Casino Gambling As An Income-Based Leisure Activity: Evidence From The Gambling Impact And Behavior Study

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Abstract

Over the past two decades, 28 states have joined Nevada and New Jersey in legalizing casino gambling. This paper examines patterns in casino gambling using a nationally representative survey conducted as part of the National Gambling Impact Study Commission's research, focusing on socioeconomic determinants of gambling incidence and expenditures. Analysis shows that gambling is positively linked to income, a finding consistent with the view of gambling as a relatively innocuous leisure activity.

Introduction

Over the past two decades, legalized gambling has spread at an astounding rate. In the early 1980s, gambling was legal only in two states (Nevada and New Jersey); today, only two states lack some form of legal gambling (Utah and Hawaii). While some of these states restrict gambling to state lotteries and pari-mutuel wagering, 30 states now have legalized casino gambling. These casinos range in size from the opulent destination resorts of the Las Vegas Strip or Atlantic City, to the riverboats of the Mississippi river, to the micro-casinos of Deadwood, SD. Following their legitimization through the Indian Gaming Regulatory Act of 1988, casinos located on Indian reservations have further expanded the reach of legal casino gambling.

The growth of gambling is visible not only in its geographic dispersion. Casino gambling represents a major segment of the economy. Nationwide, casinos took in \$35.72 billion in revenue in 2000, while employing over 350,000 people. In 1997, Americans spent more money in casinos than on sporting events, movie tickets, and recorded music combined. While casino revenues in Nevada and New Jersey dwarf all other states, many localities encourage the development of casinos as a source of tax revenues and "good" jobs. With such massive spending directed to gambling, it is clear that much of the stigma that used to be associated with this one-time vice has dissipated. As Marfels (1995) notes, the growth of gambling largely stems from its "acceptance by the public of gaming as a leisure-time activity." In addition to Marfels, Eadington (1999) and Pavalko (2002) provides a more detailed description of the casino gaming industry.

Of course, not everyone has welcomed legal gambling with open arms. At the request of anti-gambling groups, Congress commissioned the National Gambling Impact Study Commission (NGISC) in 1996 to study the expansion of gambling and its effects on individuals and society. The NGISC was composed of a cross-section of individuals concerned about this industry (for good or ill), including casino executives, a former chair of the Nevada Gaming Control Board, and prominent opponents of legal gambling (including James Dobson, founder of Focus on the Family). It commissioned the National Opinion Research Center (NORC) at the University of Chicago to conduct a major survey designed to examine gambling by individuals and its effects on communities, and, after analyzing these data, made several recommendations. In its final report to Congress, the commission acknowledged that individual states are better placed to regulate gaming than the Federal government. Nevertheless, the commission proceeded to recommend a variety of restrictions on gambling, such as: banning "cruises to nowhere,"

limiting campaign contributions from gambling operators; banning wagering on college athletics; and banning all internet gambling and making debts incurred from internet gambling unrecoverable.

Given the controversial nature of legalized gambling, academically rigorous research can provide information indispensable for public policy analysis. While many researchers have analyzed various social harms stemming from gambling such as increases in personal bankruptcy filings (Barron et. al. 2002 and Nichols et. al. 2000), crime rates (Gazel et. al. 2001) and suicide rates (McCleary et. al. 2002), relatively little empirical research has attempted to profile the individual gambler. This paper addresses this gap in the literature by drawing upon data collected by the NGISC to analyze casino gambling behavior within the United States population. After reviewing traditional theories related to gambling from the social sciences, this study uses a variety of socioeconomic variables to explain the likelihood that a person will gamble in a casino, the frequency with which she will gamble, and the amount of money she will spend on gambling. The results of this analysis show that casino gambling is more widespread among the wealthy, a finding that tends to confirm gambling's status as a relatively innocuous leisure activity.

