# MULTIVARIATE ANALYSIS

# GAMBLING ATTITUDES AND BEHAVIORS: A 2015 SURVEY OF ADULT IOWANS

Report 6 of 6

**Prepared for**
Iowa Department of Public Health
Iowa Gambling Treatment Program

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May 2016

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*The views and conclusions expressed in this report are the authors' and do not necessarily represent those of the Iowa Department of Public Health, Office of Problem Gambling Treatment and Prevention, or the University of Northern Iowa. This project was conducted under a contract between the University of Northern Iowa and the Iowa Department of Public Health.*

*This study was conducted by the Center for Social and Behavioral Research at the University of Northern Iowa under contract with and funding from the Iowa Department of Public Health, Office of Problem Gambling Treatment and Prevention.*

Citation: Park, K. & Losch M. (2016). *Gambling Attitudes and Behaviors: A 2015 Survey of Adult Iowans. Multivariate Analysis.* Cedar Falls, IA: Center for Social and Behavioral Research, University of Northern Iowa.

# MULTIVARIATE ANALYSIS[1]

# EXECUTIVE SUMMARY

GAMBLING ATTITUDES AND BEHAVIORS: A 2015 SURVEY OF ADULT IOWANS

*Prepared for the Iowa Department of Public Health, Iowa Gambling Treatment Program*
*Prepared by the Center for Social and Behavioral Research, University of Northern Iowa*

*May 2016*

## BACKGROUND & METHODOLOGY

The 2015 Survey of Public Gambling Attitudes and Behaviors Toward Gambling was conducted by the Center for Social and Behavioral Research (CSBR) at the University of Northern Iowa (UNI) and funded by the Iowa Gambling Treatment Program (IGTP) at the Iowa Department of Public Health (IDPH).

The 2015 Survey of Public Attitudes and Behaviors toward Gambling used a dual-frame (land and cell) random digit dial (DF-RRD) telephone sampling methodology. A total of 1,825 interviews (549 landline and 1,276 cell phone) were completed from September 10th, 2015 to December 8th, 2015. Similar studies were conducted in 2011 and 2013.

The primary purpose of this study was to collect data from adult Iowans to assess:

- types and frequency of gambling activities,
- prevalence of problem gambling, and
- awareness and opinions of publicly-funded gambling treatment services.

The 2015 data have been weighted in order to obtain point estimates to allow generalization to the population of non-institutionalized adults in Iowan (weighting variables included age, ethnicity, race, education, place, and telephone status).

## KEY FINDINGS

Demographic characteristics such as ethnicity, employment, and place of residence were associated with the likelihood of gambling behaviors in the past 12 months. Also, substance use such as tobacco, alcohol, and illegal drugs was related to the likelihood of gambling behaviors in the past 12 months. Likewise, positive attitudes toward gambling and past traumatic experiences were associated with the likelihood of gambling behaviors in the past 12 months.

Among those who gambled in the past 12 months, the likelihood of being an at-risk gambler was associated with income, tobacco use, prescription drug use, playing in casinos, and those who sought excitement and played to win money when gambling.

[1] This is the sixth report of a series (six in total) produced from the 2015 Survey of Public Gambling Attitudes and Behaviors toward Gambling.

# TABLE OF CONTENTS

**Executive Summary** ..... 3
Background & Methodology ..... 3
Key Findings ..... 3
SECTION F. Multivariate Analysis ..... 5
Gambled in the Past 12 Months ..... 6
At-risk Gamblers ..... 8
APPENDICES F. ..... 10
Appendix F.1. Gambled in the past 12 months ..... 10
Appendix F.2. At-risk gamblers ..... 14

# SECTION F. MULTIVARIATE ANALYSIS

The survey data were further examined using a multivariate procedure. The purpose of these analyses was to determine the strongest predictors of each outcome variable WHEN all the potential predictors were considered simultaneously. Outcomes being predicted by the analysis (i.e., dependent variables) in this section were:

1) Gambled in the past 12 months
2) At-risk gamblers in the past 12 months

Predictors included in the model were respondents' demographics, substance abuse, mental health, attitudes, and past experiences.

The procedure used in SUDAAN was RLOGISTIC to estimate the odds ratios and their confidence intervals (CI). The outcomes were all binary variables: (1) Gambling in the past 12 months; 0 = "Did not gamble", 1 = "Gambled", and (2) At-risk gambler; 0 = Not-at-risk gambler, 1 = At-risk gambler. Respondents with missing values for any variable in the model were excluded from the analysis. Each of the independent variables used in the modeling was also categorical. Reference levels for all of the independent variables can be seen in the following pages and also in Appendix F.

