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Gambling in San Diego County: A Case Study

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GAMBLING IN SAN DIEGO COUNTY: A CASE STUDY

by

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ABSTRACT

Legal gambling operations in the United States are based on public policy decisions. Although research has shown that gambling intensity levels are related to a number of individual disorders and impose significant economic costs on society, the data is incomplete. For example, while research indicates that certain demographic categories and proximity to places of gambling are predictors of high gambling rates, there is little information on the impact of economic conditions on gambling intensity, as well as the prevalence of such behavior in specific locations. With multiple gambling venues, a growing population of the demographic groups associated with higher gambling rates, and an economy impacted by the Great Recession, San Diego County is a fertile site for a case study.

In an effort to gain a better understanding of the current prevalence rates in San Diego County, a 120 question survey was developed and administered to a sample of 13,000 registered voters via a web-based delivery system with the goal of examining the gambling intensity levels within the county – paying particular attention to the Hispanic, Asian, and over the age of 55 demographic groups. The survey also examined the impact that the economy had on gambling intensity. Using a combination of descriptive statistics, logistic regression, and non-parametric tests, results revealed that county intensity levels are high. In addition, gender was a significant predictor of past year participation, age was a significant predictor in lifetime participation, and proximity of the last gambling experience was a factor in intensity levels. Prevalence rates for Hispanics were the highest among the demographic groups, although Asians and the 55-84 age groups also had relatively high prevalence rates. The study also found the

recession impacted the number of gamblers, venues visited, and the number of visits to casinos.

Taken together, the results of this study could be used to inform policy discussions on the expansion of gambling in California to include the internet, as well as to set a baseline for state-based longitudinal studies. The results also identified a need for more information on the gambling habits of California fastest growing demographic group – the Hispanic population.

DEDICATION

To God first, then to my beautiful wife Nora, thank you for the patience and love

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To my kids – Shawn, Shannon, and Jennifer – thank you for sharing and supporting.

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CHAPTER ONE

BACKGROUND TO THE STUDY/STATEMENT OF PROBLEM

Background

Legal gambling operations in the United States are based on public policy decisions. The States and Federal governments control, among other things, the type, size, tax rates, and structure of the industry. In states with lotteries, the control goes beyond policy – the states operate gambling monopolies (Kearney, 2005).

Public policy on gambling is complicated by problems associated with gambling intensity levels. Research indicates that gambling intensity levels have a direct relationship with both individual disorders and negative externalities to society in the form of social costs (Grinols & Mustard, 2001; National Gambling Impact Study Commission [NGISC], 1999; Volberg, Nysse-Carris, & Gerstein, 2006). Negative externalities are defined as "...transactions between two parties that create costs for third parties not involved in the transactions" (Eadington, 2003, p. 48). Policy makers are faced with a situation where they must balance the financial benefits of legalized gambling against the individual and societal costs of gambling (Grinols & Mustard, 2001; National Research Council [NRC], 1999).

The issue is further complicated because gambling is a multifaceted industry with different types of gambling which have differing impacts (NGISC, 1999). The decision analyses confronting the policymakers are also convoluted because social costs related to gambling are hard not only to define, but are difficult to assign a resulting cost (Walker & Barnett, 1999). Unfortunately, the literature indicates that there is not enough information for policy makers to evaluate choices and make informed decisions (Jackson

& Walker, 2011; Kearney, 2005; NGISC, 1999; Walker & Barnett, 1999). The lack of information on gambling's impact so concerned the National Gambling Impact Study Commission that it called for a pause in gambling expansion to allow time for lawmakers to review the impact of past policy decisions (1999). This study is an effort to add to and extend the existing knowledge base.

Gambling related issues. Pathological gambling is currently identified as an impulse disorder. Impulse disorders occur when individuals are unable to control an action that is harmful to themselves or others (APA, 2000). Screening tools have been designed to identify categories of problem gamblers based on the severity of gambling intensity. A screening tool developed by the National Opinion Research Center at the University of Chicago (NORC) and used in numerous studies identifies those gamblers scoring in the problem and pathological categories as experiencing the highest intensity of gambling (Gerstein et al., 1999). Previous research has found that problem and pathological gamblers exhibit higher levels of personal, family, social, and workplace disorders than do other categories of gambling (Gerstein, et al., 1999; Grinols & Mustard, 2001; Volberg, et al., 2006). Research also indicates that certain demographic groups, including those defined by ethnicity, age, and marital status, have a greater propensity to be classified as problem and pathological gamblers, and that proximity to gambling also increases prevalence rates (Gerstein, et al., 1999; Volberg, 2002; Volberg & Bernhard, 2006; Volberg, et al., 2006; Wallisch, 1996; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001; Welte, Wieczorek, Barnes, Tidwell, & Hoffman, 2004).

Proximity to gambling for most Americans has changed since the introduction of Indian gaming. The accessibility of casino style gambling has expanded for both tribal

and non-tribal gambling operations within the United States. The gambling industry has expanded from two primary locations in Atlantic City and Las Vegas/Nevada to 22 states with non-Indian casinos and 29 states with Indian casinos (American Gaming Association [AGA], 2012; Dunstan, 1997).

Economic conditions. Economic conditions and the resulting availability of disposable income is an important factor to both the gambling intensity of the individual and to the financial health of the gambling industry. It was once thought that casino operations were recession proof (Katzanek, 2008). However, after the 2007 – 2008 timeframe, commercial and Indian casinos experienced a drop in revenues (AGA, 2010b; National Indian Gaming Commission [NIGC], 2010a; Soto, 2010d). The hypothesis that some industry insiders drew from this data was that the number of gamblers and number of trips to casinos have not decreased with the economic recession, but that the amount wagered by each gambler has decreased (Lee, 2010; Wanamaker, 2010). Intensity level is important when identifying prevalence rates since it is a critical element used in screening tools for problem gambling (APA, 2000). I have been unable to find any research that would verify the impact that changing economic factors have on gambling intensity.

Pathological gambling. Pathological gambling was first identified as a impulse disorder in 1980 in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) (APA, 1980). According to the APA:

> The essential feature of Impulse-Control Disorders is the failure to resist an impulse, drive, or temptation to perform an act that is harmful to the person or to others. For most of the disorders in this section, the individual feels an increasing sense of tension or arousal before committing the act and then experiences pleasure, gratification, or relief at the time of committing the act. Following the act there may or may not be regret, self-reproach, or guilt (2000, p. 663).

The third edition of the DSM also contained the first set of criteria used to diagnose gambling impulse disorders. The original diagnostic criteria for DSM-III were based on three basic factors: the individual's inability to resist impulses to gamble, gambling impacts on family and work relationships (arrest, financial problems, disrupted family relationships, money from illegal sources such as loan sharks, lack of financial accountability, loss of work, and deficit spending), and gambling behavior that is not driven by some other disorder (NGISC, 1999).

The current criteria have been updated to include ten items: preoccupation with gambling, tolerance (the need to gamble progressively higher amounts of money), withdrawal (when cutting down or stopping gambling), loss of control, escape, chasing (getting even after losing money), illegal acts, lies to conceal involvement, relationship consequences, and the need for a bailout. A positive score on five or more of these criteria is the determinate for the most serious gambling disorder - pathological (APA, 1994). An essential feature in the definition of pathological gambling is, "the persistence and recurrent maladaptive gambling behavior that disrupts personal, family or vocational pursuits" (APA, 2000, p. 671). By definition, the impacts of this disorder are wide-ranging. The individual, the family, and the social environment surrounding those with pathological gambling are all affected, leading to family, legal, financial, work, and criminal problems (Gerstein, et al., 1999; Grinols & Mustard, 2001; Volberg, et al., 2006). The Gambling Impact and Behavior Study established the lifetime problem and pathological gambling rates for the United States at 2.7% of the population (Gerstein, et al., 1999). The study also identified an increase over previous studies in the social acceptance of gambling as measured by lifetime and past year participation rates.

As currently planned, the next revision of the DSM is scheduled for release in 2013. It will include a change in classification for gambling behavior from an impulse disorder to a category entitled Substance-Related Disorders which will be renamed Substance Abuse and Addictive Disorders (APA, 2012b). The name for the highest level of gambling intensity will be changed from "pathological" to "disordered." The reclassification was based on commonalities with Substance Use Disorders (APA, 2012a).

The diagnostic criteria remain essentially the same except illegal acts have been dropped (APA, 2012a). This criterion was dropped based on research that indicated that it had a low prevalence and that eliminating it had little or no effect on the diagnosis (APA, 2012a). Specifically, research indicated that this symptom typically was one found in the most severe level of pathological gambling (Strong & Kahler, 2007). Disordered gambling will be diagnosed by an individual possessing a score of 4 (versus the previous score of 5) or higher of the 9 (versus the previous10) symptoms (APA, 2012a).

The change will also establish levels of severity of problematic gambling as individuals with mild disorders will have a score of 4 or 5, with moderate disorders will have a score 6 or 7, and those with severe disorders will have a score of 8 or 9 (APA, 2012a). The final major change is in the course specifier of the disorder. Previously, pathological gambling was considered chronic whereas the change now includes both episodic and chronic (APA, 2012a).

Gambling prevalence and the impact on the individual. Previous research has included a wide variety of topics from economic benefits to social ills (Evans &

Topoleski, 2002; Grinols, 2004; Grinols & Mustard, 2001, 2006). Identifying these benefits and costs is a difficult undertaking with no standard procedures established for identifying either the benefits or the costs (Grinols & Mustard, 2001). However, one area that has not been difficult to measure is gambling's influence and impact on individual behavior. Even though there are differing methodological approaches to gambling research, identifying the prevalence of problem or pathological gambling is the focus of a large number of the studies. Prevalence is defined as the portion of a population afflicted with a disease. Once a valid and reliable screen for pathological behavior is achieved, it is then possible to analyze which factors influence the disorder. Studies have found that pathological gamblers exhibit higher incidents of poor health, mental health problems, family problems, divorce, manic symptoms, depressive episodes, alcohol/drug use/dependency problems, job losses, bankruptcies, arrests, and incarcerations (Gerstein, et al., 1999; Grinols & Mustard, 2001, 2006; Volberg, et al., 2006) .

Studies suggest that Americans' attitudes on gambling and gambling participation rates have changed over the years. Gambling has become more acceptable as a form of recreation, and participation rates have increased (Gerstein, et al., 1999; Volberg & Bernhard, 2006). A major theme in the marketing of gambling is the attempt to normalize it into the culture. The idea is to make gambling seem like a rational decision about a harmless form of fun and entertainment. This normalcy stresses the fact that gambling should be looked at as proper and moral (McMullan & Miller, 2008, 2009; Monaghan, Derevensky, & Sklar, 2008).

Impacts of gambling on demographic groups. Using available screening tools, researchers have studied the relationship of a number of factors, including select

demographic categories, to problem and pathological gambling prevalence rates. The following is a brief description of some of the findings. The results discussed are based on the use of various screening instruments. I have found only three national (Gerstein, et al., 1999; Kallick-Kaufmann & Kallick, 1976; Welte, et al., 2001) and numerous state prevalence studies (one review identified 30 state studies through 1997) (NRC, 1999). Other research has been done on a limited scale in clinical and group settings; on a comparison basis using statistical analysis of secondary data such as crime, divorce, bankruptcy, and prevalence numbers; imbedded in related studies; and using statistical tools in meta-analyses of existing studies.

Gender. From the first national study conducted, participation rates and the propensity toward gambling intensity problems have been larger for males than females (Kallick-Kaufmann & Kallick, 1976). In the later major prevalence studies, however, the gap between males and females in the overall participation rates has closed; in fact, some demographic subcategories of women have higher participation rates than men in certain types of gambling (Gerstein, et al., 1999; Volberg, et al., 2006). For example, women are more than twice as likely as men to participate in bingo during the past year (Volberg, 2003; Volberg, et al., 2006). However, when considering gender as a category, men are more likely than women to participate in all forms of gambling except bingo. Additionally, men are significantly more likely than women to score in the problem and pathological ranges of the screen (Gerstein, et al., 1999; Volberg, 2002; Volberg & Bernhard, 2006; Volberg, et al., 2006). This finding held true in all studies reviewed except for studies conducted in Texas and Arizona. In Texas, there was a significant increase in gambling problems for women between 1992 and 1995 (Wallisch, 1996),

whereas in Arizona, there was no significant difference in gender in relation to gambling intensity problems (Volberg, 2003). The Arizona study speculated that the transient snowbird population may have influenced the statistical relationships. A meta-analysis which included data from 120 studies also found that being male was a significant risk factor in pathological gambling (Shaffer, Hall, & Vander Bilt, 1997).

Age. Age is a common demographic in most gambling research; however, the subcategories within this demographic are not standard. Additionally, some studies differentiate between gambling participation and intensity descriptions while others do not. These variations have led to some minor differences in results of the studies. The earliest national gambling study shows a decline in gambling participation with age (Kallick-Kaufmann & Kallick, 1976). Analyses conducted on the results of other earlier studies indicate that problems with gambling intensity also decline with age. One review of studies between 1986 and 1993 found that problem gamblers were more likely to be younger that 30 (Volberg, 1996) and another found that only 3 of 17 studies identified any larger intensity problems occurring in age groups greater than 30 (NRC, 1999). Findings of the other two national studies do reflect some differences in age results. One found that the two age categories with highest gambling intensity problems were the 31-40 and 18-30 (Welte, Barnes, Wieczorek, Tidwell, & Parker, 2002), while the other study contained some variation depending on how the survey interview was conducted. Using just the results of the telephone survey, the highest intensity levels were in the 18-29 age groups but when the patron surveys were included, the intensity levels were very similar across all age groups except the 65+ group which was lower (Gerstein, et al., 1999). In later gambling studies, age became less of a factor in gambling participation. For

example, in studies conducted in New Mexico and Arizona, age was not a statistically significant factor in prevalence to gambling problems (Volberg, 2003; Volberg & Bernhard, 2006), while in Nevada, weekly and monthly gamblers were more likely to be over the age of 55 (Volberg, 2002). The study conducted by the National Gambling Impact Study Commission found that when compared to an earlier study the age of those individuals participating in gambling was getting older and that the category with the greatest increase was the over 65 group (Gerstein, et al., 1999).

Ethnicity. One trend that was similar across studies was the higher prevalence of problem and pathological gambling within minority populations. African Americans were consistently identified as being a high risk group for gambling problems (Gerstein, et al., 1999; Kallick-Kaufmann & Kallick, 1976; Volberg, et al., 2006; Welte, et al., 2001). Studies also found that being Hispanic was a significant factor in those who were screening in the various at-risk, problem, and pathological intensity categories (Volberg, 2003; Volberg & Bernhard, 2006; Volberg, et al., 2006; Welte, et al., 2001).

According to an article published in the *Journal of Immigrant and Minority Health*, there is a perceived increase in gambling issues within the Asian community (Fong et al., 2010). Part of the perceived issue of gambling problems could be a result of the intense marketing campaigns that the casinos are directing at Asian populations (Smith, 2006). Despite this concern, two of the most recent studies did not find any evidence to support this alarm (Fong, et al., 2010; Volberg, et al., 2006). A history of those in the Asian category's gambling participation in the United States is difficult because many of the studies have grouped them in the "other" category (Gerstein, et al., 1999; Kallick-Kaufmann & Kallick, 1976). One national study did identify that Asian

respondents were more likely than Caucasians to have intensity issues reaching the problem level; however, not at the pathological level (Welte, et al., 2001, 2002).

Employment. Employment is not a category that was consistently tested throughout all of the studies. In two major analytical reviews of gambling studies, in fact, the category was not used in the analysis in one while in the other only seven of 33 studies used employment to compare intensity rates. The results of these seven studies indicated no difference in the gambling intensity rates of those who were employed (NRC, 1999; Shaffer, et al., 1997). In later studies the results were very different; for example, in several state studies the rates for gambling problems were much higher for individuals who were unemployed (Volberg, 2003; Volberg & Bernhard, 2006; Volberg, et al., 2006).

Marriage. Marriage was another category that was not reported in all studies. Being "not married" was generally broken down into three separate categories – widowed, divorced/separated, and never married. Several major studies found that individuals in the divorced/separated and never married categories were more likely to experience gambling intensity problems, with those in the never married category more likely to experience pathological problems (Gerstein, et al., 1999; Volberg & Bernhard, 2006; Volberg, et al., 2006; Wallisch, 1996). A California study found that while gambling participation rates for married individuals are higher than those who are unmarried (never married/divorced/cohabitation), problem and pathological gambling still occurred more frequently in unmarried populations (Volberg, et al., 2006). In an Arizona study, marriage was not a statistically significant factor in pathological gambling; however, weekly gamblers were more likely to be unmarried (Volberg, 2003).

As previously noted, Arizona's transient snowbird population could have had an impact on these results.