Theories of Gambling Behavior

Social scientists tend to view gambling in two distinct ways. One school of thought views gambling as an unproductive, wasteful, and even irrational activity. In this view, gamblers actually believe that they can win in the long run. They therefore perceive casino patronage as a way to increase their incomes. Of course, such a perception is grossly ill-informed; the overwhelming majority of casino games involve a negative expected value, frequently exceeding 5% of every dollar wagered. It is true that some systems of gambling, such as card-counting at blackjack or perfect play at so-called "full pay" video poker machines, are able to give the gambler a slight edge over the house. However, the statistical advantage of the player in these games is so slight as to be negligible for all but full-time professional gamblers, whose incomes usually compare unfavorably to almost any other occupation. Furthermore, systems such as card-counting require skill and patience to be useful, and it is this author's experience that a large majority of casino patrons have neither of these attributes. Recreational gamblers simply cannot rationally expect to win in a casino. Therefore, people who gamble are simply deluding themselves into participating in an intrinsically irrational activity. Gambling is wasteful since firms devote scarce resources to an activity that merely transfers wealth from gamblers to casinos with nothing of value being produced in the interim. Grinols and Omorov (1997) provide a representative of this view.

The other view is of casino gambling as a consumption good. According to this view, casino patrons fully understand that if they gamble long enough, they will eventually find themselves with fewer dollars than they had before. Patrons do not gamble because they expect to win money (although obviously they hope to do so). Rather, they gamble because they enjoy the thrill of gambling itself. Economists such as Le Menstral (2001) have shown that models of consumer preferences allowing for various types of thrill-seeking behavior can explain gambling by rational agents. He argues that it is inappropriate to model gambling in terms of its dollar outcomes, as is frequently done by economists using the standard von Neumann-Morgenstern expected utility framework, because the activity of gambling is a process that gamblers enjoy in and of itself, and he goes on to build a model of gambling around a preference relation over both outcomes and processes. By contrast, Hartley and Farrell (2002) attempt to explain gambling within the expected utility framework by suggesting that the expected utility function may have regions of nonconcavity, which would result in risk-loving behavior. Such a model is especially persuasive in rationalizing low-stakes gambling, which represents the bulk of gamblers. (The NORC study found that more than one third of casino income stems from gamblers who lose less than \$100 per year, and those who lose less than \$500 per year account for more than half of total casino revenues).

Indeed, this view of gambling as a leisure activity largely explains why existing casino interests in Nevada and New Jersey did little to impede the spread of casinos throughout the US. One might have imagined that these two distant states, each being virtually a monopolist in this market for one region of the country, might have opposed the erosion of their market power by tribal casinos and Midwestern riverboats. Rather, Hunsaker (2001) shows that the expansion of legal gambling actually increased revenues for the older destination casinos of Las Vegas and Atlantic City. Prior to gambling's expansion, many potential gamblers in the Midwest and South had no

way to “sample” casino gambling to tell whether they would enjoy it or not. As a result, these people were unwilling to devote their vacation budgets to a destination such as the Las Vegas Strip, since it loomed as an unknown commodity. However, once people were able to experience gambling on a riverboat and found it an enjoyable pastime, they became more likely to consider Las Vegas or Atlantic City as a vacation destination. In other words, experience with casino gambling both removed much of the stigma associated with this activity and brought in new customers for the destination resorts, a pattern consistent with many heretofore unknown experiential goods.

Empirical analysis can help illustrate whether gamblers actually view casino games as money making opportunities or more realistically as a negative-expectation leisure activity. Economic theory suggests that if gamblers actually expect (wrongly) to increase their incomes through gambling, then gambling should be more prevalent among those with lower incomes. This hypothesis stands on the same logic that underlies the well-known phenomenon of the backward-bending labor supply curve. In that framework, it is recognized that low-income workers have a relatively high marginal utility associated with income, as compared to that for leisure. Thus, an opportunity to enhance their income (through an increase in the wage rate) induces low-income workers to spend more time generating income through their labor. High-income workers behave in the opposite manner. Because of the diminishing marginal utility of income, high-income workers place a relatively low value on additional earnings but a relatively high value on additional leisure time. An increase in the wage rate allows high-income workers to enjoy more leisure while maintaining a similar income by reducing their work hours. The result is that higher wages induce more work among low-income workers and less work among high-income workers. A similar argument suggests that higher incomes should be associated with less gambling if agents perceive gambling to be income-creating “work.” At low incomes, agents are more inclined to forgo leisure to engage in income-generating activities, including gambling. Likewise, agents with high incomes will optimally choose to spend more time at leisure and less time further increasing their incomes, which would result in less gambling.