The independent variables were:

A) Demographics
    a. Gender
    b. Age
    c. Household income
    d. Race
    e. Ethnicity
    f. Employment
    g. Education
    h. Marital status
    i. Location of residence
B) Substance abuse, mental health in the past 30 days
    a. Tobacco use
    b. Alcohol use
    c. Illegal drug use
    d. Prescription abuse
    e. Mental health status
C) Past experiences
    a. Suffered a concussion
    b. Experienced an event that was traumatic
    c. Type of gambling (for at-risk gambling analysis)
D) Attitudes and reason for gambling
    a. Harm and benefits of gambling
    b. Reason for gambling (for at-risk gambling analysis)

The following pages show a representation of the findings. The complete set of tables with SUDAAN's outputs is in Appendix F. These tables show estimated regression coefficients, standard errors, 95% confidence intervals, *t*-test and *p*-values. The reference subgroup for all covariates in the model is indicated in the figures. It is important to note that caution should be used in generalizing the findings where wide confidence intervals are indicated (e.g., ethnicity and illegal drug use).

## GAMBLED IN THE PAST 12 MONTHS

The logistic regression focused on those who gambled in the past 12 months (an estimated 77.8% of adult Iowans). The dependent variable was coded as 1 = "Yes, gambled", and 0 = "No, did not gamble." The overall model was significant at the .0001 *p* level. The coefficient on the "gambled" variable had a Wald statistic equal to 9.82 and it was significant at the .0001 level with 26 degrees of freedom [df = 26].

The odds ratio for Hispanics or Latinos was higher than for those who were not Hispanic or Latinos. The odds ratio could be interpreted as the "distance" from the reference group value of 1. The odds ratio for Hispanic or Latinos was 3.70 with a confidence interval [CI: 1.24, 10.98] .

- This suggests that Hispanics or Latinos were 4 times more likely to have gambled in the past 12 months compared to non-Hispanics or Latinos (reference group).

The odds ratios for those who were employed were higher than for those who were not employed. The odds ratio for those who were employed was 1.75 with a confidence interval [CI: 1.29, 2.39].

- This suggests that those who were employed were about 2 times more likely to have gambled in the past 12 months compared to those who were not employed (reference group).

The odds ratios for those living on farms or rural areas and small towns (with population less than 5,000) and those living in large metro areas (with populations greater than 150,000) were least likely to gamble compared to those living in small cities (with a population between 25,000 and 150,000). The odd ratio for those living in rural areas was 0.61 with a confidence interval [CI: 0.43, 0.86]. The odds ratio for those living in metro area was 0.53 [CI: 0.33, 0.86].

- This suggests that those living in rural areas were about 39% less likely to have gambled in the past 12 months compared to those living in small cities (reference group).
- Also, adult Iowans living in metro areas were 47% less likely to have gambled in the past 12 months compared to those living in small cities (reference group).

Similarly, the odds ratio for those who used alcohol at least once in the past 30 days, used illegal drugs, experienced an event that was traumatic, or have a positive attitude toward gambling were also more likely to gamble.

- Respondents who used alcohol or those who were intoxicated were about 2 times more likely to have gambled in the past 12 months than those who did not use alcohol.
- Respondents who used illegal drugs were about 9 times more likely to have gambled in the past 12 months than those who did not use illegal drugs.
- Those with a more positive attitude toward gambling were about 2 times more likely to have gambled in the past 12 months than those who had a negative attitude.
- Finally, those who experienced an event that was traumatic in the past were about 35% more likely to have gambled in the past 12 months than those who did not have this experience.

