrow from (check "Yes" or "No" for each):

a. From household money _____ Yes _____ No

b. From your spouse _____ Yes _____ No

c. From other relatives or in-laws _____ Yes _____ No

d. From banks, loan companies, or credit unions _____ Yes _____ No

e. From credit cards _____ Yes _____ No

f. From loan sharks _____ Yes _____ No

g. You cashed in stocks, bonds or other securities _____ Yes _____ No

h. You sold personal or family property _____ Yes _____ No

i. You borrowed on your checking accounts (passed bad checks) _____ Yes _____ No

j. You have (had) a credit line with a bookie _____ Yes _____ No

k. You have (had) a credit line with a casino _____ Yes _____ No

The SOGS may be reproduced as long as the language is used as printed and the scored items are not revised without permission of the author.

SOUTH OAKS GAMBLING SCREEN – SCORE SHEET
[SOGS]

Scores on the SOGS are determined by scoring one point for each question that shows the "at risk" response indicated and adding the total points.

Question 1	X	Not counted
Question 2	X	Not counted
Question 3	X	Not counted
Question 4		Most of the time I lose or Yes, most of the time
Question 5		Yes, less than half the time I lose or Yes, most of the time
Question 6		Yes, in the past but not now or Yes
Question 7		Yes
Question 8		Yes
Question 9		Yes
Question 10		Yes
Question 11		Yes
Question 12	X	Not counted
Question 13		Yes
Question 14		Yes
Question 15		Yes
Question 16 a		Yes
Question 16 b		Yes
Question 16 c		Yes
Question 16 d		Yes
Question 16 e		Yes
Question 16 f		Yes
Question 16 g		Yes
Question 16 h		Yes
Question 16 i		Yes
Question 16 j	X	Not counted
Question 16 k	X	Not counted

TOTAL POINTS: _____
(Maximum score = 20)

INTERPRETING THE SCORE:

0	No problem with gambling
1-4	Some problems with gambling
5 or more	Probable pathological gambler

Appendix 2. Demographics Survey.　　　　*Appendix 3*. Gambling Functional Assessment.

Demographics Survey

Age: _____

Gender
o Female
o Male

Race
o White
o Asian
o Black
o Hispanic
o Native American
o Other

Highest Education Completed?
o Some High School
o High School / GED
o Some college, no degree
o Associates degree
o Bachelor's degree
o Master's degree,
Professional or doctorate degree

Do you currently have a job?
o Yes
o No

Annual Income
o 0 - $5000
o $5000 - %10000
o $10000 - $20000
o $20,000 - $30,000
o $30,000 - $40,000
o $50,000 - $70,000
o over $70,000

Do you Currently owe any debt?
o Yes
o No

Do you currently have a job?
o Yes
o No

Marital Status
o Single
o Married
o Divorced
o Widowed

Do you have any children?
o Yes
o No

This project has been reviewed and approved by the NMU Human Subjects Research Review Committee. If you have any further questions regarding your rights as a participant in a research project you may contact Dr. Robert Winn of the Human Subjects Research Review Committee of Northern Michigan University (906-227-2300) rwinn@nmu.edu.
Any questions you have regarding the nature of this research project will be answered by the principal researcher who can be contacted as follows: Jacob Daar, (906-227-2992), jdaar@nmu.edu

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Gambling Functional Assessment

Answer the questions below using the provided scale.
Write the corresponding number next to each question.

Never	Almost Never	Seldom	Half the Time	Usually	Almost Always	Always
0	1	2	3	4	5	6

1. I tend to gamble most frequently when there is nothing else going on or I have nothing better to do. ____
2. I really enjoy the complimentary perks that come along with gambling, like free points, drinks, comp coupons, ect. ____
3. I enjoy the social aspects of gambling such as being with my friends or being around other people who are having a good time and cheering me on. ____
4. I often gamble after fighting with my spouse or significant other. ____
5. I feel more alive when I am gambling than when I am doing other types of activities. ____
6. Even if I lose, I can always count on a friend/loved one to help me through this difficult time. ____
7. I often gamble when I feel stressed or anxious. ____
8. After I gamble, I like to go out and celebrate my winnings with others. ____
9. When I gamble, I like to accumulate points at a casino so they will offer me incentives and bonuses. ____
10. I like the sounds, the lights, and the excitement that often go along with gambling. ___
11. I gamble to get a break from work or other difficult tasks. ____
12. If it were not for the ability to win a bunch of money, I would probably not gamble much at all. ____
13. I only gamble when my friends are gambling with me. ____
14. I often gamble when my friends are gambling with me. ____
15. I find myself feeling a rush, and getting excited when I gamble. ____
16. After I gamble, I often find comfort from other people to help me deal with my losses. ____
17. If I have a hard day at work, I am likely to gamble. ____
18. I gamble more often when I have been offered complimentary drinks, hotel rooms, or other items. ____
19. When I gamble I am often unaware of my surroundings. ____
20. I gamble primarily for the money that I can win. ____

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Appendix 4. Consent To Participate In A Research Study.

Northern Michigan University
CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE OF STUDY:
Evaluation of Slot Machine Gambling

INVESTIGATORS:
Jacob Daar, Ph.D., Northern Michigan University, Marquette, MI 49855

PURPOSE:
You are being asked to participate in a research study. The purpose of this completely voluntary study is to replicate and extend previous research by examining how people gamble when playing electronic gambling machines (EGMs).