On the other hand, if gamblers perceive casino patronage as a leisure activity, one might reasonably expect the opposite correlation. Since high-income workers tend to devote more time to leisure activities in general, it follows that they would likely devote more time to gambling than those with lower incomes, who devote more time to work and less time to leisure. In that case, one would expect to observe a positive correlation between income and casino gambling.

It should be noted that an observed negative correlation between income and gambling would not necessarily imply that gambling is viewed as an income-generating activity, as opposed to a leisure activity. An alternative explanation for such a result might be that gambling is an inferior good. Perhaps casino gambling, like bowling, enjoys more popularity as a leisure activity among the poor than the well-off, and this difference in popularity thus manifests itself in a negative relation between income and gambling activity. However, an observed positive correlation between income and gambling would strongly suggest that casino gambling should be classified a consumption good.

Description of the Data

The NORC conducted a study on gambling behavior among the United States population in consultation with the National Gambling Impact Study Commission. This study, published as the 1999 Gambling Impact and Behavior Study (GIBS), is designed to investigate gambling-related phenomena from a variety of perspectives. It includes a nationally representative telephone survey of adults, a telephone survey of youths aged 16 and 17, a on-site survey of casino patrons, and a survey of casino executives. It also includes data designed to study the effects of gambling on communities, such as a representative sample of 100 communities stratified by their proximity to a casino, and detailed case studies of ten communities affected by the openings of one or more nearby casinos. This wealth of data makes the GIBS a treasure-trove for researchers on gambling-related topics.

This paper focuses on data from the telephone survey, which is based on 2417 complete responses by randomly-selected adults age 18 and over. The GIBS telephone survey dataset is rich in descriptive and demographic characteristics of respondents, only some of which are utilized in the analysis at hand. The survey

included questions related to the respondent's frequency of gambling in various forms (visiting casinos, playing the lottery, betting on sporting events, etc.), income, education, employment status, family status, mental health history, drug and alcohol usage, and criminal record. The survey also features a lengthy section designed to study pathological gambling, a problem that remains controversial. The detail of this survey allows researchers from a variety of disciplines to study a plethora of issues involving gambling behavior in the US population. The 1999 Report to the National Gambling Impact Study Commission provides a more detailed description of the telephone survey and the rest of the data collected in the GIBS.

This paper follows the methodology of Layton and Worthington (1999), who study gambling patterns in Australia using a similar dataset. These researchers regress various types of gambling activity on a variety of socio-economic factors, and find that gambling is more common among those with higher incomes, less common among singles, and that people become more likely to gamble as they age. Gambling behavior also varies according to ethnic identification and geographic locale. This analysis will investigate whether Layton and Worthington's results generalize from Australia to the US, and will also include US-specific ethnic and geographic groupings.

Additionally, the GIBS data allow more intricate exploration of gambling patterns among the US population. Layton and Worthington are limited in their ability to describe gambling behavior, since their data consist solely of binary dependent variables ("play the lottery – don't play the lottery"; "play casino games – don't play casino games"; etc.). In addition to tracking whether each respondent has ever gambled in a casino, the GIBS data also track the respondent's frequency of play and various measures of spending. As Vorberg, et. al. (2001) explain, calculating the amount a particular gambler "spends" (loses) in a casino or other gambling setting from self-reported data is tricky, since gamblers have been shown frequently to misstate their gambling losses. Contrary to common belief, Vorberg, et. al. demonstrate that gamblers do not always underestimate their losses; in fact, gamblers generally overestimate their expenditures on lotteries and casino table games. (Gamblers do tend to underestimate their losses on slot machines). The authors, several of whom participated in the NORC study, explain how the GIBS survey is specifically designed to avoid some of these problems, but still caution that "gamblers, whether or not they are classifiable as problem or pathological, seem accustomed to a fairly high level of wishful thinking about the economics of the games they play."