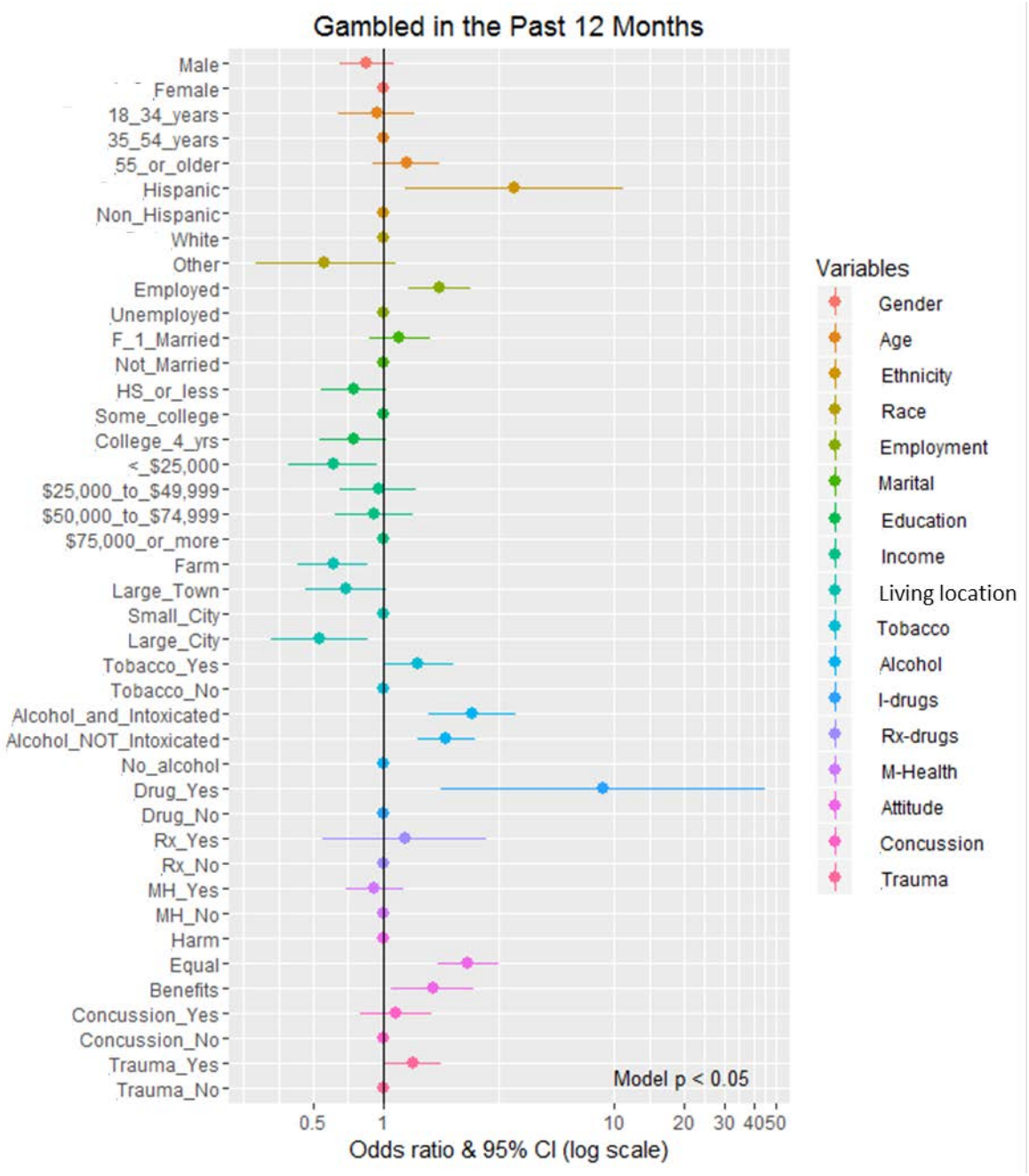


**Figure 8-1.** Representation of regression coefficients (odds ratios) modeling gambled in the past 12 months

## AT-RISK GAMBLERS

This logistic regression focused on at-risk gamblers (estimated 16.0% of adult Iowans) among those who gambled in the past 12 months. The dependent variable was coded as 1 = "Yes, at-risk gambler", and 0 = "No, at-risk gambler." The overall model was significant at a *p* level of .0001. The coefficient on the "at-risk" variable had a Wald statistic equal to 9.5 and it was significant at the .0001 level with 34 degrees of freedom [df = 34].

The odds ratio for those who used tobacco was 1.80 [CI: 1.16, 2.80]. The odds ratio for those who abused prescriptions drugs was 3.10 [CI: 1.11, 8.63]. The odds ratio for those who had mental health problems was 1.54 [CI: 1.02, 2.33].

- respondents who used tobacco were about 2 times more likely to be "at-risk" gamblers compared to those who did not use tobacco (reference group).
- respondents who abused prescription drugs were about 3 times more likely to be "at-risk" gamblers compared to those who did not abuse prescription drugs (reference group).
- respondents who had mental health problems were about 2 times more likely to be "at-risk" gamblers compared to those who did not have mental health problems (reference group).

Finally, the odds ratios for those who played in casinos was 3.25 [CI: 2.12, 4.99]. Those who gambled seeking excitement or as a challenge had an odds ratio of 2.11 [CI: 1.33, 3.36], and the odds ratio of those who gambled to win money was 1.64 [CI: 1.08, 2.47].

- respondents who played in casinos were about 3 times more likely to be "at-risk" gamblers compared to those who did not play in casinos (reference group).
- respondents who sought excitement and challenge while gambling were about 2 times more likely to be "at-risk" gamblers compared to those who did not (reference group).
- respondents who gambled to win money were about 2 times more likely to be "at-risk" gamblers compared to those who did not (reference group).

