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ABSTRACT

The purpose of this exploratory study was to identify any association between the type of game land-based casino visitors played and various demographic and behavior characteristics. Multiple Correspondence Analysis (MCA) was used to identify the association between type of casino game played and respondent characteristics and behaviors. The study revealed that different types of visitors to land-based casinos may be drawn to different types of casino games. Preferences were separated by gender, age, previous visits to gambling destinations, whether the respondents gambled on the Internet, and what type of Internet game they played. The identified associations have the potential to lead to future research projects that may delve into why a particular characteristic influences the choice of game played.

Key Words: correspondence analysis, gaming behavior, casinos, gambling, casino marketing

INTRODUCTION

Legalized in 1931 in Las Vegas, gambling encompasses playing games of risk for the chance to make some money (Walker, 2006). Today, gambling continues to be a popular and profitable pastime activity. At the end of 2007, there were 467 commercial casino operations located in 12 states in the United States that generated just over $34 billion in gross gambling revenue - a 5.3 percent increase over 2006 (American Gaming Association, 2008). Not only are revenues growing, but so is the number of

casino patrons. Approximately 54.5 million people visited casinos in 2007, with each gambler making a total of 376 million casino trips – five million more than 2006 (AGA, 2008).

In the United States, the majority of casino games are some form of electronic game, such as slot and video poker machines, and casinos continue to expand the range of electronic games they offer (Shemeligian, 2007). For example, there are now electronic forms of bingo, roulette, and blackjack. Casino patrons can sit down and play these games without interacting with a traditional dealer ("GLI Releases," 2007). In addition to the electronic games, there are traditional table games such as table poker, craps, blackjack, and roulette, as well as new table games that are spin-offs of the traditional games.

People are drawn to casinos for a number of reasons, not just to gamble (Eisen, 2007). Many casinos now offer other types of entertainment to go along with games offered on the casino floor. Gaming entertainment, as it is often referred to, includes high quality food and beverage, hotels, shopping, spas, live entertainment and, in some cases, themed rides and museums, in addition to gambling itself (Walker, 2006). In Las Vegas, non-gambling activities such as those just mentioned generate more revenue than gambling does (Amster, 2007). Gambling competes with all other aspects of gaming entertainment; therefore it becomes more important for casino managers to attract customers to the casino floor. It is also important for patrons to feel that the casino offers the games they want to play (Shemeligian, 2007). Casinos do this by offering new games, and, at the same time, keeping some of the more traditional games that people expect to see in a casino. The challenge, though, is to determine who might be interested in playing what type of game.

The study of consumer behavior in the travel and tourism arena is well established (Sirakaya & Woodside, 2005). In addition, it is well documented that various socio-demographic characteristics can help to explain, differentiate, or identify different behaviors of travelers. The studies conducted in relation to consumer behavior in the gaming industry have focused on local's (i.e., residents of a gaming destination) behavior and attitudes toward gambling (Mok & Hraba, 1991; Bruce & Johnson, 1994; Ocean & Smith, 1993; Shoemaker & Zemke, 2005). However, the primary area of focus appears to have

been on problem gambling, revenue management, or risks associated with gambling (Abbott & Clark, 2007; LaPlante, Nelson, LaBrie and Shaffer, 2006). What appears to be lacking is specific information about the socio-demographics and behaviors of players that like to play specific games, whether they are table games or electronic games. Thus, this study will take an exploratory approach in order to identify any association between player demographics, visitation behavior, and Internet gaming preferences of gamblers, and the type of land-based casino game they prefer to play. Any identified associations have the potential to lead to future research projects that may delve into why a particular characteristic influences the choice of game played.

LITERATURE REVIEW

Numerous studies about problem or pathological gambling, and how t motivations may vary among various demographic characteristics such as age, gender, socio-economic status, or other behavioral characteristics, have already been conducted (Abbott & Clark, 2007). Such studies contribute to the knowledge of what motivates problem gamblers to continue gambling, how they might be treated, or what may be done to prevent problem gambling (Abbott & Clark, 2007).

In one study similar to the present study, LaPlante, Nelson, LaBrie and Shaffer (2006) analyzed gambling preferences of men and women that were involved in a specific gambling treatment program. The results indicated that gender was not a strong predictor in game preference, even though men were more likely to gamble than women. Instead, economic, personal demographics, and health related issues discriminated gamblers and their preferences for specific games. The 12 types of games used in the study were casino table games, slots, keno, video, non-casino cards, bingo scratch tickets, lotteries, race tracks, sports, stocks, and other (LaPlante et al., 2006).