The advantage of the GIBS in this regard is that it provides a variety of possible measures for gambling expenditures, such as the amount the respondent was willing to lose on his or her last trip to a casino, the largest amount the respondent has ever lost on a single day, and the total amount the respondent spent on gambling over the past month. The use of three different self-reported expenditure measures allows the researcher to establish a degree of robustness across the three different dependent variables, which minimizes the danger inherent in interpreting self-reported data in this field.

Table 1 provides a description for each of the variables used in this study. The first five variables will be used as dependent variables, and each will be regressed on the remaining variables, which are hypothesized to explain gambling behavior, again following Layton and Worthington. The first two variables, *CASINOPY* and *CASFREQ*, are used to measure whether the respondent gambles in casinos at all, and, if so, how often. These two variables are each regressed on the explanatory variables using logit and ordered logit estimation, respectively. The next three variables, *WILLOSE*, *BIGLOSS*, and *SPENT*, each serve as a proxy for expenditures on gambling. Of these, *SPENT* is obviously the most direct, but measures only the respondent's gambling expenditures over the 30 days preceding the administration of the survey. It is assumed that the maximum amount the respondent is willing to lose at a casino (*WILLOSE*), as well as the largest amount the respondent has ever lost (*BIGLOSS*), also capture the agents demand for gambling services. Each of these three variables devoted to spending is regressed on the explanatory variables using OLS estimation. The simultaneous analysis of three such variables will help to mitigate the imprecision in self-reported gambling losses reported by Vorberg, et. al.

Table 1: Variable Descriptions

Variable Name	Description
<i>CASINOPY</i>	= 1 if the respondent gambled at a casino in the past year
<i>CASFREQ</i>	respondent's frequency of play in casinos in the past year (grouped)
<i>WILLOSE</i>	amount respondent was willing to lose on most recent visit to a casino
<i>BIGLOSS</i>	largest amount respondent has ever lost at a casino in one day
<i>SPENT</i>	amount respondent spent on gambling over the past 30 days
<i>FEMALE</i>	= 1 if the respondent is female
<i>AGE</i>	respondent's age (grouped)
<i>BLACK</i>	= 1 if the respondent is black
<i>HISPANIC</i>	= 1 if the respondent is Hispanic
<i>OTHNW</i>	= 1 if the respondent is nonwhite but not black or Hispanic
<i>MIDWEST</i>	= 1 if the respondent resides in the Midwest
<i>NEAST</i>	= 1 if the respondent resides in the Northeast
<i>SOUTH</i>	= 1 if the respondent resides in the South
<i>WEST</i>	= 1 if the respondent resides in the West
<i>MARRIED</i>	= 1 if the respondent is married
<i>KIDS</i>	= 1 if the respondent lives with children
<i>STUDENT</i>	= 1 if the respondent is currently attending school of any kind
<i>SCHOOL</i>	highest grade attempted by the respondent (grouped)
<i>RELIGION</i>	frequency with which the respondent attends religious services (grouped)
<i>INCOME</i>	respondent's reported annual household income (grouped)

The remaining variables described in Table 1 serve as independent variables. In light of Layton and Worthington's research, it is reasonable to suppose that gambling behavior may vary across gender (*FEMALE*), age (*AGE*), ethnicity (*BLACK*, *HISPANIC*, *OTHNW*), geography (*MIDWEST*, *NEAST*, *SOUTH*), and class (*INCOME*). The analysis also controls for family status (*MARRIED*, *KIDS*) and whether or not the respondent is currently a student (*STUDENT*). The GIBS dataset also allows the researcher to control for variables that were unavailable to Layton and Worthington, including the respondent's level of education (*SCHOOL*), and attendance of religious services (*RELIGION*).