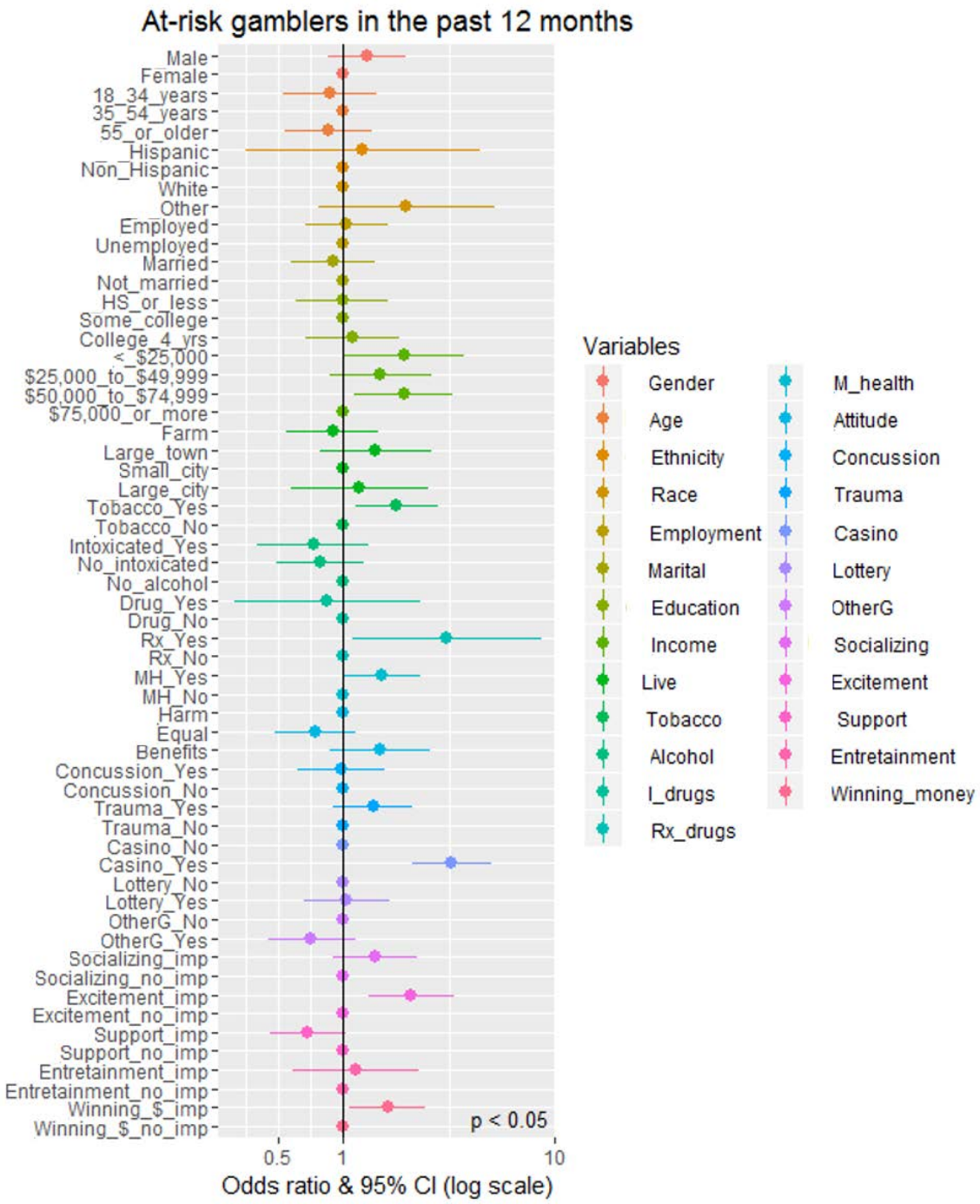


**Figure 8-2.** Representation of regression coefficients (odds ratios) modeling "at-risk" gamblers are the outcome variable

# APPENDICES F.

## APPENDIX F.1. GAMBLED IN THE PAST 12 MONTHS

| Independent Variables and Effects | | Beta Coeff. | SE Beta | Lower 95% Limit Beta | Upper 95% Limit Beta | T-Test B=0 | P-value T-Test B=0 |
|---|---|---|---|---|---|---|---|
| Intercept | | 0.02 | 0.33 | -0.62 | 0.66 | 0.06 | 0.9530 |
| Gender | Male | -0.16 | 0.14 | -0.44 | 0.12 | -1.14 | 0.2548 |
| | Female | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Age | 18-34 years | -0.06 | 0.19 | -0.44 | 0.32 | -0.32 | 0.7483 |
| | 35-54 years | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | 55 or older | 0.24 | 0.17 | -0.10 | 0.57 | 1.37 | 0.1709 |
| Hispanic ethnicity | Hispanic, Latino, or Spanish origin | 1.31 | 0.56 | 0.22 | 2.40 | 2.35 | 0.0186 |
| | Non-hispanic | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Race | White non-hispanic | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | All other (including hispanic) | -0.57 | 0.36 | -1.28 | 0.13 | -1.60 | 0.1107 |
| Employment status | Currently employed | 0.56 | 0.16 | 0.25 | 0.87 | 3.58 | 0.0004 |
| | Not currently employed | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Marital status | Married | 0.17 | 0.16 | -0.14 | 0.48 | 1.06 | 0.2888 |
| | Divorced/Seperated/Wid- owed/Never Married | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Education | HS or less | -0.29 | 0.17 | -0.62 | 0.04 | -1.72 | 0.0854 |
| | Some college/Assoc. | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | College 4 yrs or more | -0.29 | 0.17 | -0.63 | 0.04 | -1.73 | 0.0844 |
| Income | Less than $25,000 | -0.50 | 0.23 | -0.94 | -0.05 | -2.18 | 0.0293 |
| | $25,000 to $49,999 | -0.05 | 0.20 | -0.43 | 0.34 | -0.24 | 0.8142 |
| | $50,000 to $74,999 | -0.09 | 0.20 | -0.48 | 0.30 | -0.46 | 0.6462 |
| | $75,000 or more | 0.00 | 0.00 | 0.00 | 0.00 | . | . |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Place of residence | Farm/non-farm rural/small town | -0.49 | 0.17 | -0.83 | -0.15 | -2.80 | 0.0051 |
| | Large town (5,000 - 25,000) | -0.37 | 0.20 | -0.77 | 0.03 | -1.84 | 0.0665 |
| | Small city (25,000 - 150,000) | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | Large city (>150,000) | -0.63 | 0.24 | -1.11 | -0.15 | -2.56 | 0.0107 |
| Tobacco | Yes (1-30 days) | 0.35 | 0.18 | -0.00 | 0.70 | 1.94 | 0.0531 |
| | None | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Alcohol use | Yes (1-30 days) | 0.88 | 0.22 | 0.45 | 1.32 | 4.00 | 0.0001 |
| | Drunk alcohol, but NOT intoxicated | 0.63 | 0.15 | 0.35 | 0.92 | 4.32 | 0.0000 |
| | Did not drink alcohol | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Illegal drugs | Yes (1-30 days) | 2.19 | 0.82 | 0.58 | 3.80 | 2.66 | 0.0078 |
| | None | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Rx or over the counter med | Yes (1-30 days) | 0.22 | 0.41 | -0.60 | 1.03 | 0.52 | 0.6013 |
| | None | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Mental health | Yes (1-30 days) | -0.08 | 0.15 | -0.37 | 0.20 | -0.58 | 0.5643 |
| | None | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Attitude toward gambling | The harm outweighs the benefits | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | The benefits are about equal to the harm | 0.85 | 0.15 | 0.54 | 1.15 | 5.51 | 0.0000 |
| | The benefits somewhat outweigh the harm | 0.49 | 0.21 | 0.08 | 0.91 | 2.36 | 0.0182 |
| Suffered a concussion? | Yes | 0.13 | 0.18 | -0.23 | 0.49 | 0.71 | 0.4752 |
| | No | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Experienced an event that was traumatic | Yes | 0.30 | 0.14 | 0.02 | 0.58 | 2.12 | 0.0340 |
| | No | 0.00 | 0.00 | 0.00 | 0.00 | . | . |