In another study similar to the present, Shoemaker and Zemke (2005) researched the demographic and behavioral characteristics of resident living in Las Vegas, Nevada. Behavioral characteristics included gambling budget, time spent gambling and favorite game, while demographic characteristics included gender, age, martial status, income, and employment status. Differences in the types of games respondents played was found between gender, gambling budget, and frequency of gambling. Video

poker and slot machines were the two most popular games for both men and women, as well as for those that gambled most often (Shoemaker & Zemke).

Differences between slot players, and table players, were analyzed by Titz, Andrus, and Miller (2002). The authors wanted to determine if gamblers preferring the two types of games were different. In some aspects, groups were similar, i.e. both obtained pleasure from gambling, and both groups seemed to have strong control over the amount of money spent on gambling. Among the differences was the fact that slot players were more impulsive than table players, and that table players were more analytical and deeply involved than slot players (Titz et al., 2002).

Casino gaming tourists were studied in Colorado in order to determine their characteristics (Park, Yang, Lee, Jang, & Stokowski, 2002). Overall characteristics, such as age, sex, education, and marital status were presented before analyzing why gaming tourists visited a particular local casino. The authors focused specifically on the involvement profiles of the tourists; for example, how important the product was to them, how much enjoyment they received from it and how they self-expressed themselves through the product (Park et al., 2002). The product in the study was gambling in the casino. The results indicated that involvement profiles segmented gaming tourists much more distinctly than general demographic characteristics.

LaPlante et al.'s (2006) and Shoemaker and Zemke's (2005) studies are most similar to this study, although they focus solely on problem gamblers, and the local's market of Las Vegas, Nevada, respectively. The results of the Titz et al. (2002) study are also important in that they indicate differences between table game players and mechanical game (slot) players. However the study did not indicate the factors affecting player's choice of table versus mechanical games. Finally, Park et al.'s study (2002) provided characteristics of gaming tourists in general, which showed the importance of knowing what kinds of customers are attracted to a particular casino. It does not, however, provide any information about gambler's game of choice when in the casino.

METHODOLOGY

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The purpose of this study was to identify associations between type of land-based casino game played and player demographics, visitation behavior, and Internet gaming preferences of gamblers. Adults aged 21 years or older, and who had expressed an interest in gambling, were targeted for the sample population. The respondents were obtained from Survey Sampling International (SSI), a "supplier of Internet, telephone, mail and in-person sampling solutions" (www.surveysampling.com, 2007). SSI initially sent out 2000 invitations, which explained the purpose of the research, to members of SSI that had expressed an interest in gaming. Interested parties were then directed, via a link, to the online survey site called Survey Monkey (www.surveymonkey.com). Respondents who completed the survey were incented with an entry into a drawing for $10,000 that SSI offers every month. All of the respondents were located throughout the United States and were adults aged 21 years old or older. In total, 300 questionnaires were received with 222 of them fully complete and usable for analysis.

The questionnaire contained 28 questions relating to the respondents' Internet gaming preferences, general land-based gaming preferences, previous visitation, as well as demographic information. The respondents' general land-based gaming preferences in relation to demographic characteristics, visitation characteristics, and Internet gaming preferences were then analyzed using SPSS version 11.5. Multiple Correspondence Analysis (MCA) was used to identify the association between type of casino game played or preferred and various respondent characteristics and behaviors. MCA is an exploratory technique that is an extension of simple correspondence analysis (Meulman & Heisser, 2005). While simple correspondence analysis is designed to analyze the relationships between two categorical or nominal variables, MCA will analyze the relationship between multiple nominal or categorical variables, such that are in the present study. The data are generally divided into rows and columns, with rows representing cases or objects and columns representing the different categories of each variable. Each variable may have several categories. MCA will identify the column and row points on a visual graph for ease of interpretation (Meulman & Heisser, 2005).