Results

The five dependent variables (*CASINOPY*, *CASFREQ*, *WILLOSE*, *BIGLOSS*, *SPENT*) form five models attempting to explaining two phenomena using the GIBS dataset: (1) casino patronage patterns; and (2) gambling expenditure.

Table 2 presents the results of limited dependent variable analysis on the first two variables, which measure casino patronage. The first model regresses the dummy variable (*CASINOPY*) indicating whether the respondent patronized a casino in the past year on the independent variables using logit estimation. The second model uses ordered logit estimation to regress the frequency of casino patronage (*CASFREQ*) on the explanatory variables. Ordered logit estimation is appropriate in this case because the variable takes on values from 1 to 5, with 1 indicating only one visit to a casino in the past year and 5 indicating that the respondent plays "about every day." In interpreting the results, it is important to note that the second model includes only those respondents who patronized a casino in the past year; if the respondent indicated that he or she did not visit a casino in the past year (*CASINOPY* = 0), then the respondent was not asked his or her frequency of play (*CASFREQ* = missing).

As might be expected in this sort of cross-sectional analysis, each model explains only a small proportion of the total variation in the dependent variable. However, a standard Chi-squared test establishes the explanatory power of each regression and rejects a joint zero-coefficients hypothesis well beyond the 1% significance level.

Table 2: Casino Patronage
(standard errors in parentheses)¹

	CASINOPY	CASFREQ
FEMALE	0.028 (0.117)	-0.333 (0.166)**
AGE	-0.111 (0.049)**	0.205 (0.070)***
BLACK	0.373 (0.199)*	0.116 (0.283)
HISPANIC	0.065 (0.245)	0.422 (0.350)
OTHNW	0.124 (0.219)	-0.014 (.0314)
MIDWEST	0.043 (0.161)	-0.440 (0.223)**
NEAST	-0.373 (0.176)**	-0.677 (0.253)***
SOUTH	-0.359 (0.157)**	-0.631 (0.229)***
MARRIED	-0.015 (0.131)	-0.242 (0.186)
KIDS	-0.413 (0.127)***	-0.339 (0.181)*
STUDENT	-0.268 (0.205)	0.316 (0.308)
SCHOOL	-0.048 (0.040)	-0.221 (0.060)***
RELIGION	-0.030 (0.023)	-0.052 (0.033)
INCOME	0.141 (0.069)**	0.272 (0.100)***
CONSTANT	0.583 (0.327)*	---
N	1276	586
χ^2	35.62	51.45
Pseudo R²	0.02	0.04

¹ *, ** and *** indicate significance for $\alpha = .10$, $\alpha = .05$ and $\alpha = .01$ respectively

These two models provide several noteworthy results. First, people with higher incomes are more likely to have visited a casino in the past year, and are also more likely to be frequent patrons. Second, while marriage has no significant effect on casino patronage, children do; adults who share a household with children are both less likely to have visited a casino and are less likely to make frequent repeat visits. Casino patronage patterns also vary somewhat predictably by geography, with respondents in the Northeast and South significantly less casino-bound than those in the West.

In several cases, variables that affect past-year patronage in one direction affect frequency of casino visits (among gamblers) in the other direction. For instance, older respondents are less likely to have patronized a casino recently, but those that have are more likely to be frequent patrons. This is probably to be expected, since older gamblers frequently have more time to devote to this activity. Women, Midwesterners, and people with greater education were no less likely to have visited a casino than other respondents, but all were significantly less likely to be frequent players.

Again, none of the three models has a particularly high R^2 , with the best model explaining only about 10% of the total variation in *WILLLOSE*. This is unsurprising, given the focus on socioeconomic data, much of which is grouped. Like the casino patronage models, though, an F test rejects a joint zero-coefficients hypothesis beyond the 1% in each of these gambling expenditure models.

Of the three dependent variables, *SPENT* (self-reported spending on gambling over the past 30 days) is most direct, but *WILLLOSE* and *BIGLOSS* are also reasonable proxies for gambling expenditures that should be examined. Several results are common to at least two of the three models. Women spend significantly less than men, married people spend significantly less than singles, students spend less than those not currently in school, and those in high-income households spend more than those in low-income households.