Gambling Attitude & Prevalence 2015 , CSBR, Iowa adults (18+)

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Logit
Response variable GAMB_12MONTHS_FS2: GAMB_12MONTHS_FS2
LOGISTIC REGRESSION - gambled in the past 12 months - YEAR 2015
by: Contrast.

| **Contrast** | **Degrees of Freedom** | **Wald F** | **P-value Wald F** |
|---|---|---|---|
| OVERALL MODEL | 26 | 9.82 | 0.0000 |
| MODEL MINUS INTERCEPT | 25 | 5.43 | 0.0000 |
| INTERCEPT | . | . | . |
| Gender | 1 | 1.30 | 0.2548 |
| Age | 2 | 1.52 | 0.2190 |
| Hispanic Ethnicity | 1 | 5.55 | 0.0186 |
| Race | 1 | 2.55 | 0.1107 |
| Employment Status | 1 | 12.81 | 0.0004 |
| Marital Status | 1 | 1.13 | 0.2888 |
| Education | 2 | 2.00 | 0.1357 |
| Income | 3 | 2.17 | 0.0901 |
| Place of Residence 4 Cats | 3 | 3.20 | 0.0226 |
| Tobacco | 1 | 3.75 | 0.0531 |
| Alcohol use | 2 | 13.13 | 0.0000 |
| Illegal drugs | 1 | 7.09 | 0.0078 |
| Rx or over the counter med | 1 | 0.27 | 0.6013 |
| Mental health | 1 | 0.33 | 0.5643 |
| Attitude toward gambling | 2 | 15.87 | 0.0000 |
| Suffered a concussion? | 1 | 0.51 | 0.4752 |
| Experienced an event that was traumatic? | 1 | 4.50 | 0.0340 |

Gambling Attitude & Prevalence 2015 , CSBR, Iowa adults (18+)