Gambling losses. There are validity questions surrounding the accuracy of self-reporting gambling losses which makes it a difficult variable to evaluate (Volberg, Gerstein, Christiansen, & Baldridge, 2001). These questions encompass adequacy of sample frames, non-response bias, question design based on differing types of gambling, and individual recall of types of losses and wins. Overall, it is estimated that the self-reporting is not very accurate which directly impacts the true reporting of losses (Volberg, et al., 2001). However, the California study found that except for the possibility of weekly internet gamblers, casino gamblers lost the most money in each gambling prevalence category. The same study found that the losses were ten times higher for casino gamblers in the problem and pathological categories as compared with those who scored in the low risk category (Volberg, et al., 2006).

Income. The studies on income in relationship to gambling intensity problems have mixed results when it comes to statistical significance. The first national survey on gambling found a greater participation rate with higher income levels but a greater proportion of income being lost by lower income categories (Kallick-Kaufmann & Kallick, 1976). Other studies have also identified a general trend of higher income brackets showing more participation but the lower brackets having more prevalence toward problem and pathological gambling (Gerstein, et al., 1999; Volberg, 2003; Volberg, et al., 2006). In the other two national studies, the results were similar with increased participation at higher incomes and problems with intensity being more likely in lower incomes (Gerstein, et al., 1999; Welte, et al., 2002); however, only the Welte

study found significance with income and the relationship with pathological gambling. The state studies reviewed also found similar relationships with certain categories of income being significant in some studies while not in the others (Volberg, 2002; Volberg & Bernhard, 2006; Volberg, et al., 2006).

Education. Most of the studies reviewed did not find the level of education to be a significant factor in determining gambling prevalence (Gerstein, et al., 1999; Volberg, 2002; Volberg & Bernhard, 2006; Volberg, et al., 2006; Wallisch, 1996). The one exception was in New Mexico where problem gamblers were significantly less likely to have a college degree. While education in general may not have been significant, there were various subcategories that were; for example in California, those who have gambled in the past year were significantly more likely than the general population to have attended college, and problem gamblers were significantly less likely than low or at risk gamblers to have graduated from high school or college (Volberg, et al., 2006). While not statistically significant, findings from other studies indicated that those individuals having a higher education reflected more participation, but those whose education level include "some college" and "high school or below" tended to have higher rates of problem and pathological gambling (Gerstein, et al., 1999; Kallick-Kaufmann & Kallick, 1976; Volberg, et al., 2006; Wallisch, 1996).

Impact of the Indian Gaming Regulatory Act. The passing of the Indian Gaming Regulatory Act in 1988 greatly expanded the availability of the gambling industry in the United States. In the years prior to the act, there were only two locations for casino gambling, Nevada and Atlantic City (Dunstan, 1997). Since the passing of this act, other types of casino gambling have been approved in the United States, but none

have matched the magnitude and geographic reach of Indian gaming. Indian gambling operations are now located in 29 states (AGA, 2010a). The National Indian Gaming Commission lists 421 Indian gambling operations on its financial reports (NIGC, 2011a). However, the National Indian Gaming Commission also makes no claims to the accuracy of its lists. The American Gaming Association lists 424 Indian casinos in its State of the States Report (2012). In comparison, there are now 225 non-Indian casinos/race track casinos operating in 20 states other than Nevada and New Jersey (AGA, 2012).

Economic impacts. For years, many experts within the gambling trade thought that the casino portion of the gambling industry was recession proof (Katzanek, 2008). However, revenue numbers demonstrate this is not the case for either commercial or Indian casinos. Starting in 2007, economic conditions began to impact the commercial casino sector. Based on industry numbers, there was a 10% drop in revenues from 2007 to 2009 at commercial casinos in the United States (AGA, 2010b). Revenue numbers for Indian casinos are not always easy to obtain or verify, but it would appear that their revenues did not show the same level of decrease as the commercial casinos. The magnitude of the revenue loss at the Indian Casinos also differed by geographic region. While different sources cite different numbers, the revenue estimated decrease for the Indian sector from 2008 to 2009 ranged from 1% (NIGC, 2010a) to 20% (Soto, 2010d). The National Indian Gaming Commission tracks Indian casino revenues by region across the United States. After 2007 and until 2011, at least one (usually multiple) region(s) experienced a decrease in revenues every year (NIGC, 2009, 2010c, 2011b, 2012b). In summary, both commercial and Indian gaming have been negatively impacted by the economy. The industry has seen an increase in revenues over the past two years but the

impacts of the recession lingers as the commercial industry is still well below 2007 levels even with new casinos in populous states like Maryland and New York (AGA, 2012). The Indian casinos' recovery has varied by region even though there are 16 more facilities than in 2008 revenue peak (NIGC, 2012a).

San Diego County

San Diego County is located in the southwestern part of California. It is bordered to the south by the nation of Mexico, to the east by Imperial County, to the northeast by Riverside County, and to the north by Orange County. While the county covers over 4200 square miles, it is roughly in the shape of a square; therefore, the north-south span between borders is only approximately 65 miles and the east-west span is only around 86 miles (Union-Tribune Publishing Company, 2002). The county has a diverse population of just over 3 million. The largest city in San Diego County is the city of San Diego with a population of just over 1.3 million which makes it the 8th largest city in the United States (Mackrun & Wilson, 2011).

As noted above, the county has a racially diverse population. While those identifying as White are still a majority, the Hispanic population was the fastest growing from 2000 to 2010. The Asian population has also had significant growth over the same time period. San Diego County's median age is 34.6. This age is over a year older than the median age of the 2000 Census numbers. The fastest growing age groups in the county are those who are in the 45–84 span with the fastest being those in the 55–59 group. However, there was also growth in those identifying as being in the 14-24 age group (U.S. Census Bureau [USCB], 2000, 2010).

One of the unique facts about San Diego County is that it is home to more federally recognized Indian Tribal Nations (17) and Indian reservations (18) than any other county in the United States (San Diego Association of Governments [SANDAG], 2010b; University of San Diego [USD], 2012). The reservations are small, containing only 4% of the county's total land area (USD, 2012). At 0.4% of the total population, the Native American/Alaskan Indian population is also small (USCB, 2010). Although the land mass and populations are diminutive, the Indian presence within the county has greatly impacted the residents' accessibility to gambling. While the county has always had accessibility to southwestern Nevada and Las Vegas via a short car trip, the passage of the Indian Gaming Regulatory Act and the resulting emergence of Indian casinos in California and specifically in both San Diego and Riverside Counties has redefined gambling proximity.

California now has the second largest number of Indian gambling operations in the United States. The National Indian Gaming Commission lists 70 gambling operations in California based on multiple sites and 61 based on financial reports by region (NIGC, 2012a, 2013). The California Gaming Control Commission lists 59 casinos in 26 counties; however, this list does not contain more than one operation per tribe (2012). Several California tribes run multiple site operations (NIGC, 2013). San Diego County has nine Indian casinos within its borders. Along with Riverside County, San Diego County has the largest concentration of casinos per county in the state (California Gambling Control Commission [CGCC], 2012).

In addition to the casinos, the county has four card clubs, a horse race track, and multiple lottery outlets. If, as past research has shown, proximity to places of gambling

and certain demographic categories are predictors of higher gambling rates, then San Diego County's population has a high exposure to problem gambling factors and is a prime location for a case study.

I could not find any prevalence studies that had been conducted on San Diego County; however, there are indicators that would point to gambling intensity problems within the county. In 2006, there was a prevalence study conducted in the State of California. This study included responses from a region inclusive of San Diego County (Volberg, et al., 2006). San Diego County was grouped into a region with Orange and Imperial Counties. According to the study, this region had the highest rate of problem and pathological gamblers in the state at 4.5% (Volberg, et al., 2006). In fact, of the states included as a comparison in the state-wide study, San Diego's regional prevalence rates were higher than any included state with the exception of Nevada (Volberg, et al., 2006). In addition to this study, a review of calls coming into the California Council on Problem Gaming's Help Line found that 10.7% of the incoming calls originated from two of the area codes located completely within San Diego County and an additional 6.4% originated from an area code that includes portions of the county (California Council on Problem Gambling [CCPG], 2010).

The California prevalence study used the same screening tool as a national study conducted by the National Gambling Impact Study Commission. These two studies established the lifetime prevalence of problem and pathological gambling rates for both the United States (2.7%) (Gerstein, et al., 1999) and the State of California (3.7%) (Volberg, et al., 2006). While statistically it is impossible to compare the results from national and state studies, there are two important differences worth noting. The first

difference is the timeframe between the two studies (1999 and 2006), and the second is the difference in the prevalence rate of problem and pathological gambling. It should be noted that there were major changes in the gambling industry during the timeframe between the studies. The passage of the Indian Gaming Regulatory Act in 1988 greatly increased the number of gambling outlets available (Dunstan, 1997). During the period between the studies, the Indian casinos matured as the number of locations increased and revenues grew by 270% (NIGC, 2004, 2010b). Both studies also identify an increase over previous studies in the social acceptance of gambling as measured by lifetime and past year participation rates. San Diego would seem to be following a national trend in greater acceptance of and participation in gambling, as a 2007 opinion survey found that 63% of the respondents had gambled at a county casino and over 60% "strongly" support having casinos in the county (Sciglimpaglia, 2007).

As previously noted some studies have shown that there is a strong relationship between proximity to gambling sites and problem gambling prevalence rates (Gerstein, et al., 1999; Welte, Wieczorek, et al., 2004). While this relationship was not found throughout the state of California during the statewide prevalence study (Volberg, et al., 2006), findings discussed above indicate that there could be concerns with proximity for San Diego County.

Additionally, at least three of the demographic groups experiencing population growth in San Diego County over the past 10 years — those who report as Hispanics, Asians, and individuals over the age of 55 — have also been identified as categories of concern in gambling research (Gerstein, et al., 1999; Nower & Blaszczynski, 2008;

SANDAG, 2011; Smith, 2006; USCB, 2000; USCB, 2010; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2004).

From an economic impact perspective, San Diego appears to reflect the same trends as the rest of the country and is a good location for a case study on the effects of the economy on gambling intensity. Economic indicators, such as unemployment and housing costs, suggest that the county was hit harder than the average national rates. The unemployment rate was higher, the median house prices were higher, and it has taken longer for the leading economic indicators to recover as compared with national averages (County of San Diego [CSD] & San Diego Regional Chamber of Commerce [SDRCC], 2010). The downturn in the economy has also negatively impacted County casino revenues. One casino estimated that their revenues were down 20% to 30% (Salgado Jr., 2008). In the Nation Indian Gaming Commission region that includes California, the revenues fell 13% from 2007 to 2010 (NIGC, 2009, 2011b). The economic conditions forced La Posta Casino to close in 2012 (Martinez, 2012).

With multiple gambling venues and with the county's economic conditions, San Diego appears to be a microcosm of both the types of gambling available in the United States and of economic factors. It presents an opportunity to study the impact of a concentration of casinos in a large urban area as well as several other indicators of problem gambling identified by previous research.

For these reasons, this study focused on the gambling intensity levels of the residents of San Diego. I analyzed the prevalence rates, the prevalence rates present in the demographic categories of Hispanic, Asian, and older (over the age of 55) gamblers, and the impact of the changing economy on individual gambling intensity.

Problem Statement

After conducting a review of the research, I was only able to find two nationwide gambling prevalence surveys that had been conducted after the implementation of the Indian Gaming Regulatory Act. One national study was a telephonic survey funded by a grant from National Institute on Alcohol Abuse and Alcoholism (Welte, et al., 2001). The resulting data have been analyzed for various factors influencing gambling (Welte, et al., 2001, 2002; Welte, Barnes, Wieczorek, Tidwell, et al., 2004; Welte, Wieczorek, et al., 2004). The other survey was done in 1999 by the NORC (Gerstein, et al., 1999). The survey was commissioned by the National Gambling Impact Study Commission as part of a larger study. NORC created a new screening tool during the development of the survey. The results of the study using this tool have been cited in a large number of reports and studies on gambling conducted since 1999. Due to the rapid growth in the Indian gaming industry, both of these national studies as well as many of other studies on the topic of gambling were conducted prior to the full deployment and maturation of Indian casinos in both the country and the region; for example, Indian casino revenues went from $9.8 billion in 1998 (from 310 operations) to $27.2 billion in 2011 (from 421 operations) (NIGC, 2004, 2012a).

I could find no prevalence studies specifically for San Diego County, although there was an opinion survey done in 2007 (Sciglimpaglia, 2007). Data seem to be lacking on three of San Diego's growing population groups – individuals who are Hispanic, Asian or over 55 years of age (Fong, et al., 2010; Gerstein, et al., 1999; Nower & Blaszczynski, 2008; Welte, et al., 2001; Welte, Barnes, Wieczorek, Tidwell, et al., 2004). While raw data and interviews with key Indian leaders indicates that the changing

economy has had a negative impact on both the gambling industry and gamblers over the past five to six years (AGA, 2010b; NIGC, 2010c; Soto, 2008), I have been unable to find any research on the economic impacts on gambling intensity .

Purpose of the Study

The purposes of the study were to gain an understanding of the current prevalence of gambling in San Diego County with its concentration of casino gambling within a small geographic but largely urban area, and to add to the knowledge base regarding the gambling intensity levels of those who are in the Hispanic, Asian, and over the age of 55 demographic groups. The final purpose was to estimate the impact that the economy had on gambling intensity in San Diego County. This was a quantitative study which analyzed gambling data on experience and behavior from a sample selected from county election registration records. The survey instrument used was taken from a previous gambling prevalence studies conducted in California and other locations.

Research Questions

This study answered the following three questions:

1. What is the extent of problem/pathological gambling in San Diego County?
2. To what extent does gambling prevalence in the County differ among select demographic groups - especially Hispanics, Asians, and individuals over 55 years of age?
3. To what extent has the Great Recession influenced gambling intensity in San Diego County?

CHAPTER TWO

REVIEW OF THE LITERATURE

The literature on gambling research is quite extensive. One meta-analysis found over 151 prevalence studies conducted in the United States and Canada prior to 1997 (Shaffer, Hall, & Vander Bilt, 1999). After conducting a review of the research, I was only able to find three prevalence studies completed on a national basis within the United States. The first national study was conducted by the Commission on the Review of the National Policy Toward Gambling and was conducted prior to the implementation of both the Indian Gaming Regulatory Act and the DSM gambling intensity screening criteria (U.S. Commission on the Review of the National Policy Toward Gambling [USCRNPTG], 1976). The other two national studies were conducted after the DSM criteria were published. One of these was a telephonic survey conducted by John Welte and others. This survey had a sample of over 2600, and it appears that the data has been analyzed for various factors that might influence gambling (Welte, Barnes, Wieczorek, & Tidwell, 2004; Welte, et al., 2001, 2002; Welte, Barnes, Wieczorek, Tidwell, et al., 2004; Welte, Wieczorek, et al., 2004). The final national survey was done in 1999 by NORC (Gerstein, et al., 1999) and was commissioned by the National Gambling Impact Study Commission as part of a larger study on gambling in the United States. A new gambling prevalence screening tool was designed and used for this study. One of the Commission's tasks was to conduct a comprehensive study of gambling in the United States, and to date, it is the most comprehensive with the research portion alone using five different data collecting initiatives (Gerstein, et al., 1999).

While there have been many statewide studies, this review focused on the state studies that were conducted using the newest gambling screening criteria and/or had large

Hispanic/Senior populations by proportion. I found only one statewide survey involving California. This study was also done by NORC and was commissioned by the California Office of Problem and Pathological Gambling (Volberg, et al., 2006). I could find no prevalence studies specifically on San Diego County; however, there was an opinion survey done in the county in 2007 (Sciglimpaglia, 2007).

Gambling in San Diego County has a long history culminating with a large influx of Indian owned casinos over the past 25 years. This section will review the history of gambling in the county; the use of prevalence studies in research on gambling intensity problems; the relationship between proximity and gambling; the impact of gambling on the demographic categories of Hispanic, Asian, and individuals over the age of 55; and the impact of the economy on San Diego County and the gambling industry.

The History of Gambling in San Diego County

The history of gambling in San Diego probably dates further back than the first European influence. Historians have documented unique Indian games such as Peon (a guessing game), arrows, horse racing, foot races, wrestling, games of chance, and team games among the Indians, all of which were wagered on (Lovell & Frazer (Ed.), 1976; Valley, 2003). In the years after the arrival of the first Europeans, gambling still maintained a strong presence among the Native American population as well as a growing population of individuals with a heritage of mixed races. In the 1780s, the inhabitants of the pueblos of Southern California were described by Professor Charles E. Chapman as a "gambling lot" (Servin, 1973, para. 34).

Gambling continued to have a presence with both the Europeans and the Native Americans throughout San Diego and the surrounding areas during the early and mid-

1800s (Bibb, 1991; Pourade, 1961). Horse racing and Indian games were among the favorite gambling venues throughout this timeframe. In the 1820s, a visiting French ship captain, Auguste Bernard Duhaut-Cilly, noted that the chief fault among men in the southern California settlements was gambling (Pourade, 1961). During this period, Pio Pico, the Governor of California, struggled with gambling debts and eventually lost his entire fortune and properties before he died in 1894 (Couts & Scharf (Ed.), 1976).