Before MCA is run, it is important to run chi-square tests and cross tabulations in order to identify the variables that are significantly correlated with each object. Without significant relationships,

MCA is not appropriate (Hair, Black, Babin, Anderson and Tatham, 2006). Chi-square analyses were conducted in the present study to identify the significant relationships between the type of casino game played (object) and demographic information, as well as other gaming behaviors of the respondents. The analysis began with 28 variables. Nineteen were found significant at the 0.05 level. Once the significant correlations were identified, a rectangular matrix of the cell frequencies was created so that the data could be used for MCA. In the matrix, the row objects are (1) video poker, (2) slot machines, (3) blackjack, (4) race and sports book, (5) roulette, (6) table poker, (7) craps, (8) other, and (9) bingo. There were nineteen column variables in total representing age, gender, marital status, visitation history, frequency of casino visits, and Internet gaming preferences.

Although cross tabulations identify the significant relations, they cannot represent any graphical representation of the data, nor do they show specifically how the variables are related. That is an advantage of MCA. It highlights how variables are related graphically, instead of just simply showing that they are related. Categories that are similar to each other will be represented as points that are close together on the graph, whereas categories that are different will have points that are far from each other (Clausen, 1998).

RESULTS

The majority of the respondents was male (64.9%) and was between the ages of 21-50 (67.1%). Most respondents were also married (59.5%), and had some college education (40.5%). There was not an overwhelming majority in any of the income categories. Of all of the respondents, 63 reported an income less than $35,000, 56 reported income of between $35,001 and $55,000, and 45 reported an income of between $55,001 and $75,000.

The most appropriate solution for MCA was found to be a 2-dimensional solution since both dimensions together explained 66.0% of the variance. The singular value for dimension one was .22, while for dimension 2 is was .15. Hair et al. (2006) recommend using only dimensions that have a singular value of .2 or greater. In this case, however, the 2nd dimension explains 21.6% of the variance. Table 1

Demographic Profile of Respondents (N=222)

	Number	%
Age		
21-35 years	71	32.0
36-50 years	78	35.1
51-65 years	49	22.1
66+ years	24	10.8
Total	222	100.0
Gender		
Male	144	64.9
Female	78	35.1
Total	222	100.0
Education Level		
No college	29	13.1
Some college/Associate Degree	90	40.5
Bachelors Degree	71	32.0
Post Bachelors Degree	32	14.4
Total	222	100.0
Marital Status		
Married	132	59.5
Single (divorced, separated, widowed, never married)	85	38.3
Other	5	2.3
Total	222	100.0
Annual Household Income		
Under $35,000	63	28.4

$35,001-$55,000	56	25.2
$55,001-$75,000	45	20.3
$75,001-$95,000	29	13.1
Over $95,000	29	13.1
Total	222	100.0

That is a meaningful contribution to variance, which results in the selection of a 2-dimensional solution (Clausen, 1988; Weller & Romney, 1990). Dimension one explained 44.5% of the variance.

The 2-dimensional graph (Figure 1) indicates that more column variables were related with video poker than with any other specific game. People playing video poker were more likely to have visited Las Vegas, and were more likely to play casino games on the Internet. Casino frequency of 2-12 times per year, and 2-12 times per month, both closely associated with video poker players, indicates that the two row variables have very similar profiles. It also indicates that video poker players were very frequent visitors of land-based casinos.

Figure 1 also shows that people age 36-50 were most attracted to slot machine games, were most likely married and most likely to play bingo on the Internet, while the other large age group, people aged 21-35 were most likely to play blackjack, were male, and were more likely to have visited Atlantic City. While the relatively younger players were associated with blackjack and slot machines, the more mature players were associated with the "other" category. These players tended to visit casinos only once a year or less, were single, and were aged 51 and older.

Race and sports book players did not have a particularly close association with any variable, but they were the most likely to play race and sports book games on the Internet. Women were more likely to play bingo, while craps players were most likely to gamble on the Internet. Finally, table poker players shared similarities with craps players, and they were also most likely to have visited Chicagoland.