| Independent Variables and Effects | | Odds Ratio | Lower 95% Limit OR | Upper 95% Limit OR |
|---|---|---|---|---|
| Intercept | | 1.02 | 0.54 | 1.94 |
| Gender | Male | 0.85 | 0.65 | 1.12 |
| | Female | 1.00 | 1.00 | 1.00 |
| Age | 18-34 years | 0.94 | 0.64 | 1.37 |
| | 35-54 years | 1.00 | 1.00 | 1.00 |
| | 55 or older | 1.26 | 0.90 | 1.77 |
| Hispanic Ethnicity | Hispanic, Latino, or Spanish origin | 3.70 | 1.24 | 10.98 |
| | Non-Hispanic | 1.00 | 1.00 | 1.00 |
| Race | White Non-Hispanic | 1.00 | 1.00 | 1.00 |
| | All Other (Including Hispanic) | 0.56 | 0.28 | 1.14 |
| Employment Status | Currently Employed | 1.75 | 1.29 | 2.39 |
| | Not Currently Employed | 1.00 | 1.00 | 1.00 |
| Marital Status | Married | 1.18 | 0.87 | 1.61 |
| | Divorced/Separated/Widowed/Never Married | 1.00 | 1.00 | 1.00 |
| Education | HS or less | 0.75 | 0.54 | 1.04 |
| | Some college/Assoc. | 1.00 | 1.00 | 1.00 |
| | College 4 years or more | 0.75 | 0.53 | 1.04 |
| Income | Less than $25,000 | 0.61 | 0.39 | 0.95 |
| | $25,000 to $49,999 | 0.96 | 0.65 | 1.40 |
| | $50,000 to $74,999 | 0.91 | 0.62 | 1.35 |
| | $75,000 or more | 1.00 | 1.00 | 1.00 |
| Place of Residence 4 Cats | Farm/Non-Farm Rural/Small Town | 0.61 | 0.43 | 0.86 |
| | Large Town (5,000 - 25,000) | 0.69 | 0.46 | 1.03 |
| | Small City (25,000 - 150,000) | 1.00 | 1.00 | 1.00 |
| | Large City (>150,000) | 0.53 | 0.33 | 0.86 |
| Tobacco | Yes (1-30 days) | 1.41 | 1.00 | 2.01 |
| | None | 1.00 | 1.00 | 1.00 |
| Alcohol use | Yes (1-30 days) | 2.42 | 1.57 | 3.73 |
| | Drunk alcohol, but NOT intoxicated | 1.88 | 1.41 | 2.51 |
| | Did not drink alcohol | 1.00 | 1.00 | 1.00 |
| Illegal drugs | Yes (1-30 days) | 8.93 | 1.78 | 44.75 |
| | None | 1.00 | 1.00 | 1.00 |
| Rx or over the counter med | Yes (1-30 days) | 1.24 | 0.55 | 2.80 |
| | None | 1.00 | 1.00 | 1.00 |
| Mental health | Yes (1-30 days) | 0.92 | 0.69 | 1.23 |
| | None | 1.00 | 1.00 | 1.00 |
| Attitude toward gambling | The harm outweighs the benefits | 1.00 | 1.00 | 1.00 |
| | The benefits are about equal to the harm | 2.33 | 1.72 | 3.15 |
| | The benefits somewhat outweigh the harm | 1.64 | 1.09 | 2.47 |
| Suffered a concussion? | Yes | 1.14 | 0.80 | 1.63 |
| | No | 1.00 | 1.00 | 1.00 |
| Experienced an event that was traumatic? | Yes | 1.35 | 1.02 | 1.79 |
| | No | 1.00 | 1.00 | 1.00 |