In the mid-1800s, people began to flock to California in pursuit of gold. Gambling was unchecked at this time (Pourade, 1963; Symthe, 1907). The Native Americans also continued to gamble. In a report to the Commissioner of Indian affairs, John Maltby (the Superintendant of Indian Affairs for California) described the Indians at Pala as becoming " demoralized indolent, lazy, fond of Liqueurs, and gambling, and other vices which has been the invariable result" (Webber, 1975, para. 9). Matlby blamed many of the Indians' vices on the class of white man in which they were coming into contact (Webber, 1975).

Starting in the 1870s, the combination of new railroads, the increasing population, a gold find in the mountains east of San Diego, and the arrival of the Chinese all contributed to the first economic boom in San Diego. This economic explosion lasted through the 1880s and into the 1890s (Pourade, 1964; Symthe, 1907). The housing and trade industries were not the only sectors that boomed, as gambling and other social ills, such as prostitution, also experienced good economic times. San Diego became the focal point for gambling in the region during this time period because the gambling boom in San Francisco and the rest of California had peaked, along with the gold rush, in the late 1850s (Dunstan, 1997). The gamblers had a tendency to follow settlers, gold and

speculators (Dunstan, 1997; Pourade, 1964) . There was an influx of professional gamblers into San Diego during this period (MacPhail, 1974; Pourade, 1964).

The center for San Diego's gambling, prostitution, and opium dens was a district in the Broadway area of downtown given the name Stingaree (MacPhail, 1974; Pourade, 1964) . At the height of the boom period, there were over 100 gambling houses and dance halls in the city of San Diego (Pourade, 1964). Old West legend Wyatt Earp moved to San Diego and opened three gambling halls (MacPhail, 1974; Pourade, 1964). The gambling was so open and pervasive that it was done on the sidewalks and on Sunday (Pourade, 1964; Strudwick, 1960; Symthe, 1907).

The great first economic boom of San Diego ended in the 1890s. Even though hard times hit the gambling industry and there were efforts to clean up the morals of the city, gambling and prostitution persisted into the 1900s. A major effort to crack down on gambling and prostitution came as a part of a three year effort to clean up the city prior to the opening of the 1915 Panama-California Exposition (MacPhail, 1974). The effort to stop gambling during this era was so unrelenting that the official records between 1912 and 1937 showed that gambling was the most cited crime in San Diego (Crawford, 1987).

By this time reservations had been created in San Diego County, and local Native Americans had been moved onto them. From the outset there were quality of life and funding issues on the reservations. Eventually, a school was built on the Campo reservation. It appears that gambling remained popular among the Indians as a 1925 report from the Campo Indian School to the Mission Indian Agency recommended that a good missionary be assigned to address concerns over the Indians' drinking, gambling habits, and their associations with Mexican nationals (T. Jacques, 1983). Also during this

time period, gambling was legalized in the Northern Territory of Baja California (Bonifaz De Novelo, 1983).

While the moral clean up started in 1912, it was not completely successful, as the arrest records cited above would attest, and gambling persisted in San Diego. Once the Exhibition was over, gambling continued until it flourished again in the 1930s although it was mostly restricted to one area in downtown (MacPhail, 1974). The 1920s brought Prohibition to San Diego and created an opportunity for Mexico. The gamblers followed the alcohol south. Tijuana offered dog races, race tracks, bars with slots, and then casinos. The industry was so successful that many Americans were interested in investing in Mexico's gambling business, but the boom did not last long. Prohibition ended in the early 1930s, and there was a move in Mexico to ban gambling. In 1935, Mexico banned all forms of gambling except horse racing. The golden era of gambling in Tijuana was over (Bonifaz De Novelo, 1983; Eddy, 1995; Pourade, 1967).

Gambling was a major political issue in San Diego during the thirties. Mexico had banned all gambling except horse racing, and San Diego had initiated another crackdown on gambling in preparation for the California Pacific International Exposition in 1935 and 1936. Gambling was specifically prohibited from the exposition; however, there were efforts to get gambling into parts of the exposition, in some cases as games of skill. The police continued to crack down on gambling (Pourade, 1967; Richard Amero Collection MS 76, 1936).

At the time of the crackdown, a group of businessmen with reported ties to organized crime anchored the gambling ship Monte Carlo off of Coronado just outside of the state's legal boundaries (Graham, 2007). A water taxi service was started to ferry

customers to the off-shore casino. There was even some speculation that the crackdown and prohibition of gambling from the California Pacific International Exposition was done in collusion to drive business to the gambling ship (Richard Amero Collection MS 76, 1936). Many of the local leaders objected to the ship's presence and operation. Plans were initiated to regulate the water taxi business but Mother Nature beat the policy. The Monte Carlo had only been anchored a few months when a storm destroyed the ship and ran it aground in Coronado where its remains to this day (Graham, 2007; Lafee, 2010). However, gambling was not finished in San Diego. California passed what became known as the Horse Racing Act of 1933 which legalized pari-mutuel betting in the state and led to the opening of the Del Mar race track in 1937 (Dunstan, 1997; Pourade, 1967).

After the California Pacific Exposition closed, illegal gambling reappeared in San Diego. For a time, both the city council and police department ignored gambling -- justifying it as a necessary part of a town that was so economically dependent on tourism and the military. This new age of gambling existed until the early 1940's when the mayor was able to break the alliance between the council and the police department, and then initiated actions to rid the city of illegal gambling (Pourade, 1967, 1977).

I could not find a great deal of information on the years between 1942 and 1981. Card clubs have always been legal in California and have existed in San Diego County for years. Card Clubs are authorized to offer games that have not been specifically prohibited. They are licensed locally and must register with the state (Dunstan, 1997). Currently, there are four card clubs legally operating in San Diego County (CGCC, 2011). In 1981, the Barona and Sycuan Bands of Indians opened bingo halls in the county (Carter, 2006). In 1984, the voters passed a proposition that made the lottery legal

in California (Dunstan, 1997). In 1987, the State of California lost a lawsuit over gambling that it had brought against the Cabazon Band of the Mission Indians. The state sued because the tribe did not meet state gaming regulations. Based on this case, the United States Supreme Court ruled that the states did not have the right to regulate Indian gaming. In 1988, Congress passed the Indian Gaming Regulatory Act which defined the types of gambling authorized and established the regulations for the implementation of gambling on Indian lands (Dunstan, 1997). Under this regulation, the states were authorized to deal individually with the Indian tribes to negotiate the terms of gambling within the state.

The governor of California entered into the first gambling compacts with the tribes in 1998; though, there was an issue over slot machines. Slot machines are the biggest money generators in casinos, but were illegal in California. In 1998, California voters approved Proposition 5 which legalized slot machines. However, in 1999, the State Supreme Court struck down Proposition 5 on the basis that it was statutory in nature and that it was the state constitution that prohibited slot machines; therefore, it would take a constitutional amendment to legalize the use of these machines. The voters then approved Proposition 1A which modified the constitution and now provides the basis for slot machines in tribal gambling venues (Simmons, 2006). In 1991, the Viejas Band opened a casino in San Diego (Carter, 2006). The county currently has nine casinos. Along with Riverside County, San Diego has the largest concentration of casinos in the state (CGCC, 2012).

Prevalence Studies and Gambling

Prevalence studies are defined as "the number of cases of the disease under study existing in the source population at a particular time" (Sleigh, 2004, p. 33). They have been the primary tool for organizations and governments to study the extent and impact of gambling intensity (Volberg, 2004). Federal and state governments have used prevalence studies to determine gambling intensity levels and their impact on the population since the mid-seventies (NGISC, 1999; NRC, 1999; USCRNPTG, 1976; Volberg, 2002, 2004; Volberg & Bernhard, 2006; Volberg, et al., 2006).

Two key components of prevalence studies are the defining of the population and the defining of the factors (exposure) being studied. The intensity level of the exposure of the disease being studied is used to determine the health status of the population (Sleigh, 2004). While prevalence studies have been used to study gambling, there have been some issues in the defining of the factors (exposure). The criteria for defining problem gambling are relatively new and have changed over the years. There is no standard survey tool, and the definitions of intensity levels below the clinical level are not well defined (Aasved, 2003; Reith, 2003). One of the earliest screens for problems with gambling intensity was the "Twenty Questions" developed in 1958 by Gamblers Anonymous; however, this instrument was not developed by medical professionals and was not checked for reliability and validity until 2008 (Toneatto, 2008). This tool has been used in screening programs such as Gamblers Anonymous, but it has not been accepted by the medical field nor widely used in other research (Aasved, 2003).

The first prevalence study used to identify a national gambling problem intensity level was conducted by the U. S. Commission on the Review of National Policy Towards

Gambling. In this report, severe gambling intensity levels were identified by the term "compulsive gambling" which was defined as, "persons who gamble so heavily that it threatens their family and work relationships" (1976, p. 57). At the time, the report noted that there were no credible estimates available on the percent of the population that could be considered to be compulsive. One of the commission's specific tasks was to establish that estimate. In order to accomplish this assignment, the study included a small sample taken from Nevada. Eighteen questions were developed and were "used to identify which persons in the survey appeared to have the same characteristics as compulsive gamblers" (1976, p. 73). Using this methodology, the report estimated that 0.77% of the national sample could be classified as "probable" compulsive gamblers, with another 2.33% as "potential" compulsive gamblers (1976). The report also noted that this finding could not be considered conclusive because of a lack of research on compulsive gambling (1976).

In 1980, the APA defined the highest level of gambling intensity as pathological gambling and categorized it as an impulse disorder in the third edition of the DSM (1980). The third edition of the DSM also contained a set of criteria for diagnosing gambling impulse disorders. The original diagnostic criteria for DSM-III was based on three basic factors: the individual's inability to resist impulses to gamble, gambling impacts on family and work relationships (there were seven factors within this criterion), and gambling behavior that is not driven by some other disorder (APA, 1980; NRC, 1999). This was a major change in the classification of problems related to gambling intensity because pathological gambling had now been identified as a medical problem (Aasved, 2003). The criteria contained in the third and following editions of the DSM

provided the basis for much of the future prevalence research. However, not all researchers agreed with the inclusion of gambling into the DSM and the resulting medical classification of what they considered to be a behavior deviation that could be socially or environmentally constructed (Dickerson, 2002; Rosecrance, 1985, 1986; Shaffer, 2003; Wedgeworth, 1998). For example, Wedgeworth noted that the definition that led to this criteria had not been developed scientifically but simply added to a medical model developed for substance abuse (1998).

Based on the criticisms of the DSM-III methodology, the criteria for pathological gambling underwent a major change in the next revision of the DSM (III-R) (APA, 1987). All of the diagnostic criteria contained in this revision were changed to very closely reflect the criteria for substance dependence (Aasved, 2003; Slutske, Zhu, Meier, & Martin, 2011). At this point (1987), there was no standard or validated testing screen used when diagnosing and establishing the levels of problem gambling based on the DSM criteria (Lesieur & Blume, 1987). The South Oaks Gambling Screen (SOGS) was developed in 1987. This screen was based on the DSM-III criteria and was correlated with DSM-III-R (Lesieur & Blume, 1987). The screen was a twenty question instrument. A positive score on five or more of the questions indicated probable pathological gambling. The screen was developed in a psychiatric hospital, and it was validated using hospital employees, a sample from Gamblers Anonymous, and university students (Lesieur & Blume, 1987). Over the next several years, SOGS would become the standard screening tool used in prevalence studies on gambling, and the instrument with which future tools would be validated (Abbott & Volberg, 2006; Slutske, et al., 2011;

Volberg, 2004). One researcher estimated that SOGS had been used in over 50 prevalence surveys worldwide (Volberg, et al., 2006).

In 1991, SOGS was revised to include screening for current as well as lifetime gambling rates – SOGS-R, with current being defined as either actions over the past 6 months or the past 12 months (Abbott & Volberg, 2006). A national prevalence survey was conducted in the 1990-2000 timeframe that used the SOGS as one of the instruments to evaluate the data and establish a national prevalence rate. The study defined current as 12 months and found that the current prevalence of pathological gambling rate in the United States was 1.9%. The study also measured for problem gambling which in this survey was a level of harmful gambling that fell below the pathological rate. The current year problem gambling rate (including pathological) was 5.5%. The lifetime rates for problem gambling were 4.0% (pathological) and 11.5% (both pathological and problem) (Welte, et al., 2001).

In 1994, the DMS-IV was published. The criteria for diagnosing pathological gambling were once again changed. While the DSM-III was based on actions and consequences of the individual and DSM-III-R was based on clinical diagnosis similar to addiction, the DSM-IV was a mixture of both. The screen is composed of 10 questions of which a respondent must have 5 positive answers to be considered in the pathological range. Of the 10 questions composing the screen, six were carried forward from the DSM-III-R, three questions were similar to ones contained in the DSM-III, and one was new (APA, 1994; Slutske, et al., 2011). As the interest in gambling has grown, there have been multiple survey tools developed for conducting prevalence studies. One study of literature noted 20 survey instruments (Abbott & Volberg, 2006) while another noted

25 instruments (NRC, 1999). While there is no standard survey instrument, the DSM-IV criteria is considered the gold-standard for conducting prevalence research and has been used in numerous prevalence studies (Abbott & Volberg, 2006).

In 1996, Congress passed Public Law 104-169 which established the National Gambling Impact Study Commission. The general task of the commission was to "conduct a comprehensive legal and factual study of the social and economic impacts of gambling in the United States...communities and social intuitions..." (NGISC, 1999, Introduction Section, para. 1). Part of the sub-tasking was an assessment of pathological or problem gambling. To accomplish this task, the Commission had NORC conduct a national prevalence study. After evaluating the alternative screening criteria and survey instruments, NORC created its own instrument based on the DSM-IV criteria. The instrument was named NODS which is a merging of the acronyms of NORC and DSM. The screening tool consists of 17 past year gambling questions and 17 lifetime questions. The increase in the number of questions was based on NORC's opinion that some DSM-IV screening criteria could not be adequately answered in one question (Gerstein, et al., 1999). The study also set standards for the subclinical (those below pathological) categories of gambling. Under the NODS criteria, an individual who had lost $100 or more in a single day or across a single year and had: a score of five or more indicated a pathological gambler; a score of three or four indicated a problem gambler; a score of one or two indicated an "at risk" gambler; and a score of zero or who had never lost $100 or more in a single day or across a single year indicated a "low-risk" gambler. The study determined the prevalence rate for past year gambling to be 0.6% at the pathological level and 0.7% at the problem level (this problem figure does not include pathological as noted

in the previous national study). For life-time gambling, the prevalence rate was 1.2% at the pathological level and 1.5% at the problem level (Gerstein, et al., 1999). Since completion of the national study, the NODS has been used in at least seven state prevalence studies (Volberg, et al., 2006).

As noted above, a second national prevalence study was conducted during the same timeframe as NORC. While the study used the SOGS as one instrument to evaluate its data, it developed its own survey question sets to capture the data. According to the researchers, the question set design was influenced by other surveys including the NORC survey (Welte, et al., 2002). The design of the study allowed the use of more than one survey instrument to analyze the data. The Diagnostic Interview Schedule (DIS) was the other instrument used to evaluate the data for problem and pathological gambling. The DIS is a 13 question survey based on the DSM-IV criteria. A score of five or more was an indicator of pathological gambling, and a score of three or more was considered an indicator of problem gambling. The report combined problem and pathological percentages; as a result, the combined total for the nation was 3.5% for past year and 4.8% for lifetime and for California 3.3% for past year (Welte, et al., 2001, 2002). The national rate was well below the SOGS rates. The authors stated that the higher rate for the SOGS was based on the larger number of variables; however, one of the criticisms of the SOGS has been the number of false positives produced (Gerstein, et al., 1999; Welte, et al., 2001).

California's Office of Problem and Pathological Gambling commissioned a state wide prevalence study which occurred in the 2005-2006 timeframe. NORC conducted this study using NODS as its survey instrument. The final report was released as the

2006 California Problem Gambling Prevalence Survey (Volberg, et al., 2006). In the California survey, all the gambling intensity categories were defined the same as the National Gambling Impact Study Commission's 1999 report except the criterion of having to lose over $100 in a single day or across a single year was dropped. The past year participation rate in California was 58% and the lifetime participation rate was 83%. The study determined that the prevalence rate in California for past year gamblers was 0.4% for pathological and 0.9% for problem gamblers. The lifetime prevalence was 1.5% for pathological gamblers and 2.2% for problem gamblers. The report also identified a lifetime aggregate problem and pathological category by geographic region. San Diego's region (includes Orange and Imperial Counties) aggregate rate was 4.5% which was the highest rate in the state (Volberg, et al., 2006).