These five models collectively demonstrate that gambling behavior correlates positively with income. These results are not just statistically significant; they are economically significant as well. As shown in Table 3, a one unit increase in income (say, from the \$24,000 – \$49,999 range to the \$50,000 – \$99,999 range) results in an additional \$23.14 spent on gambling per month, or about \$288 per year. The average person with a household income of \$100,000 or more will spend approximately \$833 more on gambling annually than a person who earns less than \$24,000.

Table 3 shows the results of three OLS estimations of different measures of casino spending (*WILLOSE*, *BIGLOSS*, *SPENT*):

Table 3: Casino Expenditures (standard errors in parentheses)¹

	WILLOSE	BIGLOSS	SPENT
FEMALE	-60.93 (18.8)***	-158.87 (48.3)***	17.28 (11.4)
AGE	-5.62 (7.89)	13.05 (19.7)	-2.61 (4.64)
BLACK	-39.78 (31.1)	-34.84 (80.8)	35.29 (19.3)*
HISPANIC	-33.68 (36.6)	-59.53 (97.8)	-8.10 (22.9)
OTHNW	-26.53 (36.0)	-41.46 (91.3)	10.84 (21.9)
MIDWEST	-0.72 (25.2)	-110.15 (71.1)	-10.18 (16.7)
NEAST	44.27 (29.5)	-95.52 (76.4)	6.42 (18.0)
SOUTH	35.52 (26.1)	-18.19 (67.2)	-21.32 (15.9)
MARRIED	-52.71 (21.4)**	-153.57 (53.8)***	-17.80 (12.7)
KIDS	12.47 (20.52)	55.14 (52.4)	-4.83 (12.4)
STUDENT	-57.77 (34.3)*	-104.60 (81.9)	41.10 (19.5)**
SCHOOL	-1.19 (7.15)	19.56 (16.0)	-4.24 (3.76)
RELIGION	-1.96 (3.92)	-4.45 (9.17)	0.80 (2.20)
INCOME	18.71 (11.9)	54.90 (28.0)**	23.14 (6.49)***
CONSTANT	181.15 (54.1)***	162.91 (134.1)	23.67 (31.6)
N	300	1937	1355
F	2.14	2.27	2.14
R²	0.10	0.02	0.02

¹ *, ** and *** indicate significance for $\alpha = .10$, $\alpha = .05$ and $\alpha = .01$ respectively

Of course, the rate of casino patronage also varies positively with income, a relationship fleshed out in Table 4:

Table 4: Predicted Past Year Casino Patronage, by Income Group

<i>INCOME</i>	Predicted <i>CASINOPY</i>
1 (< \$24,000)	0.417
2 (\$24,000 to \$49,999)	0.452
3 (\$50,000 to \$99,999)	0.487
4 ($\geq$ \$100,000)	0.522

Table 4 shows the predicted values of *CASINOPY* for individuals of different income levels, with mean values attributed to the other dependent variables. According to Table 4, people living in high-income households (\$100,000 or more) are about 7% more likely to have gambled in a casino in the past year than someone in an upper-middle class (\$50,000 – \$99,999) household, 15% more likely than someone in a lower-middle class (\$24,000 – \$49,999) household, and 25% more likely than someone living in a low-income (less than \$24,000) household.

One can similarly compute predicted probabilities for the ordered logit analysis of *CASFREQ*:

Table 5: Predicted Frequency of Casino Patronage, by Income Group

	<i>INCOME</i> = 1 (<i><</i> \$24,000)	<i>INCOME</i> = 2 (\$24,000 to \$49,999)	<i>INCOME</i> = 3 (\$50,000 to \$99,999)	<i>INCOME</i> = 4 (<i>≥</i> \$100,000)
Pr(<i>CASFREQ</i> = 1) (Once in past year)	0.469	0.403	0.339	0.281
Pr(<i>CASFREQ</i> = 2) (A few times this year)	0.457	0.503	0.541	0.567
Pr(<i>CASFREQ</i> = 3) (Once or twice a month)	0.058	0.074	0.094	0.117
Pr(<i>CASFREQ</i> = 4) (One to three times a week)	0.009	0.012	0.016	0.021
Pr(<i>CASFREQ</i> = 5) (About every day)	0.006	0.008	0.011	0.014