Figure 1

The correspondence analysis joint map
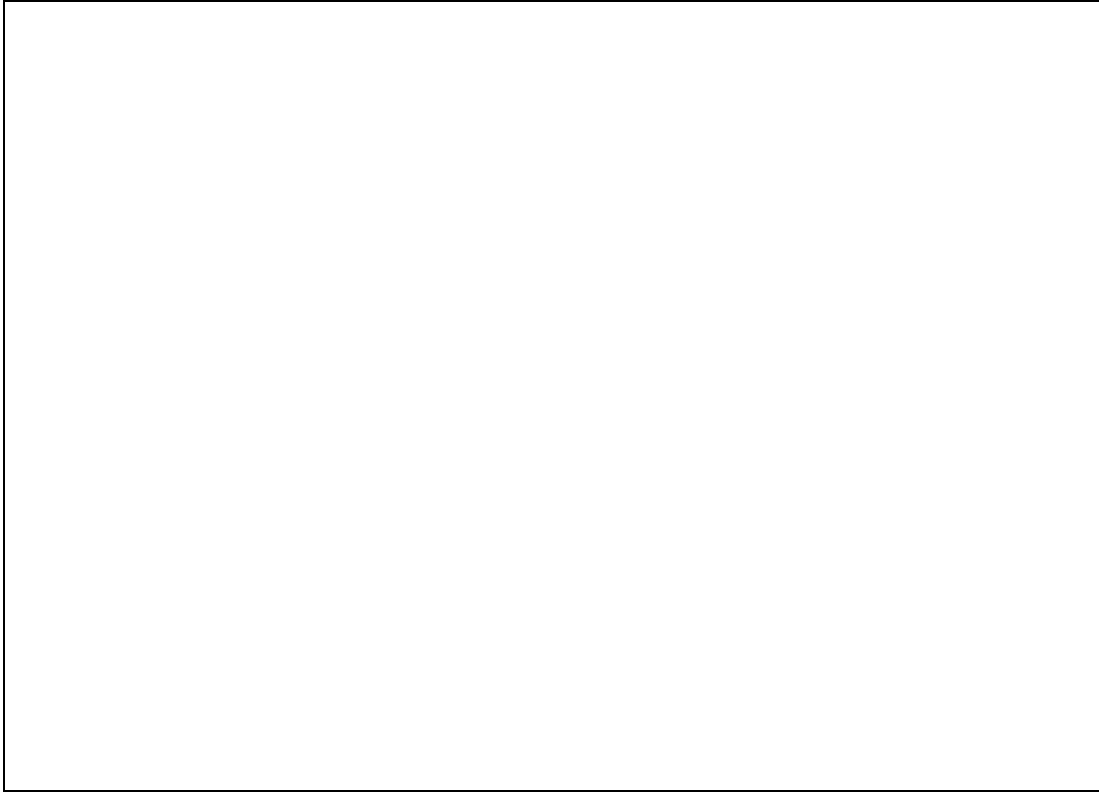
Note: 1 = video poker; 2 = slot machines; 3 = blackjack; 4 = race & sports book; 5 = roulette; 6 = table poker; 7 = craps; 8 = other; 9 = bingo. V1 = casino frequency once a year or less; V2 = casino frequency 2-12 times per year; V3 = casino frequency 2-12 times per month; V4 = do you gamble on the Internet; V5 = Internet game type race & sports book; V6 = Internet game type bingo; V7 = Internet game type casino games; V8 = have you ever visited Las Vegas; V9 = have you ever visited Atlantic City; V10 = Have you ever visited Chicagoland; V11 = age 21-35; V12 = age 36-50; V13 = age 51-65; V14 = age 66+; V15 = male; V16 = female; V17 = single; V18 = married; V19 = marital status – other.

The first dimension separated the column variables. The more mature players, and those players who did not visit casinos that often, were separated from the younger players who visited the casinos on a regular basis. The first dimension also separated those players who were most likely to have visited Las Vegas, Chicagoland, and Atlantic City, from players that had not visited those destinations at all. The second dimension separated, for the most part, the row variables. The majority of the games on the top

half of dimension two are table games, while the majority of those on the bottom half of dimension two are electronic games.

DISCUSSION AND FUTURE RESEARCH

The study revealed that different types of visitors to land-based casinos may be drawn to different types of casino games. Preferences for specific game types are separated by gender, age, previous visits to gambling destinations, whether the respondents gambled on the Internet, and what type of Internet game they preferred to play. These discoveries may provide, with further research, some interesting marketing ideas for casino managers in various gambling destinations. Because this study is exploratory in nature, the bulk of the results are useful in pointing both academicians and practioners into future areas of research that relates to gambler behavior. For example the present study indicated that young, male blackjack players were most likely to have visited Atlantic City. This poses the question "why"? What factors, other than age, gender, and a preference for blackjack might draw such players to Atlantic City and not other gaming destinations? Other factors attracting young male players may include everything from specific promotions conducted by Atlantic City, to values or beliefs of young males. An opposing approach might seek to understand why it is that women appear not to be attracted to blackjack, or Atlantic City. In addition, if women appear to be attracted to Bingo, as this study indicated, future research might compare the two game's (blackjack vs. bingo) characteristics, along with women's motives for playing or avoiding each game. Understanding underlying beliefs, or motivational factors for females may help marketers in all gaming markets to tap into those beliefs or motivations by providing casino promotions that target such a group of women.