Proximity

The impact of geographic proximity to gambling intensity levels within the United States has been a research topic since at least since the first national prevalence survey in the mid-seventies (USCRNPTG, 1976). The two factors in relationship to proximity that have been consistently measured over the years are the percent of the population participating in gambling activities and percent of the population with gambling intensity problems. The first study in 1976 reported a gambling participation rate in the general population of 61% for past year betters and 68% for lifetime betters (USCRNPTG, 1976). Since gambling was not categorized as pathological until 1980 (APA, 1980), the first report grouped gambling intensity problems into compulsive gamblers and possible compulsive gamblers. The 1976 report estimated that the prevalence of compulsive gamblers was 0.77% and the rate for possible compulsive

gamblers was 2.33%. The report also noted that, based on the increase in the number compulsive and potential compulsive gamblers in Nevada, the "findings also indicate that the widespread availability of legal gambling causes an increase in the incidence of compulsive gambling behavior" (1976, p. 98).

In the late nineties, the National Gambling Impact Study Commission reported that gambling participation for current year betters had risen to 68% and lifetime betters had risen to 86%. While the participation rates can be compared with earlier studies, this study used different criteria for determining levels of increased gambling intensity so there is no way to compare the results with the earlier study. The intensity level categories of concern in this study were identified as pathological and problem gambling. The report determined the gambling prevalence rate for past year gambling to be 0.6% at the pathological level and 0.7% at the problem level. For life-time gambling, the prevalence rate was 1.2% at the pathological level and 1.5% at the problem level. The study also found that, "The availability of a casino within 50 miles (versus 50–250 miles) is associated with a higher prevalence (about double) of problem and pathological gambling in the combined survey results..." (Gerstein, et al., 1999, p. 28).

The national study conducted by Welte and others in the 1999-2000 timeframe found that the gambling participation rate was 82% for the past year. The study used two screening tools to determine problem gambling intensity levels: SOGS and DIS. The SOGS established a prevalence rate for pathological gambling of 1.9% for the past year and 4% for lifetime. The combined problem gambling rates were 5.5% for current and 11.5% for lifetime. Using the DIS screen, the pathological rate was 1.3% for current and 2.0% for lifetime. The combined category for the DIS was 3.5% for current and 4.8% for

lifetime. While two of the initial reports from this study discussed the possible link between increased involvement and intensity problems rates with the increase in the gambling availability, neither report provided any findings that would support the relationship (Welte, et al., 2001, 2002). However, in later analyses of the same data, the researchers found a positive relationship between gambling outlet proximity and problem/pathological gambling (Welte, Wieczorek, Barnes, & Tidwell, 2006), and specifically, a relationship between having a casino within 10 miles of a respondent's home and problem/pathological gambling (Welte, Wieczorek, et al., 2004). When this data was again analyzed from a gender and age perspective, there still was a positive relationship in the general population between pathological gambling proximity (Welte, Barnes, Wieczorek, Tidwell, & Hoffman, 2007).

Other studies at an international level have addressed the relationship of proximity and gambling intensity. Researchers in Canada have found a relationship between high prevalence rates and gambling venues to include video lottery terminals and casinos. These studies include at least two longitudinal studies (Cox, Yu, Afifi, & Ladouceur, 2005; C. Jacques, Ladouceur, & Ferland, 2000; Ladouceur, Jacques, Ferland, & Giroux, 1999; Room, Turner, & Ialomiteanu, 1999; Rush, Veldhuizen, & Adlaf, 2007). Studies in the United Kingdom, New Zealand, and Australia have also established positive links with proximity and gambling intensity (Abbott & Volberg, 2000; Baker & Marshall, 2005; Grun & McKeigue, 2000; Marshall, 2005)

A significant relationship between proximity and gambling frequency for the elderly has also been found (Chhabra, 2009). The preferred mode of transportation may influence frequency decision as seniors, when compared to younger gamblers, prefer to

use charter buses with multi-casino locations and prefer weekday visits (Moufakkir, 2006).

Not all studies, however, have confirmed the relationship between proximity and problems with gambling intensity levels. Several studies have had results that indicate that the relationship either breaks down over time or never existed. One longitudinal study in Canada found that after a first year rise in gambling intensity within a region, there were no more increases found in the 2 and 4 year follow-ups (C. Jacques & Ladouceur, 2006). The relationship also broke down within regions of New Zealand where the gambling intensity decreased after 7 years (Abbott, Williams, & Volberg, 1999). The report hypothesized that the gambling intensity might be self correcting over time when the individuals either grow out of the problem or become more aware through social controls and treatment programs (Abbott, et al., 1999). Another researcher noted the possibility of correction through a social learning process based on self protection (Shaffer, et al., 1999).

The 2006 California Problem Gambling Prevalence Survey did not find a relationship between gambling intensity problems and proximity. The researchers hypothesized that this may be due to, "...a uniquely high level of access to gaming venues relative to the rest of the country" (Volberg, et al., 2006, p. 67).

Impact on Selected Demographic Variables

Hispanic. I could find very little research published on those who report as being Hispanic and gambling. One author labeled the status research on the Hispanic population as being nonexistent (Cuadrado, 1999). In the earlier prevalence studies in the United States, Hispanic respondents were generally grouped into the "others" or "non-

white" category. Meta-analyses conducted on prevalence studies taking place from the mid-1970s to the mid-1990s found only a small group of studies that evaluated by ethnicity and an even smaller number that evaluated beyond the general category of others/non-white (NRC, 1999; Shaffer, et al., 1997). One of the analyses identified that 5 of 33 studies contained an analysis of Hispanic intensity, and in those studies the main finding was that the mean percentage of the Hispanic respondents in the problem and pathological categories was higher than the mean percentage of those Hispanics with no gambling problems; however, this report also cautioned on the validity of the finding due to the small number of studies (NRC, 1999). In general, the analyses did find that minorities who gambled were at a greater risk than Caucasians of developing gambling intensity problems (NRC, 1999; Volberg, 1996)

In later studies conducted with ethnicity subcategories, there were mixed findings on the Hispanic category. In one national study, for example, those reporting as being Hispanics were associated with a seven to eight fold increase in current problem gambling when compared with Caucasians (Welte, et al., 2001). Another national study showed high "at risk" rates but lower problem and pathological rates for those in the Hispanic category than the national averages (Gerstein, et al., 1999). In three of the four state level studies where Hispanic populations are proportionately the largest among the states (Texas, New Mexico, Arizona, and California) (Ennis, Rios-Vargas, & Albert, 2011), being Hispanic was a significant factor in those who were screening in the various at-risk, problem, and pathological intensity categories (Volberg, 2003; Volberg & Bernhard, 2006; Volberg, et al., 2006). In Texas, problem gamblers were more likely than non-problem gamblers to be African American or Hispanic (Wallisch, 1993, 1996).

In the Arizona study, it was one of only two statistically significant factors in problem gambling (Volberg, 2003).

Again while there is limited information, the data indicates that problems with gambling intensity levels could be a uniquely male issue in the Hispanic culture. In several of the studies, two of the consistent demographic descriptors of non-gamblers were female and Hispanic (Volberg, 2002, 2003; Volberg, et al., 2006). In the 2006 California study, there were significant differences between Hispanic male and female participation rates for every venue (Volberg, et al., 2006). In a Nevada study, the Hispanic female participation rates were the lowest in the female category for all time frames, and the differences between the male and the female rates were the largest of all ethnicities for the past year and lifetime categories (Volberg, 2002). Cultural norms could be a factor as there is a norm of permissiveness for men in drinking and gambling, while there is a rigid code for the proper woman - *marianismo* (Cuadrado, 1999). The cultural norm of male *machismo* is a concern as it could be a barrier to seeking help for gambling problems. This concern is reflected in the results of the research as Hispanic respondents are less likely to seek treatment, to know about treatment, or to use gambling help lines (Cuadrado, 1999; Volberg, 2002; Volberg, et al., 2006; Wallisch, 1996). Preferred gambling locations and reasons for gambling varied among the state studies. In California, those in the Hispanic category were among the least likely to gamble in casinos or race tracks and more likely to gamble in venues not covered in the survey. The report did not specify what the "other" gambling venues were but it did contain the following categories: casinos, lottery, race tracks, card rooms, internet, and bingo. On a percentage basis, the lottery was the most popular among Hispanics respondents in

California. When compared to other ethnicities, those in the Hispanic category in California were less likely to give a particular reason for gambling, but the reasons that they gave most often were fun and the desire to win money. They were more likely than other ethnic groups to site inconvenience as being the reason for not gambling; although, the reason given most often for not gambling was losing money (Volberg, et al., 2006).

Asian. A history of the Asian category's gambling participation in the United States is also difficult because many studies have grouped them in the "others" or "non-white" category (Gerstein, et al., 1999; Kallick-Kaufmann & Kallick, 1976). As noted earlier in the Hispanic section, meta-analyses conducted on the studies taking place from the mid-1970s to the mid-1990s found only a small number of studies that examined ethnicity and an even smaller number that went beyond the general category of others/non-white (NRC, 1999; Shaffer, et al., 1997). For the Asian population, this general type of categorizing continued into some of the later state studies (Gerstein, et al., 1999; Volberg, 2003; Volberg & Bernhard, 2006). Another problem for this category is that it is culturally diverse – covering several unlike groups. The Office of Budget and Management's definition (which is used by the U.S. Census Bureau) of the Asian demographic category is, "A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam" ("Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity", 1997, p. 58786).

Currently, there is a perception that a problem with gambling intensity exists within the Asian community (Fong, et al., 2010; Spak, 2008). One article estimated that

20-30% of Atlantic City's gambling revenues came from the Asian community (Lin, 2008), and, in San Francisco, one survey identified that 70% of those surveyed within the local Chinese population thought that gambling was a problem (NICOS Chinese Health Coalition, 1997). Despite these concerns, two recent studies that included being Asian as in a separate demographic category did not find any supporting evidence (Fong, et al., 2010; Volberg, et al., 2006). One critical review of research studies in the United States only mentioned the demographic category where studies are lacking (NRC, 1999). One national study did identify that those who report as Asian were more likely than those who report as Caucasians to have intensity issues reaching the problem level; however, this did not hold true at the pathological level (Welte, et al., 2001, 2002) . Data from the California study also support this finding as Asian respondents scored higher in the problem category but were the lowest in the pathological group (Volberg, et al., 2006).

There have been very few studies conducted specifically on Asian populations within the United States. Several have been conducted internationally but were not included in this review because of possible bias created in cultural and gambling industry differences across nations. One of studies within the United States did look at the relationship between ethnicity and the DSM-IV criteria that define pathological gambling (preoccupation, increasing, chasing, illegal, loss, dependency, lying, cut back, irritable, and escape). There is evidence that Asians as a group do not endorse particular DSM criteria, and when compared to other races were least likely to endorse the criterion of preoccupation (Sacco, Torres, Cunningham-Williams, Woods, & Unick, 2010). As a group, Asians selected the following criteria most often when surveyed: preoccupation, cut back, escape, lying, chasing (Sacco, et al., 2010). Another study did find large rates

of pathological gambling among South East Asian refugee populations; however, there is a limited ability to apply these findings to the general Asian population because the study was on a small sample (96) of Laotian, Cambodian, and Vietnamese refugees located in the same geographic area (Petry, Armentano, Kuoch, Norinth, & Smith, 2003).

Older individuals. In general, assessing gambling issues within age categories in the reviewed prevalence studies is difficult because of the use of non-standard age subcategories across studies. This difficulty extends into the study of seniors. Not only are the age categories different in the studies for senior gamblers but some study results can span an age difference of many years; for example, the study in California reported that past year lottery and casino participation rates were higher for those in the 30 to 60 age groups (Volberg, et al., 2006).

The earliest national gambling study conducted in the 1970s showed a decline in gambling participation with age (Kallick-Kaufmann & Kallick, 1976). Analyses conducted on the results of earlier studies also indicate that problems with gambling intensity levels decline with age. One review of studies between 1986 and 1993 found that problem gamblers were more likely to be younger than 30 (Volberg, 1996) and another found that only 3 of 17 studies identified any larger intensity problems occurring for those in the age groups greater than 30 (NRC, 1999).

There was a noticeable change in this trend in the late 1990s. The study conducted by the National Gambling Impact Study Commission found that the age of those individuals participating in gambling was getting older and that the category with the greatest increase when compared with the 1975 study was in the over 65 group (Gerstein, et al., 1999). While this study found that participation was increasing in the

older group, problem and pathological gambling levels were still found to be the highest in categories below 65 (Gerstein, et al., 1999). The national study conducted by Welte and others also found that problem and pathological gambling decreased significantly with age; however, when regression analyses were conducted with other demographic factors, age was not statistically significant. This study also found some unusual results in participation in that participation declined with age except for weekly, casino, and track betting. It also found that gambling involvement (frequency and amount won/lost) in those older individuals who gambled did not decrease with age (Welte, et al., 2001, 2002).

State studies have found similar changes in the age demographic. In studies conducted in New Mexico and Arizona, age was not a statistically significant factor in problem gambling rates (Volberg, 2003; Volberg & Bernhard, 2006) In Arizona and Nevada, weekly and monthly gamblers were more likely to be over the age of 55 (Volberg, 2002, 2003). In California, weekly gamblers were significantly more likely than monthly gamblers to be over the age of 65 (Volberg, et al., 2006). The Nevada study hypothesized that this change may be to due to the maturing gambling market, "The data presented in...suggest that, in fully mature gambling markets such as Nevada, older adults (and older minority adults in particular) are actually more likely to gamble than younger adults" (Volberg, 2002, p. 24).

While many of the studies note that there is not a great deal of knowledge on older gamblers, a review of the literature would seem to refute this. The body of research on seniors gambling is growing. What appears to be missing is a systematic approach to the research conducted. Much of the reviewed research had some methodological issues

based on very small samples, small geographic regions or organizations, and sample selection processes. One meta-analysis using a pathways based methodology on the research of older gamblers came to a similar conclusion when out of the 77 reviewed articles only 22 had adequate sample sizes and used acceptable sample selection criteria (Tirachaimongkol, Jackson, & Tomnay, 2010).

Much of the research focus has been on characteristics that influence gambling within the senior community. Health, both mental and physical, is a predictor. Those gamblers with health issues have higher rates of problem gambling (Ariyabuddhiphongs, 2011; Pietrzak, Molina, Ladd, Kerins, & Petry, 2005). Anxiety disorders appear to be a common psychological disorder in the research (Grant, Kim, Odlaug, Buchanan, & Potenza, 2009; McNeilly & Burke, 2002; Pietrzak & Petry, 2006). This aligns with the fact many of the older gamblers gamble to relax and escape (McNeilly & Burke, 2000, 2002; Tirachaimongkol, et al., 2010). Social issues such as alleviating boredom, being around people, socializing, getting away, and having fun are also reasons for gambling participation among seniors (Martin, Lichtenberg, & Templin, 2010; McNeilly & Burke, 2000; Tirachaimongkol, et al., 2010). Social, environmental, and personal issues created by changes in the lives of the elderly can create behavioral changes which impact gambling habits. It appears that social issues (lack of things to do, lack of transportation) influence the decision to start gambling while the individual issues (loss of spouses, health issues) influence the decision to keep gambling (Tirachaimongkol, et al., 2010).

In addition to the factors already discussed, there are several other factors and characteristics associated with older gamblers: proximity and accessibility to gambling (Ariyabuddhiphongs, 2011; McNeilly & Burke, 2002; Preston, Shapiro, & Keene, 2007);

a propensity to play non-strategic games such as lotto or slots (Ariyabuddhiphongs, 2011; Grant, et al., 2009; Nower & Blaszczynski, 2008); use of charter buses (Moufakkir, 2006); a preference for weekday gambling (Moufakkir, 2006); less likely to be divorced (Nower & Blaszczynski, 2008), more likely to be widowed (Nower & Blaszczynski, 2008), more likely to be married (Preston, et al., 2007), and problem gamblers are younger than non-problem gamblers (Ladd, Molina, Kerins, & Petry, 2003).

The Economy

For years, many thought that the casino portion of the gambling industry was recession proof (Katzanek, 2008). However, revenue numbers over the past six years have shown that this is not the case for either commercial or Native American casinos. Starting in 2007, the economic conditions began to impact the commercial casino sector. Based on industry numbers, there was a 10% drop in revenues from 2007 to 2009 at the commercial casinos in the United States (AGA, 2010b). Revenue numbers for Native American casinos are not always easy to obtain or verify, but it would appear that they have fared better than the commercial casinos. While there were some conflicting numbers depending on the source, the revenue decrease for the entire industry from 2008 to 2009 was either 1% (NIGC, 2010a) or 20% (Soto, 2010d). This disparity could be based on the fact that the economic impacts have not been the same for all Indian casinos across the nation as some have fared much better than others (Conner, 2010). At one point in the recession, only one state (Oklahoma) reported revenue increases and at least three states--Montana, Mississippi, and Nevada-- experienced a double digit decrease (Palermo, 2009; Wanamaker, 2010). The National Indian Gaming Commission tracks revenues by region across the United States. From 2008 to 2009, only two of the seven

regions showed increases above 1% (2010). After 2007 and until 2011, at least one region saw decreased revenues every year (NGIC, 2009, 2010c, 2011b, 2012b). According to gambling industry insiders, the condition of the local economy seemed to be the major factor in the financial health of the casinos (Conner, 2010; Soto, 2010d; Wanamaker, 2010).