The results shown in Table 5 clearly reveal a substantial positive relationship between household income and the frequency with which the respondent gambles at a casino. In all cases, a large majority of respondents gamble no more than “a few times” per year. However, the average lowest-income gambler is 67% more likely to have gambled only once in the past year than the average highest-income gambler. Conversely, the average highest-income gambler is 102% more likely to gamble on a monthly basis and 133% more likely to gamble on a weekly or daily basis than the average lowest-income gambler. Overall, the average highest-income gambler is about twice as likely to gamble regularly (whether monthly, weekly, or daily) than the average lowest-income gambler. While the number of monthly, weekly, and daily gamblers is relatively small, membership in this class of “regular” gamblers is strongly correlated with household income.

Conclusion

While the data reveal several interesting findings, the most important result is the positive relationship between household income and gambling activity. Higher incomes lead to a greater incidence of casino gambling, a greater frequency of casino gambling, and larger expenditures on gambling. This correlation matches what one would expect from economic theory if gambling is a normal leisure good, but appears inconsistent with the view of gambling as an inefficient, illusory time-waster. Frequently, the gaming industry in general and casino industry in particular are depicted as vice merchants that prey on the poor. Since gambling activity is positively correlated with income, the common image of casinos building stockholder value on the backs of the poor appears misguided. Rather, the picture of gambling that emerges is one of an income-based leisure activity.

In addition to this income-based correlation, several other useful findings emerge as well. Relative to men, women gamble less frequently and for lower stakes. The same relationship holds for those who are married with children. While education does not affect gambling expenditures, better educated people do tend to gamble less frequently. People in different regions of the country differ in their rates of casino patronage, but their gambling losses are otherwise the same. While ethnicity is not an overriding factor in explaining gambling patterns, this analysis provides mixed evidence suggesting that African Americans are more likely to gamble and spend more on

gambling than the rest of the US population. Interestingly, a respondent's religious attachment has no effect whatsoever on gambling behavior.

These results suggest a variety of directions for future research. As noted earlier, casino gambling has spread rapidly over the past 20 years, and experts staffing the NGISC make it clear that this spread shows no signs of slowing down or receding. The cost-benefit calculation of legalized gambling faced by individual states and communities will therefore continue to be a crucial public policy consideration for the foreseeable future. If, as these results imply, casino gambling is simply one leisure good among many for most gamblers, that fact would reduce the implied costs of gambling and could be posited as an argument in favor of the gaming industry's further expansion. Given the importance of this topic, additional research to substantiate the economic nature of casino gambling is badly needed.

While casinos represent an especially high-profile gaming alternative, many states play host to other, similar forms of gambling such as video lottery terminals and off-site pari-mutuel wagering. Millions of Americans also have access to off-shore internet gambling, a trend that has particularly troubled gaming industry observers. This study has focused on the determinants of casino gambling, but similar research could investigate the existence of analogous patterns in these and other types of gaming. Of particular importance would be an investigation into whether video lottery terminals, say, are more or less deleterious than land-based or riverboat casinos. Such comparisons would also provide practical insight for decision makers.

These or similar data could also be used to study a variety of socioeconomic issues. More detailed analysis could serve to substantiate or extend these findings on the incidence and intensity of gambling among various demographic groups. While this research has focused on gambling among the US population as a whole, it has not considered the more controversial issue of pathological gambling; further research is needed to investigate the relative magnitude of social harm stemming from this problem. Finally, the spread of gambling on Indian reservations suggests an examination of whether tribal casinos differ substantially from their non-tribal peers in either their clientele or social impact. These and other topics would greatly add to our understanding of the fast-changing face of the gaming industry.

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