## APPENDIX F.2. AT-RISK GAMBLERS

| Independent Variables and Effects | | Beta Coeff. | SE Beta | Lower 95% Limit Beta | Upper 95% Limit Beta | T-Test B=0 | P-value T-Test B=0 |
|---|---|---|---|---|---|---|---|
| Intercept | | -3.74 | 0.63 | -4.97 | -2.50 | -5.92 | 0.0000 |
| Gender | Male | 0.27 | 0.21 | -0.15 | 0.68 | 1.26 | 0.2093 |
| | Female | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Age | 18-34 years | -0.13 | 0.26 | -0.64 | 0.37 | -0.52 | 0.6025 |
| | 35-54 years | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | 55 or older | -0.15 | 0.24 | -0.62 | 0.33 | -0.60 | 0.5463 |
| Hispanic Ethnicity | Hispanic, Latino, or Spanish origin | 0.22 | 0.65 | -1.04 | 1.49 | 0.34 | 0.7303 |
| | Non-hispanic | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Race | White non-hispanic | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | All other (including hispanic) | 0.69 | 0.49 | -0.26 | 1.65 | 1.42 | 0.1554 |
| Employment Status | Currently employed | 0.04 | 0.23 | -0.40 | 0.49 | 0.19 | 0.8458 |
| | Not currently employed | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Marital Status | Married | -0.10 | 0.23 | -0.56 | 0.36 | -0.43 | 0.6686 |
| | Divorced/Seperated/Wid- owed/Never Married | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Education | HS or less | 0.01 | 0.25 | -0.49 | 0.50 | 0.02 | 0.9840 |
| | Some college/Assoc. | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | College 4 yrs or more | 0.11 | 0.26 | -0.40 | 0.62 | 0.42 | 0.6758 |
| Income | Less than $25,000 | 0.66 | 0.33 | 0.02 | 1.31 | 2.01 | 0.0442 |
| | $25,000 to $49,999 | 0.41 | 0.28 | -0.14 | 0.97 | 1.46 | 0.1450 |
| | $50,000 to $74,999 | 0.67 | 0.27 | 0.13 | 1.20 | 2.46 | 0.0141 |
| | $75,000 or more | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Place of Residence | Farm/non-farm rural/small town | -0.11 | 0.25 | -0.60 | 0.39 | -0.42 | 0.6748 |
| | Large town (5,000 - 25,000) | 0.36 | 0.31 | -0.24 | 0.96 | 1.17 | 0.2410 |
| | Small city (25,000 - 150,000) | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | Large city (>150,000) | 0.19 | 0.38 | -0.55 | 0.92 | 0.49 | 0.6223 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Tobacco use, during the past 30 days | Yes (1-30 days) | 0.59 | 0.22 | 0.15 | 1.03 | 2.62 | 0.0089 |
| | None | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Drunk alcohol and became intoxicated? | Yes (1-30 days) | -0.32 | 0.30 | -0.92 | 0.28 | -1.05 | 0.2923 |
| | Drunk alcohol, but NOT intoxicated | -0.24 | 0.24 | -0.71 | 0.23 | -0.99 | 0.3241 |
| | Did not drink alcohol | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Used any kind of illegal drugs? | Yes (1-30 days) | -0.17 | 0.51 | -1.18 | 0.84 | -0.33 | 0.7415 |
| | None | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Abused prescription or over the counter med | Yes (1-30 days) | 1.13 | 0.52 | 0.11 | 2.16 | 2.16 | 0.0306 |
| | None | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Mental health problems | Yes (1-30 days) | 0.43 | 0.21 | 0.02 | 0.85 | 2.06 | 0.0392 |
| | None | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Attitudes | The harm outweighs the benefits | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| | The benefits are about equal to the harm | -0.29 | 0.23 | -0.73 | 0.15 | -1.30 | 0.1951 |
| | The benefits somewhat outweigh the harm | 0.41 | 0.28 | -0.13 | 0.95 | 1.48 | 0.1390 |
| Suffered a concussion? | Yes | -0.01 | 0.24 | -0.47 | 0.46 | -0.03 | 0.9762 |
| | No | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Experienced an event that was traumatic? | Yes | 0.33 | 0.22 | -0.10 | 0.76 | 1.53 | 0.1270 |
| | No | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Casino | Yes | 1.18 | 0.22 | 0.75 | 1.61 | 5.39 | 0.0000 |
| | No | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Lottery | Yes | 0.05 | 0.24 | -0.42 | 0.52 | 0.20 | 0.8389 |
| | No | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Other | Yes | -0.34 | 0.24 | -0.81 | 0.14 | -1.39 | 0.1635 |
| | No | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| For socializing | Important (any level) | 0.36 | 0.23 | -0.10 | 0.81 | 1.53 | 0.1258 |
| | No important | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| For excitement or as a challenge | Important (any level) | 0.75 | 0.24 | 0.28 | 1.21 | 3.16 | 0.0016 |
| | No important | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| To support worthy causes | Important (any level) | -0.37 | 0.21 | -0.78 | 0.04 | -1.77 | 0.0767 |
| | No important | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| For entertainment or fun | Important (any level) | 0.15 | 0.34 | -0.53 | 0.82 | 0.43 | 0.6646 |
| | No important | 0.00 | 0.00 | 0.00 | 0.00 | . | . |
| Just to win money | Important (any level) | 0.49 | 0.21 | 0.08 | 0.90 | 2.35 | 0.0191 |
| | No important | 0.00 | 0.00 | 0.00 | 0.00 | . | . |

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Logit
Response variable AT_RISK_GAMBLER: At risk gamblers with at least one symptom PGSI or NODS
For Subpopulation: GAMB_12MONTHS_GFS2 = 1
LOGISTIC REGRESSION - At-risk gambler in the past 12 months (added type of gambling and reason for gambling- YEAR 2015
by: Contrast.

| Contrast | Degrees of Freedom | Wald F | P-value Wald F |
|---|---|---|---|
| OVERALL MODEL | 34 | 9.49 | 0.0000 |
| MODEL MINUS INTERCEPT | 33 | 4.28 | 0.0000 |
| INTERCEPT | . | . | . |
| Gender | 1 | 1.58 | 0.2093 |
| Age | 2 | 0.22 | 0.8019 |
| Hispanic ethnicity | 1 | 0.12 | 0.7303 |
| Race | 1 | 2.02 | 0.1554 |
| Employment status | 1 | 0.04 | 0.8458 |
| Marital status | 1 | 0.18 | 0.6686 |
| Education | 2 | 0.10 | 0.9007 |
| Income | 3 | 2.51 | 0.0569 |
| Place of Residence | 3 | 1.06 | 0.3649 |
| Tobacco use | 1 | 6.87 | 0.0089 |
| Drunk alcohol and became intoxicated? | 2 | 0.70 | 0.4959 |
| Used any kind of illegal drugs? | 1 | 0.11 | 0.7415 |
| Abused prescription or over the counter med | 1 | 4.68 | 0.0306 |
| Mental health problems | 1 | 4.26 | 0.0392 |
| Attitudes | 2 | 3.04 | 0.0481 |
| Suffered a concussion? | 1 | 0.00 | 0.9762 |
| Experienced an event that was traumatic? | 1 | 2.33 | 0.1270 |
| Casino | 1 | 29.04 | 0.0000 |
| Lottery | 1 | 0.04 | 0.8389 |
| Other | 1 | 1.94 | 0.1635 |
| For socializing | 1 | 2.35 | 0.1258 |
| For excitement or as a challenge | 1 | 10.00 | 0.0016 |
| To support worthy causes | 1 | 3.14 | 0.0767 |
| For entertainment or fun | 1 | 0.19 | 0.6646 |
| Just to win money | 1 | 5.51 | 0.0191 |