For those areas hit the hardest by the downturn, the impact has been substantial. For example, Foxwoods Casino Resort in Connecticut is the nation's largest casino and one of the hardest hit by the recession. The Casino was carrying $2 billion in debt and saw revenues drop, at one point, over 14% (Spector, 2010). The tribe that owns the casino restructured the debt to avoid defaulting on the bonds. The tribe is still struggling and has been seeking federal grants as a additional source of revenues (Melia, 2013). Foxwoods was not the only casino struggling with debt. One tribe in Wisconsin defaulted on a loan and won a court case against the lender. Since bankruptcy and federal law pertaining to Indian tribes is largely untested, lenders were hesitant to issue new bonds (Spector, 2010). Moody's Investors Service gave Indian bonds a negative rating for the first time (Allen, 2008; Soto, 2008). At a time when some experts were recommending diversification to diminish their dependence on gambling, loans for capital improvement were getting harder to find (Lee, 2010; Toensing, 2010). The one factor noted throughout the downturn has not been a reduction in the numbers of gamblers but the reduction in the amount wagered by each gambler (Lee, 2010; Wanamaker, 2010).

Both California and San Diego County casinos have also felt the sting of the economic downturn. The impact is varied within California as rural and northern

California tribes may have been hit the hardest because of their distance from population centers (Kasler, 2010; Soto, 2010d). Again, Indian Casinos are secretive about revenues, but estimates on revenue drops in San Diego ranged from 2% (Katzanek, 2008) to 20-30% (Salgado Jr., 2008). Numbers from the National Indian Gaming Commission reflect a 13% decrease in revenues in the Sacramento region from 2007 to 2010 (NIGC, 2009, 2012b). The economic conditions forced La Posta Casino to close in 2012 (Martinez, 2012). As with the national decrease, the trend noticed by the local casinos is not a decrease in the number of gamblers but a decrease in the amount spent by each gambler (Salgado Jr., 2008; Soto, 2010d). The tribes have become aware of competition, not only from other tribes, but also with other ways to spend disposable income. They have also become aware of factors that influence the decision to gamble such as concerns with rising gas prices and driving distances (Salgado Jr., 2008). The downturn resulted in layoffs and a change in plans for the future (Kasler, 2010; Soto, 2008). As with the national trend there is a need to diversify; however, funding was not readily available (Salgado Jr., 2008; Soto, 2010d). Not only are the tribes dealing with less revenue but they are also marketing themselves with special promotions and increasing the frequency of winning, all of which reduce the percent of revenues available to the tribes (Soto, 2008).

The economy also has second and third order effects as the tribes have become major employers in certain parts of the state and use other business for supplies and services (Katzanek, 2008; Salgado Jr., 2008). The economy impacted at least one tribes' ability to balance revenues for expansion and financial obligations in their gambling compacts with State of California (Soto, 2010b). Several tribes brought lawsuits against

the state in an effort to void compacts that felt unfairly required paying revenue sharing funds into the state's general fund (Soto, 2010a, 2010b, 2010c).

From an economic impact perspective, San Diego appears to reflect the same trends as the rest of the country and is a good location for a case study on the effects of the economy on gambling intensity. Economic indicators, such as unemployment and housing costs, suggest that the county was hit harder than the average national rates. The unemployment rate was higher, the median house prices were higher, and it has taken longer for the leading economic indicators to recover as compared with national averages (CSD & SDRCC, 2010).

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

Introduction

The purpose of this chapter is to provide a synopsis of where and how the data was collected and analyzed. The chapter starts with the rationale behind selecting San Diego County as the location of the survey and a description of the sample frame. This section is followed by a brief discussion on survey methodology, instrument selection, and the tools used to analyze the data collected. The final sections of this chapter discuss the limitations and reiterate the significance of the study.

Site and Sample Selection

With the wide variety of gambling opportunities available and the large number of casinos within a relatively small geographic area, San Diego County provides fertile ground to research the impacts of gambling on individuals and select demographic groups. Additionally, I have been unable to locate any previous prevalence studies conducted specifically on the county or any previous studies on the impact that changing economic conditions have on an individual's gambling intensity. In this study I utilized a cross-sectional sample of residents of San Diego County using questions that identified gambling experiences, prevalence levels, demographic variables, and changing gambling involvement.

The sample frame was drawn from a subset of the population identified by voter registration. The election data was dated August, 21 2012 and it contained 1,454,777 registration records. Since the emphasis of the study was to gauge gambling intensity within the county, I excluded all records with mailing addresses outside of the county.

This reduced the election data by almost 7,000 records. A review of the data indicated a possible record purging deficiency as it showed 10,834 individuals as being 113 years old. Additionally, the election data indicated that there were over 60,000 individuals registered to vote above the age of 85; however, the 2010 Census data indicates that the entire population of the county over 85 was only 53,960 (2010). Considering that only 61% of the population is currently registered to vote, the estimated number of registered voters over 85 should be in the range of 33,000 versus the 60,000 as noted above. Therefore, the election records could be greatly overstating those in the 85 and over age category. Based on this discrepancy, I did not include any records on those individuals over the age of 85 in the study. This reduced the number of records in the election data by an additional 60,497.

During the initial part of the study, I drew a one-time sample that consisted of two parts. The first part was a simple random sample based on the voter registration list and consisted of 2,000 names. The second part was intended to be a stratified sample based on the identifiable characteristic as being a member of a minority population. The plan for this portion of the survey was based on selecting an additional 1,000 names not chosen in the first 2,000. However, ethnicity is not an identifiable characteristic in the election data. Therefore, I used the census data to identify the zip codes with the highest proportions of Hispanic and Asian populations. I then stratified my selection by zip code and did a random selection from each of 10 zip codes with large Hispanic and Asian populations. The sample size from each zip code was based on the percentage of the total population represented by that code. The two-step sampling method was selected based on historical failures in prevalence studies of obtaining a large enough response rate in

population subgroups to reduce sampling error (NRC, 1999; Volberg, 2004; Volberg, et al., 2006). I chose to do simple random and stratified surveys because, with my limited resources, they were the methods that would minimize sample error and ultimately reduce the size of the weights required to adjust the sample. During this portion of the survey, I sent out an initial letter requesting participation and two follow-up letters to each respondent.

The response rate for both samples was extremely low and greatly overstated the White demographic category as well as the two age categories comprising those in the 50-84 age groups. Based on the low response rates and skewed data, I chose to send the next survey request out by email. The election data contained over 204,000 email addresses. Again, I removed the mailing addresses outside of San Diego and those over the age of 85. Using the response rates from the mail sample, I stratified this sample using zip codes with large proportions of those in the Hispanic and Asians race/ethnicity categories, and then further stratified by age within each zip code. Due to possible system software limitations, my second sample contained 10,000 emails.

San Diego County has a population of just over three million (USCB, 2010). While there are many theories on determining sample size, Fowler points out that the composition of the respondents in comparison to the population is actually more important than the size of the sample (2009). Using a sample size equation (size of the population, proportion of population expected to select response categories, margin of error, and confidence level) and based on the most conservative response variance, I estimated that I needed 384 responses to achieve a 95% percent confidence level and a margin of error within +/- 5 percentage points (Dillman, Smyth, & Christian, 2009). The

research on response rates for Web based and email surveys in comparison to postal mail surveys have mixed findings on which has the higher response (Greenlaw & Brown-Welty, 2009; Hoonakker & Carayon, 2009; Kaplowitz, Hadlock, & Levine, 2004). One review indicated that based on the average response rates of many studies, the Web based response was similar to postal mail, and both were higher than email (Hoonakker & Carayon, 2009). Fowler noted that it is not unusual to see mail survey response rates between 5% and 20% (2009); however, Salant and Dillman stated that there are processes that could increase this rate to 50% to 60% (1994). These projections are similar for Web surveys as the research indicates that response rates can be raised by using mixed methods or paper reminders (Greenlaw & Brown-Welty, 2009; Kaplowitz, et al., 2004). Based on a survey of 3,000 mailings and the calculations previously discussed, I had estimated that I needed a response rate of 13%.

Survey Method

The survey was a mix of postal, email, and Web based tools. Each individual selected for the postal portion was sent a letter via mail which explained the importance of the survey and requested the respondent go to a website to take the survey. I used the online survey provider Qualtrics, which was designed to work off of links within emails. Since I was using a mail request, this was not possible. The link provided by Qualtrics was very complex and hard to type in. To circumvent this issue, I created a website with a link to the survey. Both English and Spanish versions of the survey were made available in each mailing. I mailed 3,000 letters to residents of San Diego County, explaining the survey, and requesting the recipients' participation. I also sent a reminder

letter 10 days after the initial mailing and, a final reminder 21 days after the initial mailing.

Since the non-response rate impacts the survey error (Fowler, 2009), I reviewed methods of increasing the response rate. Research indicates that small token incentives paid in advance can significantly increase response rates while promises of incentives upon completion has minimal impact (Dillman, et al., 2009). Financial restrictions prevented me from providing financial incentives; however, I did try to use the social exchange theory which is designed to motivate voluntary responses without necessarily receiving financial incentives (Dillman, et al., 2009). I hoped to leverage the social exchange theory by stressing the fact that the respondents would be providing data that could influence future decisions on social and public policy issues associated with gambling in California. In essence, I tried to convince those receiving the survey that their response was important and that the benefit outweighed the time cost of doing the study (Dillman, et al., 2009). In order to reduce the time cost of responding to the survey, I attempted to keep the survey as short as possible without any loss in accuracy. In a further effort to increase response rates, I sent follow-up reminders, ensured confidentiality, and provided a method of contact for any questions or follow-up (Dillman, et al., 2009; Fowler, 2009; Salant & Dillman, 1994).

Survey Instrument

A large portion of the previous research on gambling has dealt with how individual behavior is impacted and influenced by gambling. Pathological gambling was first identified as an impulse disorder in 1980 in the third edition of the DSM (DSM-III) (APA, 1980). Even though there are differing methodological approaches to gambling

research, identifying the prevalence of problem or pathological gambling is one of the critical elements. Once a valid and reliable screen for pathological behavior is achieved, then it is possible to analyze which factors influence this disorder.

The DSM-III contained the first set of criteria used as a diagnostic screen for gambling impulse disorders. In 1994, the DSM-IV was published and contained new screening criteria (APA, 1994). The updated criteria were based on a new body of empirical evidence. Despite criticism, the validity and reliability for the gambling prevalence criteria in the DSM-IV has been verified through research (Lakey, Goodie, Lance, Stinchfield , & Winters, 2007; Stinchfield, Govoni, & Frisch, 2005).

NORC developed an instrument, first used in 1999, with one of the objectives being able to more accurately identify lifetime prevalence without creating false positives. The instrument contained 17 questions on lifetime activities and 17 questions on past year activities. These questions are based on the 10 DSM-IV categories. As mentioned earlier, NORC named the new instrument NODS which is a combination of NORC and DSM (Gerstein, et al., 1999). This instrument was tested for validity and reliability prior to fielding (Gerstein, et al., 1999), and the results have been verified by subsequent evaluations (Hodgins, 2004; Wickwire, Burke, Brown, Parker, & May, 2008). The NORC instrument was also the basis for the 2006 California Problem Gambling Prevalence Survey (Volberg, et al., 2006) and was used in other statewide prevelance studies (Volberg, 2002, 2003; Volberg & Bernhard, 2006).

Based upon its validity, reliability, lifetime measurements, and previous use in California, I used the NODS instrument in this study. I also kept the other questions on the survey similar to those previously used by NORC in conjunction with NODS;

however, because of concerns with the time required to take the entire survey, I did not include all of the questions. I removed some of the questions that were not pertinent to my research questions, and I also added questions that dealt with the impact of changing economic conditions on gambling. The self-administered NORC survey developed in the 1999 national study (Gerstein, et al., 1999) and the questions contained in the 2006 California study (Volberg, et al., 2006) were the main references in development of these questions. In total, the survey consisted of four sections: gambling experience, reasons for gambling, gambling behavior (NODS instrument), and demographic/personal information. The classification of gambling intensity followed the scale previously used with the NORC instrument: a score of zero defined the category of low-risk gamblers, a score of 1-2 defined the category of at-risk gamblers, a score of 3-4 defined the category of problem gamblers, and a score of 5 or more defined the category of pathological gamblers (Volberg, et al., 2006). The survey is contained in the appendix.

The Spanish version of the survey was developed in several steps. I could not locate a copy of the Spanish version used in the California Study. According to the Principal Investigator for the project (Rachel Volberg), it was never published. The sponsoring office (California Office of Problem and Pathological Gambling) did not have a copy. Ms. Volberg was able to provide a copy of the Spanish version of the survey used in New Mexico, and I used this document as a reference (Volberg & Bernhard, 2006). To begin the translation process, I had a Spanish speaker translate the entire survey. I then had a Spanish teacher review the translation for corrections. Once the corrections were made, I hired a translation service to translate the survey back into

English. There were a few minor errors which were reconciled prior to releasing the survey.

Data Analysis Methods

Reviews of previous studies that have used the NORC survey reflect the use of a variety of analytical tools. Most of the studies used a version of Statistical Package for Social Sciences (SPSS) to conduct the analyses. The statistical tools used included frequency distributions (both by number of incidents and percentage), descriptive statistics, chi-square analysis, analysis of variance (ANOVA), binary logistic regression, and multilevel time series analyses (Volberg, 2002, 2003; Volberg & Bernhard, 2006; Volberg, et al., 2006).

I used SPSS 21 to conduct the analyses. My initial plan was to use descriptive statistics, chi-square analysis, binary regression, and logistic regression. Because of the large amount of ordinal data, nominal data, and the small sample size, I was limited in the tools available. For example, I could not use chi-square in several cases because the expected frequencies for certain cells did not exceed 5. I did, however, use frequency distributions, descriptive statistics, and cross tabulations. Binary logistic regression was used where possible because it can accomplish similar functions as ANOVA and chi-square, but goes further in establishing how the variables are related and allows for the analysis of multiple variables at the same time (Anderson, Sweeney, & Williams, 2008). One analysis required comparison of two related samples comprised of ordinal data. To accomplish this, I had to use a non-parametric test. Non-parametric tests have less restrictive and fewer assumptions about the level of data measurement and the form of the probability distribution (Anderson, et al., 2008). Some believe that non-parametric

tests have less power than parametric tests; however, not all agree with this assumption (Field, 2009). The test I used was the Wilcoxon signed-rank test. This test, like many of the non-parametric tests, works by ranking the data and then analyzing the ranks (Field, 2009). In this test, the null hypothesis is that the populations are identical (Anderson, et al., 2008). The specific analytical methods used were selected based on supporting the requirements of the individual research questions; these questions and the methods for answering them are discussed below.

The first research question was: What is the extent of problem/pathological gambling in San Diego County? I addressed this question through the use of descriptive statistics, frequency analysis, and cross tabulation to establish the percentage of the population that fell into each of the four gambling prevalence categories for both lifetime and past year gambling. I also calculated gambling participation rates in the same manner. I then ran a binary logistic regression models to determine if gender, age, and race/ethnicity were significant predictors of either prevalence or gambling participation. The data for this specific question provided overall participation and prevalence rates as well as rates within the gender subcategories.

The second research question was: To what extent does gambling prevalence in the County differ among select demographic groups -- especially Hispanics, Asians, and individuals over 55 years of age? In order to establish participation and prevalence rates, I again used descriptive statistics, frequency analysis, and cross tabulation to establish the percentage of the population that fell into each of the four gambling prevalence categories for both lifetime and past year gambling. I did this for all demographic subcategories of race/ethnicity and age. I also calculated gambling participation rates in

the same manner. The rates for each subcategory were then compared to each other and overall rates. I then ran binary logistic regression models to determine if gender, age, and race/ethnicity were significant indicators of prevalence or gambling participation. The subcategories for race/ethnicity and age were included in the regression analyses.

The third research question was: To what extent has the Great Recession influenced gambling intensity in San Diego County? For this question, I again used descriptive statistics, frequency analysis, and cross tabulation to evaluate the gambling habits of the respondents prior to 2008 and over the past year. The venues visited were evaluated by differences in frequencies and percent of the population indicating that they had used the venue. Three of the categories (visits per average year, length of average visit, and on average how much did you come out ahead or behind) were evaluated by three types of venues (casino, internet, non-casino) and by pre-2008 and over past year activities. A Wilcoxon signed-rank test was then used to compare the samples by timeframe.