The study clearly shows that the younger players appear to visit casinos more often than more mature players, and are more likely to visit specific gambling destinations. The convention and visitor's bureaus (CVB's) of Chicagoland, Las Vegas, Connecticut and Atlantic City, along with other gaming destinations, may use this information in order to better determine what specifically attracts this group of gamblers, or potential gamblers, to casinos or gambling destinations. Are there particular characteristics of both casinos and gaming destinations that younger travelers are attracted to? If so, what are those

characteristics and why do they attract younger travelers? Perhaps more importantly, what is it about visiting casinos or gaming destinations, at least the four gaming destinations in the present study, that the more mature players are not attracted to?

Playing casino games (poker, blackjack, and craps) on the Internet appeared to be most popular with video poker players. Although online gambling is not considered legal in the United States today, enforcing the law has proven difficult, and advocates for online gambling continue to fight for its legalization (Casino International, 2008). If online gambling does become legal again, land-based casinos may have the potential to expand their market by reaching out to video poker players via an online gaming website. To understand that potential, it is recommended that further research focus on why video poker players play certain casino games on the Internet and why they may not necessarily play the same games in land-based casinos must be undertaken.

Overall, video poker appeared to be the most popular game selected for land-based casinos, especially for those respondents who had visited Las Vegas. This observation supports Shoemaker and Zemke's (2005) study of game preferences among local Las Vegans. They also found that respondents preferred video poker to all other game types and that it was the most frequently played game. This may help casino managers, in particular in Las Vegas, to reaffirm what they are presently doing to attract video poker players, or perhaps revamp promotions in an effort to begin attracting even more video poker players.

Another interesting aspect of the results is that table poker had no strong association with any variable except the respondents who had visit Chicagoland. Table poker in the United States has grown in popularity. In 2007, 13 percent of American adults played poker (AGA, 2008). In Nevada and Atlantic City, poker players spent more than $250 million, an increase of almost 6% over 2006 (AGA, 2008). With the rise in popularity, especially among younger players, and in revenue, one would expect that table poker would be very similar to the characteristics surrounding video poker. Casinos, most of which now have new table poker rooms to attract poker players, are trying to capitalize on the popularity

of the game presently. The results of this study, however, indicate that table poker may not be such an important game of choice for casino gamblers.

While some of the results of this study are new, some of the findings may simply reaffirm what casino managers already knew. For example, more women tend to play bingo (less risk) and more men tend to play blackjack (enjoy risk) (Bruce & Johnson, 1994; Shoemaker & Zemke, 2005). Blackjack is also typically associated with younger players, while slots are typically played by slightly older players. Video poker players seemed to visit land-based casinos more often than any other type of game player. It is highly likely that casino managers already know this. A manager or owner, however, may use these results to reinforce any promotions or projects that already target specific audiences for specific games. The results may give owners/managers the assurance that they are doing the right thing. Because gaming entertainment involves much more than simply gambling, managers need to understand that they are doing everything possible to attract patrons to the casino floor.

CONCLUSION

The purpose of this study was to identify any association between the type of game land-based casino visitors played and various demographic and behavior characteristics. The different characteristics included age, gender, marital status, visitation history, frequency of casino visits, and Internet gaming preferences. The final results determined that different land-based casino visitors did indeed associate with different types of casino games.

Because this is an exploratory study, the results are not generalizable. They do, however, provide a base for further research. For example, why are women more attracted specifically to bingo? Why do Baby Boomers seem to be uninterested in gaming? There are numerous studies pertaining to what attracts people to gambling, in general. Analyzing why particular people are drawn to specific game types is, however, relatively uncharted territory. More studies linking the potential of online gambling converging with land-based gambling, and the customers attracted to those games are examples of other research that may prove useful in the future. While online gaming is very taboo today, that may change.

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