SUBJECTS:
You have been asked to participate because you are over the age of eighteen and are a college student. No prior gambling experience is required.

PROCEDURES:
If you choose to voluntarily participate, you will be asked to complete several questionnaires. You will then be asked to engage with a computerized electronic gambling game.

Your participation in this study will require 1 session(s) approximately 1.5 hour(s) in length.

CONFIDENTIALITY:
Your identity will be protected to the extent allowed by the law. You will not be personally identified in any reports or publications that may result from this study. Your data will be assigned a random subject number. This information will be recorded on a coding sheet.
● We will keep this coding sheet in a file on a password-secure computer.
● The coding sheet, the only way your data can be identified, will be destroyed at the end of the study.
● Only the experimenters will have access to the coding sheet.

RISKS:
Minimal risks are expected as a result of participation in this study. Audio/Visual stimuli will be presented through a computer screen (flashing lights and sounds). If you believe that this may be a risk for you, please notify the researcher. This study will also involve activities that simulate gambling games which some might find unpleasant due to personal beliefs, past history with gambling problems, or as a result of engaging in gambling itself. If you do not wish to participate in such gambling games, please inform the researcher at this time.

COMPENSATION:
If you were recruited from a NMU course, you will earn extra credit for participation in the study. Your course instructor has determined the maximum amount of extra credit you can receive is 5 points. Your performance on the EGM tasks presented during this study will determine your actual extra credit earned,

i.e. the more points you earn on the game then the more extra credit you will earn, the less points you earn on the game then the less extra credit you will receive. All participants will receive some extra credit.

RIGHT TO REFUSE OR WITHDRAW:
You may refuse to participate or withdraw from the project at any time without penalty. If you choose to withdraw or refuse to participate in this study, extra credit for the completion of this study will not be awarded. For those that do not wish to participate in the study, an alternative extra credit assignment will be made available by your course professor.

QUESTIONS:
If you have questions in the future, contact:
Primary Investigator's Name: Jacob Daar
Department, Address: Psychological Science, New Science Facility, Rm 1117
Email: jdaar@nmu.edu
Telephone: (906-227-2992)

MY SIGNATURE BELOW INDICATES THAT I HAVE DECIDED TO VOLUNTEER AS A RESEARCH SUBJECT AND THAT I HAVE READ, I UNDERSTAND, AND I HAVE RECEIVED A COPY OF THIS CONSENT FORM. I REALIZE THAT I MAY WITHDRAW WITHOUT PREJUDICE AT ANY TIME.

_____
DATE　　　　NAME OF PARTICIPANT　　　　SIGNATURE OF PARTICIPANT

MAILING ADDRESS:

_____
DATE　　　　　　　　　　SIGNATURE OF INVESTIGATOR

Appendix 5. Pathological Gambling Information Sheet.

Pathological Gambling Information Sheet

Participation in this study will involve interaction with simulated gambling games.

You may choose to withdraw from this study now or at anytime.

Please find the below information related to problem and pathological gambling.

National Problem Gambling Hotline
http://www.ncpgambling.org/
1-800-522-4700

Gambler's Anonymous
http://www.gamblersanonymous.org/ga/
Weekly open meetings hosted in Marquette and Escanaba
Grand Rapids Hotline Number: (616) 776-0666
Michigan Hotline Number: 855-2CALLGA (855-222-5542)

Michigan Gaming Control Board (MGCB)
Disassociated Person's Listing
To be voluntarily banned from casinos licensed under the
Michigan Gaming Control and Revenue Act, please contact:
MGCB: 1-888-223-3044
http://www.michigan.gov/documents/f-DPLApplication_6013_7.pdf

Michigan Department of Health and Human Services
Gambling Treatment Service Providers by County
http://www.michigan.gov/mdhhs/0,5885,7-339-71550_2941_4871_43661_48565-181355--,00.html

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Committee. If you have any further questions regarding your rights as a participant in a research
project you may contact Dr. Robert Winn of the Human Subjects Research Review Committee of
Northern Michigan University (906-227-2300) rwinn@nmu.edu.

Any questions you have regarding the nature of this research project will be answered by the
principal researcher who can be contacted as follows: Jacob Daar, (906-227-2992),
jdaar@nmu.edu

Appendix 6. IRB Approval.

NORTHERN MICHIGAN UNIVERSITY

OFFICE OF GRADUATE EDUCATION AND RESEARCH
1401 Presque Isle Avenue
Marquette, MI 49855-5301
906-227-2300 | 906-227-2315
www.nmu.edu

MEMORANDUM

TO: Jacob Daar
Psychological Sciences Department

FROM: Robert Winn, Ph.D.
Interim Director of Research

DATE: June 25, 2018

RE: Extension for IRB HS17-841
Original IRB Approval Date: 3/27/17
New Project Expiration Date: 6/24/19
"Evaluation of Electronic Gambling Machine Play"

Your project modification to extend "Evaluation of Electronic Gambling Machine Play" has been approved under the administrative review process. Please include your proposal number (HS17-841) on all research materials and on any correspondence regarding this project.

Any changes or revisions to your approved research plan must be approved by the IRB prior to implementation.

Please submit a Project Completion Form for Research Involving Human Subjects at the conclusion of your study.

If you do not complete your project within 12 months from the date of this approval notification, you must submit a Project Renewal Form for Research Involving Human Subjects. You may apply for a one-year project renewal a maximum of four times.

All forms can be found at the NMU Grants and Research website:
http://www.nmu.edu/grantsandresearch/node/102