Delimitations and Limitations

One limitation on the study was that the sample was drawn from San Diego County only; therefore, there is no ability to generalize the results beyond the county. As my focus was on gambling trends within the county, this is an acceptable limitation for the study. Another limitation was my method of selecting the sample frame from the election registration database. This excluded those residents who are not registered to vote and introduces some sampling error as it omits certain individuals who are part of the population that I want to describe (Fowler, 2009). When I expanded the survey to the email list on the election data, the coverage error in the survey was greatly increased and

hurt the ability to generalize the results of the survey because it further excluded anyone without an email who had not already been selected in the random phase. The large non-response rate also added to the sampling error in the study. These factors can be controlled only to the extent that I know the demographic breakdown of the county's population and am able to use statistical tools to compensate for discrepancies between response rates and the demographics of the population. Additionally, the use of the emails and the Web based survey may have excluded those who do not have a computer or do not feel comfortable using one.

Significance of the Study

One of the key results of this study was to establish prevalence rates for problem and pathological gambling in San Diego County. Pathological gambling has been identified as an impulse disorder (APA, 1980). Previous research has found that problem and pathological gamblers have, on average, exhibited higher incidents of personal, family, social, and workplace disorders (Gerstein, et al., 1999; Grinols & Mustard, 2001, 2006; Volberg, et al., 2006). With the uniqueness of San Diego County's population and Indian gambling outlets, this study adds to the knowledge of pathological/problem gambling in an area that has a high concentration of gambling and a major population center.

There is also research that suggests that certain demographic classifications have a greater propensity to be classified as problem and pathological gamblers and that proximity to gambling increases the prevalence rates (Gerstein, et al., 1999; Volberg & Bernhard, 2006; Volberg, et al., 2006; Wallisch, 1996; Welte, et al., 2001; Welte, Wieczorek, et al., 2004). If, as past research has found, demographic categories within

the population and proximity to places of gambling are indicators of higher gambling prevalence rates, then San Diego County's population is in a high risk area. At least three of the demographic categories showing population growth in San Diego County have also been identified as categories of concern in gambling research – individuals who are Hispanic, Asian, and/or over the age of 55 (Gerstein, et al., 1999; Nower & Blaszczynski, 2008; SANDAG, 2011; Smith, 2006; USCB, 2000; USCB, 2010; Welte, Barnes, Wieczorek, & Tidwell, 2004). The study adds to the knowledge of the relationship between certain demographic categories, proximity, and prevalence rates. The study also provides policymakers at both the state and local level more information to review past decisions and make more informed future ones. In addition, while data indicates that gambling has been negatively impacted by the recent changing economic conditions (NIGC, 2010b), there is also a lack of research in this area. This study also helps provide a better understanding of the relationship of changing economic factors to gambling intensity.

CHAPTER FOUR

FINDINGS

Introduction

The purposes of the study were to gain an understanding of the current prevalence of gambling in San Diego County with its concentration of casino gambling within a small geographic but largely urban area, and to add to the knowledge base regarding the gambling intensity levels of the Hispanic, Asian, and over the age of 55 demographic groups. The final purpose was to estimate the impact that the economy had on gambling intensity in San Diego County. This chapter begins with brief discussion of the survey instrument and distribution procedures, as well as response rates and demographic data for those who completed the survey. The response rate discussion will include information on how well the responses represented the population. Data will then be analyzed to address the three research questions.

Survey

To insure validity and reliability and to employ a survey instrument that was previously used in California, this study used a survey instrument developed by NORC. This instrument was named NODS which is a combination of NORC and DSM (Gerstein, et al., 1999). I also kept the other questions on the survey similar to those previously used by NORC in conjunction with NODS; however, because of concerns with the time required to take the entire survey, I did not include all questions. I removed some of the questions that were not pertinent to my research questions, and I also added questions that dealt with the impact of changing economic conditions on gambling. The self-administered NORC survey developed in the 1999 national study (Gerstein, et al., 1999)

and the questions contained in the 2006 California study (Volberg, et al., 2006) were the main references in development of the questions for this survey. In total, the survey consisted of four sections: gambling experience, reasons for gambling, gambling behavior (NODS instrument), and demographic/personal information. The survey had 120 questions but based on the setup of the computer with skip and display technology it was impossible for a single respondent to receive all of the questions. The scoring classification of gambling intensity followed the scale previously used with the NORC instrument: a score of zero defined the category of low-risk gamblers, a score of 1-2 defined the category of at-risk gamblers, a score of 3-4 defined the category of problem gamblers, and a score of 5 or more defined the category of pathological gamblers (Volberg, et al., 2006). Since the DSM is projected to be revised this year, I also included a lifetime intensity score using the new system's scale. The new system renames the highest intensity level from pathological to disordered, and drops the illegal acts criterion from the scale. The new scale will be: a score of 4-5 is defined as a mild disorder, a score of 5-6 is defined as a moderate disorder, and a score of 7 or above is defined as a severe disorder (APA, 2012a).

Distribution and Response

The survey distribution consisted of two methods. All information used in the distribution was obtained from the San Diego County Registrar of Voters. The first method was a mailing of 3,000 letters to randomly selected names requesting that the respondents go to a computer website and take the survey. Of the sample, 2,000 were randomly selected from the entire sample frame and 1,000 were selected from a random oversample of zip codes with certain concentrations of minority populations. The initial

letter was sent along with two additional follow-ups. The first follow-up was sent on day 10 and the final on day 21. The mail survey resulted in 123 surveys being started and 108 being completed. The response rate for those starting the survey was 4.1% and for those completing the survey 3.6%.

Taking note of the low response rate, a second method of distribution was selected. Since the election data included over 200,000 email addresses, an email containing the original mail letter was sent to 10,000 email addresses. A follow-up email was sent five days later. The respondents were to click on a survey link to take the survey. The email request resulted in 170 surveys being started and 119 being competed. The response rate for those starting the survey was 1.7% and for those completing 1.2%. The overall response rate for both methods was 2.24% for those who started the survey and 1.75% for those who finished. This resulted in an n = 227.

While design of the survey allows for skipped data which results in what appears as a non-response, the 227 responses have little missing data in the critical areas. Additional details on the response rate are provided in the discussion of demographics.

Demographics

The population of San Diego County according to the 2010 census was 3,095,313. Of that total, 2,371,145 are 18 years of age or older (USBC, 2010). The total number of registered voters in the data received from the San Diego County Registrar of Voters in August, 2012 was 1,454,777. Based on these numbers, it would appear that 61.4% of the over 18 population was registered to vote. There are slightly more males than females in the general population; however, more females are registered to vote. Yet, as reflected in Table 1, the male response to the survey was much greater than the female response.

Table 1

Gender Demographic for San Diego County

Gender	Population 18-84	Registered Voters [a]	Survey Response
Male	50.2%	48%	55.9%
Female	49.8%	52%	44.1%

[a] The total number of registered voters as adjusted to remove those above the age of 85 and those with mailing addresses outside of the county.

The racial/ethnicity make up of San Diego County is dominated by those who report as being White and Hispanic, with those who report as being Asian a distant third. Table 2 contains a race/ethnicity breakdown of the population.

Table 2

Race/Ethnicity Demographics for San Diego County

Race/Ethnicity	Census Total	Census 18+	Total Response
White (non-Hispanic)	48.46%	52.90%	57.3%
Hispanic/Latino	32.03%	27.89%	20.7%
Black or African	4.74%	4.70%	4.4%
Asian Alone	10.60%	11.14%	14.1%
American Indian/Alaska	0.45%	0.46%	0%
Pacific Islander	0.44%	0.45%	0%[a]
Some other race/mix	3.28%	2.46%	3.5%

[a] Pacific Islanders were combined with Asians due to differing categories marked by Filipinos.

The survey response by race/ethnicity in comparison to the actual population race/ethnicity proportions provided mixed results. For example, the White, Asian, and "other" categories were overrepresented while the Blacks/African Americans and Hispanics categories were underrepresented. There were no American Indian/Alaska Native respondents, and the Pacific Islanders respondents were placed into the Asian category, due to possible confusion of the category selection by Filipinos. This resulted in six responses being placed into the Asian category. One interesting note is that there is a fairly large difference in the percentage of the population represented by each

race/ethnicity when the under 18 portion is removed. For instance, the Hispanic population percentage dropped by over 4% (California Department of Finance, 2013).

The median age for San Diego County residents is 34.6 years; however, the median includes the under 18 portion of the population. The under 18 category makes up 23.4% of the total population. Even with the under 18 portion removed, San Diego still has a relatively young population with 26.7% falling within the 11 year span in the 18-29 age category (see Table 3) (USCB, 2010). The median age of the voters within the adjusted election data was 49 years old.

The median age for those selected for the mail sample was also 49. The email selection methodology was intended to lower the age for the email respondents. The median age for email sample was 35. As shown in Table 3, even with the efforts to reduce the age of the respondents, the two older age groups are still overrepresented while the younger groups are underrepresented.

Table 3

Age Demographics for San Diego County

Age Group	Census Adjusted	Total Response
18-29*	26.70%	18.1%
30-39	18.60%	15.4%
40-49	18.53%	16.3%
50-54	9.10%	17.2%
55-84	27.07%	33.0%

*18-29 group calculated using Census date using 15-19 data, data from all age groups, and data from total population over 18.

One anomaly was the response rate of the two oldest populations to the mail survey. As shown in Table 4, while the percentage of the sample represented by the oldest group was large because of the combining of the age groups, the response rates

were still greatly skewed to the older populations, and the response rate consistently dropped with each younger age group.

Table 4

Age -Mail Survey Response

Age	Election Adjusted	Sample	Mail Response
18-29*	17.60%	19.57%	8.3%
30-39	18.93%	16.30%	11.1%
40-44	17.48%	17.73%	13.0%
50-54	10.44%	11.07%	13.9%
55-84	37.56%	35.33%	53.7%

*18-29 group calculated using Census date using 15-19 data, data from all age groups, and data from total population over 18.

When all of the data was collected, the imbalances between respondents and the population required that the survey be weighted by a combination of gender, race/ethnicity, and age. This combination resulted in 50 possible weighing values, ranging from .33 for a male who reports as being a 50-54 year old in the "other" race category to 2.26 for a female who reports as being a 20-29 year old Hispanic.

Research Question One

What is the extent of problem/pathological gambling in San Diego County? To answer this question, the gambling intensity rates for the county had to be identified. Historically, gambling intensity has been reported in most major studies by two factors – the participation rate and the prevalence rate. The participation rate is the number of people among the population who have gambled over a selected timeframe. The prevalence rates are currently defined by the criteria established by DSM-IV and scored using a diagnostic tool such as the NORC NODS.

In analyzing the participation rate for this study, lifetime and past year rates were chosen (Table 5). The overall lifetime gambling participation rate for San

Diego County was 84.3% and for past year it was 67.7%. Men had higher participation rates than women in both lifetime and past year. The difference between the male and female scores was much greater for the past year participation.

Binary logistic regressions were run testing for significance among the predictors of both lifetime and past year participation rates. The model used gender, race/ethnicity, and age as the predictors. Gender was not a significant predictor in the lifetime participation but it was in past year participation with $p = .02$ with men having much higher past year rates. The past year participation among gamblers category was provided in the chart to isolate the rate among actual gamblers. A logistics regression model was also run with this variable as the dependent variable and with gender, race/ethnicity, and age as the covariates; however, there were no significant predictors in this model.

Table 5

Gambling Participation Rates – Total/Gender

Gambling Participation	Lifetime	Past year	Past year among gamblers
General	84.3%	67.7%	80.0%
Female	80.3%	60.4%	74.4%
Male	88.3%	74.8%	85.6%

Note. These numbers represent the weighted totals.

As previously noted, the gambling prevalence rate was determined using the NORC NODS survey. The results contained in Table 6 have been weighted to reflect the population demographics by race/ethnicity, age, and gender. The total prevalence to problem and pathological gambling rate is computed by adding the "Problem" and "Pathological" categories. The overall lifetime prevalence rate for the county is 4.8% without weighing and 5.7% when the sample is weighted to

reflect the population. The past year rates are 2.2% and 2.6%, respectively. Men and women have very similar past year total prevalence gambling rates but the lifetime rate for men is more than double that of women. A binary logistic regression was run testing for significance among the predictors lifetime gambling prevalence. The models were constructed using gender and age as the predictors. Neither gender nor age was a significant predictor in the model. Due to the small sample size, a logistics regression was not run on any past year prevalence rates.

Table 6

Problem Gambling Rates – Total/Gender

	Past Year			Lifetime		
	Problem	Pathological	Total	Problem	Pathological	Total
Overall rate						
Unweighted	1.3%	0.9%	2.2%	3.5%	1.3%	4.8%
Weighted	1.6%	1.0%	2.6%	3.9%	1.8%	5.7%
Male						
Unweighted	0.8%	1.6%	2.4%	4.7%	1.6%	6.3%
Weighted	0.9%	1.8%	2.7%	6.3%	1.8%	8.1%
Female						
Unweighted	2.0%	0.0%	2.0%	2.0%	1.0%	3.0%
Weighted	2.6%	0.0%	2.6%	1.7%	1.7%	3.4%

Table 7

Disordered Gambling Score

	Mild	Moderate	Severe	Total
Unweighted	2.6%	0.4%	0.0%	3.0%
Weighted	3.6%	0.3%	0.0%	3.9%

Table 7 uses the new criteria that will be published in upcoming DSM-V. This measure changes the scale by removing the "illegal acts" criterion, and establishing a score of 4 for the lowest level of "disordered" gambling. The

removing of the illegal acts criterion impacted only one respondent. The overall disordered scores for this study are 3.0% (unweighted) and 3.9% (weighted). Of those totals, .4% and .3% were identified in the moderate category and none were identified in the severe category.

The impact of proximity was difficult to measure because of a survey frame that placed all respondents within a few miles of a casino. I looked at the location of the respondents' last casino gambling experience in relationship to their gambling prevalence in an effort to quantify proximity. While only 30% of all gamblers' last casino visit was to San Diego County casinos, those respondents with prevalence scores in the problem and pathological categories last visits were more frequently to county casinos. Eighty six percent of those individuals with past year prevalence scores and sixty-four percent of those individuals with lifetime prevalence scores last casino visits were to a casino within the county. When extending this comparison to casinos within 50 miles of home, 40% of all gamblers' last casino visit was to a venue within the 50 mile limit, while 100% of past year and 77% of lifetime problem/pathological gamblers' last casino visits were within this limit.

Research Question Two

To what extent does gambling prevalence in the County differ among select demographic groups - especially Hispanics, Asians, and individuals over 55 years of age? The second question is similar to the first in that intensity rates needed to be established, but this time for three demographic groups: Hispanics, Asians, and individuals over 55 years of age. These rates were then compared to other rates in

the appropriate subcategories. Since the groups of interest fall into differing general demographic groups, rates had to be established for both race/ethnicity and age.

Hispanics and Asians. While many factors associated with gambling have had inconsistent results in previous studies, the one trend that was similar across studies was the higher prevalence of problem and pathological gambling within minority populations (Gerstein, et al., 1999; Kallick-Kaufmann & Kallick, 1976; Volberg, 2003; Volberg, et al., 2006; Welte, Barnes, Wieczorek, Tidwell, et al., 2004). This study focused on the Hispanic and Asian categories because of their recent rate of growth within the county's population. The Hispanic population has shown the most growth from 2000 to 2010 at 5.8% while the Asian population has increased 1.8% over the same timeframe. Previous research has identified being Hispanic as a significant factor in those who were either in the at-risk, problem, or pathological intensity categories (Volberg, 2003; Volberg & Bernhard, 2006; Volberg, et al., 2006; Welte, et al., 2001, 2002). However, the results of previous research on being Asians as a factor in the problem gambling categories are limited and have indicated that this category is more of a perceived rather than an actual problem (Fong, et al., 2010; Volberg, et al., 2006). One national study, however, did indicate that those who self-identify as being Asian were more likely than those who report as being Caucasian to have intensity issues reaching the problem but not the pathological level (Welte, et al., 2001, 2002).

As seen in Table 8, the participation rate for those in the Hispanic population is among the highest in the race/ethnicity category for lifetime participation at

83.1%. In the other time categories, the scores for those in the Hispanic category fall near the middle.

Based on previous research on gender differences in the Hispanic culture (Cuadrado, 1999; Volberg, 2002, 2003; Volberg, et al., 2006), the Hispanic category rates were also analyzed by gender. The past year rate for Hispanic males was 75.8% and for women it was 64.9 %, although, in lifetime rates, the scores were closer with males at 84.8% and females at 82.2%. The two favorite gambling venues for the Hispanic respondents were casinos (50.0%) and the lottery (11.9%).