Gambling Attitude & Prevalence 2015 , CSBR, Iowa adults (18+)

| Independent Variables and Effects | | Odds Ratio | Lower 95% Limit OR | Upper 95% Limit OR |
|---|---|---|---|---|
| Intercept | | 0.02 | 0.01 | 0.08 |
| Gender | Male | 1.31 | 0.86 | 1.98 |
| | Female | 1.00 | 1.00 | 1.00 |
| Age | 18-34 years | 0.87 | 0.53 | 1.45 |
| | 35-54 years | 1.00 | 1.00 | 1.00 |
| | 55 or older | 0.86 | 0.54 | 1.39 |
| Hispanic ethnicity | Hispanic, Latino, or Spanish origin | 1.25 | 0.35 | 4.43 |
| | Non-hispanic | 1.00 | 1.00 | 1.00 |
| Race | White non-hispanic | 1.00 | 1.00 | 1.00 |
| | All other (including hispanic) | 2.00 | 0.77 | 5.21 |
| Employment status | Currently employed | 1.04 | 0.67 | 1.63 |
| | Not currently employed | 1.00 | 1.00 | 1.00 |
| Marital status | Married | 0.91 | 0.57 | 1.43 |
| | Divorced/Seperated/Widowed/Never Married | 1.00 | 1.00 | 1.00 |
| Education | HS or less | 1.01 | 0.61 | 1.65 |
| | Some college/Assoc. | 1.00 | 1.00 | 1.00 |
| | College 4 yrs or more | 1.11 | 0.67 | 1.85 |
| Income | Less than $25,000 | 1.94 | 1.02 | 3.71 |
| | $25,000 to $49,999 | 1.51 | 0.87 | 2.64 |
| | $50,000 to $74,999 | 1.95 | 1.14 | 3.33 |
| | $75,000 or more | 1.00 | 1.00 | 1.00 |
| Place of Residence 4 Cats | Farm/non-farm rural/small town | 0.90 | 0.55 | 1.47 |
| | Large town (5,000 - 25,000) | 1.43 | 0.79 | 2.61 |
| | Small city (25,000 - 150,000) | 1.00 | 1.00 | 1.00 |
| | Large city (>150,000) | 1.20 | 0.58 | 2.52 |
| Tobacco use, during the past 30 days | Yes (1-30 days) | 1.80 | 1.16 | 2.80 |
| | None | 1.00 | 1.00 | 1.00 |
| Drunk alcohol and became intoxicated? | Yes (1-30 days) | 0.73 | 0.40 | 1.32 |
| | Drunk alcohol, but NOT intoxicated | 0.79 | 0.49 | 1.26 |
| | Did not drink alcohol | 1.00 | 1.00 | 1.00 |
| Used any kind of illegal drugs? | Yes (1-30 days) | 0.84 | 0.31 | 2.31 |
| | None | 1.00 | 1.00 | 1.00 |
| Abused prescription or over the counter med | Yes (1-30 days) | 3.10 | 1.11 | 8.63 |
| | None | 1.00 | 1.00 | 1.00 |
| Mental health problems | Yes (1-30 days) | 1.54 | 1.02 | 2.33 |
| | None | 1.00 | 1.00 | 1.00 |
| Attitudes | The harm outweighs the benefits | 1.00 | 1.00 | 1.00 |
| | The benefits are about equal to the harm | 0.75 | 0.48 | 1.16 |
| | The benefits somewhat outweigh the harm | 1.51 | 0.88 | 2.60 |
| Suffered a concussion? | Yes | 0.99 | 0.62 | 1.59 |
| | No | 1.00 | 1.00 | 1.00 |
| Experienced an event that was traumatic? | Yes | 1.40 | 0.91 | 2.15 |
| | No | 1.00 | 1.00 | 1.00 |

| | | | | |
|---|---|---|---|---|
| Casino | Yes | 3.25 | 2.12 | 4.99 |
| | No | 1.00 | 1.00 | 1.00 |
| Lottery | Yes | 1.05 | 0.66 | 1.68 |
| | No | 1.00 | 1.00 | 1.00 |
| Other | Yes | 0.71 | 0.45 | 1.15 |
| | No | 1.00 | 1.00 | 1.00 |
| For socializing | Important (any level) | 1.43 | 0.90 | 2.26 |
| | No important | 1.00 | 1.00 | 1.00 |
| For excitement or as a challenge | Important (any level) | 2.11 | 1.33 | 3.36 |
| | No important | 1.00 | 1.00 | 1.00 |
| To support worthy causes | Important (any level) | 0.69 | 0.46 | 1.04 |
| | No important | 1.00 | 1.00 | 1.00 |
| For entertainment or fun | Important (any level) | 1.16 | 0.59 | 2.28 |
| | No important | 1.00 | 1.00 | 1.00 |
| Just to win money | Important (any level) | 1.64 | 1.08 | 2.47 |
| | No important | 1.00 | 1.00 | 1.00 |

Gambling Attitude & Prevalence 2015 , CSBR, Iowa adults (18+)