Table 8

Gambling Participation Rates –Race/Ethnicity

	Lifetime	Past year	Past year among gamblers
Hispanic	83.1%	70.0%	84.5%
Black/African American	80.0%	80.0%	100.0%
White	88.5%	64.5%	72.4%
Asian	76.9%	66.7%	90.0%
Other	71.4%	71.4%	100.0%

Note. These numbers represent the weighted totals.

Among those in the Asian category, participation rates are generally in the middle of the race/ethnicity scores with their highest score being in past year among gamblers category at 90.0%. The White Category scored the highest in lifetime participation with a score of 88.5%, while the Black/African Category scored the highest in the past year category with a total 80.0%. Binary logistic analyses were conducted testing for significance among the predictors of both lifetime and past year participation rates. The models used gender, race/ethnicity, and age as the

predictors. Race/ethnicity was not a significant predictor in either the lifetime or past year, however, as will be discussed below, age was significant.

The total problem gambling rates shown in Table 9 indicate that those in the Hispanic and Asian categories have higher total prevalence rates than most of the other racial categories; for example, those in the Hispanic category have the highest rates in both past year and lifetime (7.0% and 11.2%). Again, the Hispanic category rates were analyzed by gender. In past year total prevalence rate, the Hispanic females had higher scores than males (7.9% for females and 6.1% for males); however, in lifetime, the male rate was almost twice the female rate (15.2% for males and 7.9% for females).

A binary logistic regression was conducted testing for significance among the predictors of lifetime prevalence of problem and pathological gambling problems. Several models were run testing one race/ethnicity group at a time. Because of the small sample and concerns with the strength of the outcomes, the "other' category was not tested. Being in the Hispanic population was a significant predictor of lifetime prevalence ($p = .04$).

Table 9

Problem Gambling Rates – Race/Ethnicity

	Past Year			Lifetime		
	Problem	Pathological	Total	Problem	Pathological	Total
Hispanic	4.2%	2.8%	7.0%	5.6%	5.6%	11.2%
Black/African American	0.0%	0.0%	0.0%	10.0%	0.0%	10.0%
White	0.9%	0.0%	0.9%	1.8%	0.0%	1.8%
Asian	0.0%	3.7%	3.7%	3.8%	3.8%	7.6%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Note. These numbers represent the weighted totals.

Age. Many of the earlier gambling studies indicate that gambling participation and problems decrease with age and that the problem age groups were the younger groups (Kallick-Kaufmann & Kallick, 1976; NRC, 1999; Volberg, 1996). The 1999 study conducted by the National Gambling Impact Study Commission found that the age of those individuals participating in gambling was increasing and that the category with the greatest increase was the over 65 group (Gerstein, et al., 1999). In later gambling studies, age became less of a factor in gambling participation (Volberg, 2003; Volberg & Bernhard, 2006). Again, because of the growing population in those over the age of 55 years within the county (3.4% between 2000 and 2010), this age group was selected for the study.

Table 10 shows that those in the 55-84 age group participation percentages fall in the center of the age group rates at 91.4% lifetime and 68.4% past year. Those in the 30-39 age group have the highest participation rates for lifetime (95.6 %), and those in the 18-29 group had the lowest (63.5%). The 40-49 age group respondents had the highest past year total sample (78.6%); and the 18-29 age group respondents had the lowest (59.0%). Those in the 18-29 year-olds had the highest participation rate past year among gamblers by a wide margin (90.0%). Again, binary logistic regressions were run testing for significance among the predictors of both lifetime and past year participation rates. The models used gender, race/ethnicity, and age as the predictors. Being in the 18-29 age group was a significant predictor in lifetime participation ($p = .00$) with a very low lifetime participation rate.

The 55-84 age group respondents did have the highest past year total prevalence score of 5.1% and second highest lifetime score of 6.8%, while those in

the 18-29 group had the highest lifetime score at 9.5%. Table 11 contains the entire age group breakdown.

Table 10

Gambling Participation Rates -Age

Gambling Participation	Lifetime	Past year	Past year among gamblers
18-29 Age Group	63.5%	59.0%	90.0%
30-39 Age Group	95.6%	72.1%	73.8%
40-49 Age Group	92.7%	78.6%	86.5%
50-54 Age Group	85.7%	60.0%	66.7%
55-84 Age Group	91.4%	68.4%	76.5%

Note. These numbers represent the weighted totals.

A binary logistic regression was also run testing for significance among the predictors of lifetime gambling problems. The model was constructed using gender and age as the predictors. Neither gender nor age was a significant predictor in the model.

Table 11

Problem Gambling Rates – Age

	Past Year			Lifetime		
	Problem	Pathological	Total	Problem	Pathological	Total
18-29 Group	0.0%	3.2%	3.2%	6 .3%	3.2%	9.5%
30-39 Group	0.0%	0.0%	0.0%	2.3%	0.0%	2.3%
40-49 Group	4.8%	0.0%	4.8%	0.0%	4.9%	4.9%
50-54 Group	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
55-84 Group	3.4%	1.7%	5.1%	5.1%	1.7%	6.8%

Note. These numbers represent the weighted totals.

Research Question Three

To what extent has the Great Recession influenced gambling intensity in San Diego County? The final research question addresses the impact that the recent

"Great Recession" had on gambling intensity within the county. For years, many experts within the gambling trade thought that the casino portion of the gambling industry was recession proof (Katzanek, 2008). However, revenue trends after 2007 demonstrated that this was not the case. While both the commercial and Indian sectors have shown some revenue recovery (both sectors have added revenue sources which may also be a factor in their revenue recovery), the commercial sector is not yet back to the levels of the pre-recession years (AGA, 2012; NIGC, 2012a).

One factor noted throughout the downturn was that the revenue loss was created not by a reduction in the numbers of gamblers but by a reduction in the amount wagered by each gambler (Lee, 2010; Wanamaker, 2010). To evaluate the economic impact, questions were asked about pre-recession and post-recession gambling habits. The primary questions pertained to the number of venues visited, the number of visits, amount of time spent, and amount of money won or lost. Because of study's focus, several of these questions were asked by industry sectors; specifically, casino, internet and non-casino.

Table 12 reflects the number of venues visited prior to 2008 and during the past year. This table reflects the frequency of visits and the percent of the sample who visited this category. The trends show a large decrease in casino gambling (n = 39, 17.1%), in track gambling (n = 26, 11.4%), and an increase in those not betting in the past year (n = 18, 7.6%). Unfortunately, the way the question was asked on the survey does not allow a comparison because of timeline considerations. The past year is defined by a year; however, the period prior to 2008 does not have an associated timeline.

Table 12

Venues Visited

	Pre-2008		Past Year	
Venue	Frequency	Percent of Respondents	Frequency	Percent of Respondents
Casino	155	68.0%	116	50.9%
Internet	14	6.1%	8	3.7%
Race Track	52	23.0%	26	11.6%
Off Site	1	0.6%	0	0.0%
Lotto	92	40.4%	82	36.1%
Card Club	7	3.2%	4	1.5%
Private Location	31	13.8%	21	9.1%
Other	2	.7%	0	0.0%
Total	354		257	
Did not gamble	54	24.0%	72	31.6%

The questions used for the evaluations in Tables 13, 14, and 15 were defined by a common time basis which does allow comparison (i.e., in average year and during average visit). The downward trend between gambling behavior prior to 2008 and the past year continues in most of the data contained in Tables 13, 14 and 15.

Table 13

Number of Visits to a Gambling Venue

	Casino		Internet		Non-casino	
Type of Visit	Prior 2008	Past Year	Prior 2008	Past Year	Prior 2008	Past Year
One day only	51	21	2	0	38	24
A Few Days all year	77	71	6	6	62	48
Once or twice a month	18	16	5	4	10	14
1 to 3 Times a week	4	4	4	0	7	8
About every day	1	1	0	0	0	1
Don't know	5	2	1	0	5	2
Total	156	115	18	10	122	97
Did not gamble	9	34	5	15	14	28

Table 14

Length of Time per Average Visit

	Casino		Internet		Non-casino	
Length of Visit	Prior 2008	Past Year	Prior 2008	Past Year	Prior 2008	Past Year
Less than 2 hours	67	38	13	7	76	62
2 – 4 hours	64	52	5	3	33	12
5 – 10 hours	18	18	1	0	9	7
More than 10 hours	5	7	0	1	0	0
Don't know	3	0	0	0	4	7
Total	157	115	19	11	122	88

Table 15

Money Won or Lost per Average Visit

	Casino		Internet		Non-casino	
Amount of Money	Prior 2008	Past Year	Prior 2008	Past Year	Prior 2008	Past Year
Under $100	67	46	10	6	83	65
$100 - $500	30	22	2	0	8	9
$501 - $1000	7	3	2	1	3	1
$1001 - $5000	1	7	0	0	0	1
$5001 - $10000	1	2	0	0	1	0
$10001 - $50000	0	0	0	0	0	0
$50001 - $100000	0	0	0	0	0	0
$100001 - $1 million	0	0	0	0	0	0
Over $1 million	0	0	0	0	0	0
Don't know	5	2	0	1	4	5
Total	111	82	14	8	99	81

In order to test for differences between the prior to 2008 and the past year data, a nonparametric analysis was then conducted. A Wilcoxon signed-rank test was run on each surveyed paired data. The Wilcoxon signed-rank is based on an analysis of data ranking and tests the null hypothesis: H_0 = the populations are identical (Anderson, et al., 2008). Nine tests were conducted on the data based on the three venues (casino, internet, and non-casino) and the three variables (number of times, length of stay, and amount of

money). Of the nine tests, the only significant difference between the two time frames was in the number of visits to a casino with a p=0.00.

Summary

While the survey response was not as large as was hoped, it was certainly large enough to use the appropriate statistical tools with the exceptions as noted above. Levels of gambling intensity were established based on both participation and prevalence rates, selected demographic categories were analyzed and tested for significance, and the impact of the economic recession was analyzed by comparing gambling behaviors from prior to 2008 with past year. In many cases the results of this analysis were in line with previous research and will be discussed in the next chapter.

CHAPTER FIVE

INTERPRETATIONS AND IMPLICATIONS

Introduction

This chapter provides the findings, conclusions, and implications of this quantitative case study of gambling intensity in San Diego County. The chapter is broken down into four sections. First, a summary section provides a general overview of the entire study that includes the problem statement, research questions, a recap of where the data came from, and how the data was collected. Next, the findings section reviews the information provided in Chapter 4. This is followed by an interpretations section that attempts to make sense of the findings. The final section contains implications for future policy decisions and thoughts on future research.

Summary of Research Problem and Methods

Legal gambling operations in the United States are based on public policy decisions. The States and Federal governments control, among other things, the type, size, tax rates, and structure of the industry. In states with lotteries, the control goes beyond policy – the states operate gambling monopolies (Kearney, 2005).

Public policy on gambling is complicated by problems associated with gambling intensity levels. Research indicates that gambling intensity levels have a direct relationship with both individual disorders and negative externalities to society in the form of social costs (NGISC, Grinols & Mustard, 2001; 1999; Volberg, et al., 2006). Negative externalities are defined as "...transactions between two parties that create costs for third parties not involved in the transactions (Eadington, 2003, p. 48)." Policy makers are faced with a situation where they must balance the financial benefits of legalized

gambling against the individual and societal costs of gambling (Grinols & Mustard, 2001; NRC, 1999).

This policy issue continues to be a concern as both federal and state governments, driven either by special interests such as sectors of the gambling industry who desire to operate in internet markets or the need for revenues, have been exploring the legalization of internet gambling. For example, New Jersey recently became the third state to approve internet gambling, and at least 10 states introduced legislation to legalize or study the legalization of internet gambling in 2012. The legislators appear to be focused on a possible windfall in new revenue (Berzon, 2012; The Associated Press, 2013). On the down side of this public policy equation, however, is the fact that there is inadequate information on the externalities of gambling -- especially enough for policy makers to critically evaluate choices and make informed decisions (Jackson & Walker, 2011; Kearney, 2005; NGISC, 1999; Walker & Barnett, 1999). The lack of information on gambling's impact so concerned the National Gambling Impact Study Commission that it called for a pause in gambling expansion to allow time for lawmakers to review the impact of past policy decisions (NGISC, 1999).

After conducting a review of the research, I was able to only find two nationwide gambling prevalence studies that had been conducted after the implementation of the Indian Gaming Regulatory Act (Gerstein, et al., 1999; Welte, et al., 2001). In fact, I found only one statewide prevalence study involving California (Volberg, et al., 2006) and could find no prevalence studies specifically for San Diego County, although there was an opinion survey done in 2007 (Sciglimpaglia, 2007). Data also seem to be lacking on three of San Diego's fastest growing population groups – individuals who identify as

Hispanic, Asian, or are over 55 years of age (Fong, et al., 2010; Gerstein, et al., 1999; Nower & Blaszczynski, 2008; Welte, Barnes, Wieczorek, & Tidwell, 2004).

The purposes of the study were to gain an understanding of the current prevalence of problem and pathological gambling in San Diego County with its concentration of casino gambling within a small geographic but largely urban area, and to add to the knowledge base regarding the gambling intensity levels of the Hispanic, Asian, and over 55 year-old demographic groups. The final purpose was to estimate the impact that the economy had on gambling intensity in San Diego County. To do this, I answered the following three research questions:

1. What is the extent of problem/pathological gambling in San Diego County?
2. To what extent does gambling prevalence in the County differ among select demographic groups - especially Hispanics, Asians, and individuals over 55 years of age?
3. To what extent has the Great Recession influenced gambling intensity in San Diego County?

To collect the data on gambling intensity within the county, I was able to obtain a list of registered voters within the county and based my sample on this data. The population of San Diego County according to the 2010 census is 3,095,313. Of that total, 2,371,145 are 18 years of age or older (USCB, 2010). The total number of registered voters according to the San Diego County Registrar of Voters in August, 2012 was 1,454,777. Based on these numbers, it would appear that 61.4% of the population over the age of 18 was registered to vote. There are slightly more males than females in the general population; however, more females are registered to vote.

Because of apparent errors in the election data, I chose to delete the 85 and over population group. I also removed all voters whose mailing addresses were outside of the county.

Based upon its validity, reliability, and previous use in California, this study used a survey instrument developed by NORC. I also kept the other questions on the survey similar to those previously used by NORC in conjunction with NODS; however, because of concerns with the time required to take the entire survey, I did not include all questions. I removed some of the questions that were not pertinent to my research questions, and I also added questions that dealt with the impact of changing economic conditions on gambling. The self-administered NORC survey developed in the 1999 national study (Gerstein, et al., 1999) and the questions contained in the 2006 California study (Volberg, et al., 2006) were the main references in development of the questions. In total, the survey consisted of four sections: gambling experience, reasons for gambling, gambling behavior (NORC instrument), and demographic/personal information.

My first distribution channel for the surveys was the mail. A letter was sent out explaining the study, and it contained a website where the respondents could take the survey. The response rate to the mail survey was poor. After sending out 3000 letters, my response rate was 3.6% with 108 completed surveys. Because of the low response rate, I then followed the mail survey with an email survey to 10,000 email addresses also taken from the election data. After a follow-up email, my response rate for competed email surveys was 1.2%. My total response for both methods was

1.75% for those who finished the survey. While the rates were poor, there was enough data to conduct the analysis.

Brief Review of Findings

Gambling intensity. Gambling intensity was evaluated by participation rates and the prevalence of problem and pathological gambling rates. Participation rates were established in the past year and lifetime categories. The past year gambling rate for the total population was 67.7%. Gender was a significant predictor in past year participation, where the male rate of participation (74.8%) was 14.4 percentage points higher than the female (60.4%) While men still have a higher lifetime participation rate, the difference between the genders is reduced to almost half that of past year (88.3% male, 80.3% female). The overall lifetime gambling participation rate for the county is 84.3%. Gender was not a significant predictor of lifetime gambling participation. As will be discussed below, being in the 18-29 age category was a significant predictor in lifetime gambling participation within the model.

The problem and pathological rates were established for both past year and lifetime. The past year rates for the county were 2.2% (unweighted) and 2.6% (weighted). The lifetime rates were 4.8% (unweighted) and 5.7% (weighted). Males and females had the similar weighted past year scores; however, males had a higher problem gambling rate than females in the other categories. In fact, in both the weighted and unweighted lifetime scores, male scores were more than double the female scores (6.3%/8.1% for males compared to 3.0%/3.4% for females). Gender was not a significant predictor in prevalence rates; however, as will be discussed later, being in the Hispanic race/ethnicity category was a significant predictor of lifetime prevalence rates. Because of the small sample size, past year prevalence rates could not be checked for significance.

The impact of proximity was difficult to measure because of a survey frame that placed all respondents within a few miles of a casino. However, by comparing their last casino visits with gambling prevalence, those individuals whose last casino visit was either to a casino in the county or within 50 miles of their house, have a greater risk of prevalence to problem and pathological gambling than those whose last casino visit was to a location at a greater distance.

Race/Ethnicity. Those in the White category had the highest lifetime participation with a score of 88.5%, and those in the Black/African category scored the highest in past year with a total of 80.0%. The lifetime participation rate for the Hispanic population is among the highest in the race/ethnicity category at 83.1%. In the other categories, the scores of those reporting as Hispanic fall near the middle of the race/ethnicity figures. While Hispanic males had higher participation rates than Hispanic females, the females had a relatively high lifetime participation rate at 82.2%. The Asian category participation rates are generally in the middle of the race/ethnicity scores with its highest score being in past year among gamblers at 90.0%.

Hispanics and Asians respondents have higher total prevalence rates than the other racial categories. Being Hispanic was a significant predictor in lifetime prevalence of problem and pathological gambling. This is not surprising as the Hispanic category scores are the highest in both past year and lifetime rates (7.0% and 11.2%). Hispanic females did have higher past year total prevalence rates than Hispanic men. While not as high as the Hispanic category, those in the Asian category also scored high in both past year and lifetime (3.7% and 7.6%). Although the White population was among the

highest category in participation rates, it was among the lowest in problem gambling rates with scores of 0.9% for past year and 1.8% for lifetime.

Age. Those in the 30-39 age group had the highest participation rates for the lifetime category (95.6 %). While those in the 40-49 age group had the highest past year (78.6%) Those in the 18-29 age group had the largest score in past year participation among gamblers (90.0%). This score was well above the same age group's score in the past year gambling category. Those in 55-84 age group (the age group of focus) participation percentages fell in the center of the age group rates at 91.4% lifetime and 68.4% past year. The lowest participation rates were the respondents in the 18-29 group for both the lifetime (63.5%) and the past year category (59.0%). As noted, those in the 18-29 age group had a very low lifetime participation rate (63.5%) - over 20% below the next closest group and was a significant predictor of lifetime participation.

In determining the prevalence of problem and pathological gambling rates for age, those in the 55-84 age group had the highest past year score at 5.1%, and the second highest score in lifetime at 6.8%, while those in the 18-29 group had the highest lifetime score at 9.5%. The lowest scores in past year were in the 30-39 and 50-54 age groups with 0%. The lowest in lifetime was also in the 50-54 group with 0%.

Economic Impact. With few exceptions, each set of data collected reflected a downward trend when comparing prior to 2008 gambling activities to past year activities. The data analyzed for economic impact were venues visited, times visited in average year, amount of time per average visit, and amount of money that the individual came out ahead or behind during an average visit. The venues visited category was analyzed by comparing the frequencies of visits and the percent of the sample who visited the venue.

The trends show a large decrease in casino gambling (n = 39, 17.1%), in track gambling (n = 26, 11.4%), and an increase in those not betting in the past year (n = 18, 7.6%). The other three categories were analyzed by gambling venue – casino, internet, and non-casino. In these categories, the data were collected by type of venue and checked for statistically significant differences between the two time groups. The only statistically significant difference in the nine groups of data collected was in the number of times that a casino was visited in an average year. The differences the amount time spent and the amount ahead/behind per average visit were not significant.

Interpretations

When reading the interpretations reviewed in this section, the limitations of the study should be kept mind. One limitation is the coverage error introduced by the use of the election data and further exacerbated by the use of the email addresses. The second concern is non-response rate errors and the resulting small sample. The final concern is on possible self selection in responding to the survey. Those interested in gambling may have been more likely to answer the survey than those who either have no interest or dislike gambling. This could increase the response rate error and inflate the gambling prevalence rates, accordingly these rates may be best viewed as upper boundaries.

Gambling intensity. The prevalence of problem and pathological gambling identified in this study is high in San Diego County when compared to the results of the 2006 California Gambling Prevalence Survey and the results of other state studies (Volberg, et al., 2006). The 2006 study did have a regional breakdown of rates to include a Lower California region that encompassed San Diego, Orange, and Imperial Counties. The 2006 study showed lifetime rates of problem gambling at 2.6% and lifetimes rates of

pathological gambling at 1.9% for the region that included San Diego (Volberg, et al., 2006). The total prevalence of problem and pathological gambling rate for the 2006 study was 4.5%. The lifetime rates for this study were 3.5%/3.9% (weighted/ unweighted) for problem gamblers, 1.3%/1.8% for pathological gamblers, with a total prevalence rate of 4.8%/5.7%. Two interesting observations are that the pathological scores dropped from the 2006 study but the problem rates increased, and the lifetime participation in the 2006 study for the region was slightly higher than this study (86.7% compared to 84.3%) (Volberg, et al., 2006). The gambling prevalence scores have increased while the lifetime participation rate has decreased.

The research on gambling rates over time and in relationship to proximity of gambling has mixed findings. Research in Canada found a relationship between high prevalence rates and gambling venues to include video lottery terminals and casinos. These studies include at least two longitudinal studies (Cox, et al., 2005; C. Jacques, et al., 2000; Ladouceur, et al., 1999; Room, et al., 1999; Rush, et al., 2007). Studies in the United Kingdom, New Zealand, and Australia have also established positive links with proximity and gambling participation (Abbott & Volberg, 2000; Baker & Marshall, 2005; Grun & McKeigue, 2000; Marshall, 2005)

Not all studies, however, have confirmed the relationship between time, proximity and problems with gambling intensity levels. Several studies have had results that indicate that the relationship either breaks down over time or never existed in the first place. One longitudinal study in Canada found that after a first year rise in gambling intensity within a region, there were no more increases found in the 2 and 4 year follow-ups (C. Jacques & Ladouceur, 2006). The relationship also broke down within regions of

New Zealand where the gambling intensity decreased after 7 years (Abbott, et al., 1999). The researchers have hypothesized several reasons for this. One is that the gambling intensity might be self-correcting over time as individuals either grow out of the problem or become more aware through social controls and treatment programs (Abbott, et al., 1999). Another researcher noted the possibility of correction through a social learning process based on self-protection (Shaffer, et al., 1999).

The 2006 California study noted that proximity was not a factor in the previous high rates. The researchers hypothesized that this may be due to, "...a uniquely high level of access to gaming venues relative to the rest of the country (Volberg, et al., 2006, p. 67)." However the data from this study indicates a possible relationship to proximity based on the respondent's last gambling experience and gambling intensity rates. The rate of prevalence of problem and pathological gambling in the county appears to be high and proximity could most certainly be a factor in these rates.

Race/Ethnicity. The interpretations in this category will address findings within the specific subcategories.

Hispanic. In the county, identifying as being Hispanic is a significant indicator in lifetime total problem gambling rates. Even though those in the Hispanic category had the highest past year and lifetime prevalence rates in this study, their participation rates are not among the highest in the Race/Ethnicity category. Those identifying as Hispanic females had similar lifetime participations rates and higher past year prevalence rates than the Hispanic men. Previous research has produced mixed findings; yet, in three of the four states where Hispanic populations are proportionately among the largest (Texas, New Mexico, Arizona, and California) (Ennis, et al., 2011), identifying as Hispanic has

been found to be a significant factor in those who were identified in the various at-risk, problem, and pathological intensity categories (Volberg, 2003; Volberg & Bernhard, 2006; Volberg, et al., 2006). In Texas, problem gamblers were more likely than non-problem gamblers to be African American or Hispanic (Wallisch, 1993, 1996). In the Arizona study, identifying as Hispanic was one of only two statistically significant factors in problem gambling (Volberg, 2003). In one national study, for example, being Hispanic was associated with a seven to eight fold increase in current gambling pathology when compared with Caucasians (Welte, et al., 2001). While another national study showed high "at risk" rates but lower problem and pathological rates for Hispanic respondents than the national averages (Gerstein, et al., 1999). Previous research also indicated that gambling could be a uniquely male issue in the culture (Cuadrado, 1999; Volberg, 2002, 2003; Volberg, et al., 2006). The findings of this study are in agreement with the previous research cited above that indicates that being Hispanic is a strong indicator of gambling prevalence; however, the finding of this study on gender participation and prevalence rates are not in complete agreement with previous studies.

Asian. While not being a statistically significant predictor of a prevalence of problem and pathological gambling, those in the Asian category had a relatively high rates in this study. Their past year rate was 3.7%, and their lifetime rate was 7.6%. Both of these rates exceed those established for the overall prevalence rate for this study (2.6% and 5.7%). There is a perception that a gambling intensity problem exists within the Asian community (Fong, et al., 2010; Spak, 2008), although two recent studies did not find any supporting evidence for this assertion (Fong, et al., 2010; Volberg, et al., 2006). One national study did identify that Asian respondents were more likely than Caucasian

respondents to have intensity issues reaching the problem level; however, this did not hold true at the pathological level (Welte, et al., 2001, 2002). Data from the California study also support this finding as Asian respondents scored higher in the problem category but were the lowest in the pathological group (Volberg, et al., 2006). Importantly, the findings in this survey do not agree with the previous research that indicates that there is only a perception of a gambling problem in the Asian community.

Age Group 55 to 84. The 55-84 age group variable was not a significant predictor of either gambling participation or prevalence; nevertheless, this group's rates for all categories of participation and prevalence are higher than the average survey rates. Additionally, this group's prevalence rates are among the highest in the age category. This could indicate a possible future intensity problem for this category. The casinos in the county appear to be focused on getting seniors into their casinos. Most have a very robust shuttle bus system targeted at day gamblers. Not surprisingly, these amenities line up with factors favored by older gamblers: proximity and accessibility to gambling are critical factors in gambling issues in seniors (Ariyabuddhiphongs, 2011; McNeilly & Burke, 2002; Moufakkir, 2006; Preston, et al., 2007); they have a propensity to play non-strategic games such as lotto or slots (Ariyabuddhiphongs, 2011; Grant, et al., 2009; Nower & Blaszczynski, 2008); have a preference to use charter buses (Moufakkir, 2006); and have a preference for weekday gambling (Moufakkir, 2006).

Other studies have identified similar findings of increased gambling activities in older age groups. The National Gambling Impact Study Commission study found that the age of those individuals participating in gambling was getting older and that the category with the greatest increase when compared with the 1975 study was the over 65

group, yet their pathological rates were not among the highest in the age groups (Gerstein, et al., 1999). In Arizona and Nevada, weekly and monthly gamblers were more likely to be over the age of 55 (Volberg, 2002, 2003), while in California, weekly gamblers were significantly more likely than monthly gamblers to be over the age of 65 (Volberg, et al., 2006). A Nevada study hypothesized that this change may be due to the maturing gambling market, "The data presented... suggest that, in fully mature gambling markets such as Nevada, older adults (and older minority adults in particular) are actually more likely to gamble than younger adults" (Volberg, 2002, p. 24). The results of this study confirm that there are intensity issues with those in the 55-84 age group.

Economic impact. I could find no previous research on the impact that economic conditions have on gambling intensity; however, one factor cited by the gambling industry was that there had not been a reduction in the numbers of gamblers but a reduction in the amount wagered by each gambler (Lee, 2010; Wanamaker, 2010). Based on the data analyzed, with the start of the Great Recession in the 2007-2008 timeframe, the largest impacts to gambling intensity in the county were a decrease in the number of venues visited, the number of trips that gamblers made to the casinos, and an increase in those who no longer gamble. The findings in this study do not support the hypothesis of the industry that the numbers of gamblers did not decrease.

Implications of Findings

Policy. As of the last day to submit bills in the 2013 session of the California State Senate, there were two bills (SB678 and 51) that would legalize a form of internet gambling. One bill would allow internet poker only, while the other would allow already established gambling venues to apply to operate an internet gambling site (Rosenhall,

2013). As noted by this study, gambling generates consequences that have not been fully researched. Based on the intensity rates derived from this survey, San Diego County alone could have well over 100,000 residents who have prevalence issues, and equally important, the highest prevalence rates are in the county's three fastest growing populations. Proximity appears to be a factor in San Diego and with the push for legalized internet gambling, the meaning of proximity will be redefined. It will no longer be miles from one's residence but the proximity of one's smart phone. As has been recommended in a previous study (Volberg, et al., 2006), a different, more inclusive approach to developing public policy is needed on this topic. While it may mean lost revenues by not being on the leading edge of the online gaming movement, based on the results of my research, my recommendation is to slow down the political process in order to analyze the many complex factors associated with gambling. This action could help ensure that all issues are heard, that the correct level of gambling is authorized, and that from an economic and regulatory perspective, the control of online gambling is placed with the organizations that will provide the best benefit to the citizens of California.

Hispanic population. In the county, the highest total prevalence rates in the race/ethnicity category and overall were in its largest minority population (although, the Hispanic population may not technically be a minority population much longer). Research about the Hispanic population's gambling behavior has been lagging and the information, consequently is incomplete (Cuadrado, 1999). Between 2000 and 2010, the Hispanic population grew 43% in the United States and 27.8% in California (Ennis, et al., 2011). Based on population projections, this growth will continue until at least 2050 (there were no projections beyond 2050) (SANDAG, 2010a). Importantly, the gambling

habits of those in the Hispanic population appear to be changing in intensity rates. In the 2006 California study, Hispanic respondents were the least likely to gamble in casinos or race tracks and more likely to gamble in venues not covered in the survey. On a percentage basis, the lottery was the most popular venue among those who reported as being Hispanic in California (Volberg, et al., 2006). However, in this study, casinos were the favorite and most visited gambling venue. Additionally, the female participation and prevalence rates appear to be changing. As such, more information is needed to understand the gambling habits of the Hispanic population within the state if policymakers are to factor into the policymaking process the needs of the fastest growing population in California

Longitudinal studies. As noted in 1999 and 2006, there are gaps in the knowledge on the impacts of gambling on society and individual (NGISC, 1999; Volberg, et al., 2006) yet gambling venues continue to expand. With data from the 2006 California Problem Gambling Prevalence Survey available, California is in a position to initiate a longitudinal study on both a state and regional basis. In addition, California is a unique research opportunity with the large number of Indian Casinos and its proximity to Nevada. As such, a longitudinal study in California would provide information on the long term impacts of gambling that would be hard to match in other geographic locations. Such a study could be sanctioned by California's Office of Problem Gambling and funded from the Indian Gaming Special Distribution Fund.

Metrics. As noted earlier in this dissertation, another gap in the prevalence research is the lack of standardization that exists in previous studies. Currently, there are a variety of demographic categories and screening tools that have been used. While it is

understood that the research comes from a wide variety of organizations and institutions, the standardization of some of the basic information would be immensely helpful in analyzing, interpreting, and generalizing from the data from across samples and regions. Once again, I think that the Office of Problem Gambling should be the primary agency advocating an effort to standardize within the state.

Summary

The purposes of this case study were to gain an understanding of the current prevalence of problem and pathological gambling in San Diego County; to add to the knowledge of the prevalence of problem and pathological gambling within the Hispanic, Asian, and over the age of 55 demographic groups; and to add to the knowledge of the impact that the economy has on gambling intensity. This was a quantitative case study that analyzed data from a sample selected from county election registration records. The survey instrument used to identify the prevalence of problem and pathological gambling was taken from previous gambling prevalence studies conducted in California and other locations.

The sample frame was established from election data obtained from the San Diego County Registrar of Voters. A sample of 3000 names was selected from the more than 1.4 million names in the election database. The initial method of distribution was to send a letter asking the respondent to go to a website to take the survey. This letter was sent out along with two follow-up reminder letters. Although from a statistical power perspective the desired response rate for the survey was 13%; unfortunately, the response rate from the mail portion was 3.6%. Because of the low response rate, 10,000 email addresses from the election data were selected by stratifying by race/ethnicity and age,

and sent out with a link to the survey. A follow-up email was sent five days later. The response for the email portion of the survey was 1.2%. The overall response rate for both methods was 1.75% for those who finished which resulted in a sample size of n = 227. Of course, there were limitations and sampling error associated with this method of distribution due to coverage and non-response issues. To solve the non-response problem, the results were weighted to reflect the population proportions using gender, age, and race/ethnicity.

The data received was analyzed using SPSS 21. The statistical tools used included frequency distributions (both by number of incidents and percentage), descriptive statistics, binary logistic regression, and the Wilcoxon signed-rank test. Age, gender, and race/ethnicity were tested for significance as predictors of lifetime gambling prevalence, current year participation, and lifetime gambling participation. The research question on the impact of the economy on intensity rates was analyzed by comparing data on prior to 2008 gambling activities with past year activities.

The weighted past year prevalence of problem and pathological gambling rate was established for the county at 2.6%, and the lifetime rate was 5.7%. The overall lifetime participation rate was 84.3% and the past year was 67.7%. The past year rate among gamblers was higher at 80.0%. In a gender comparison, the male scores for both prevalence and participation were higher than the female scores. The current year male and female scores for prevalence were similar (2.7% male and 2.6% female). Gender was a significant predictor in past year participation with male rates significantly higher than female rates.

In the race/ethnicity categories, the participation rate for the Hispanic population is among the highest in the race/ethnicity category for lifetime participation at 83.1%. In the other participation categories, the Hispanic category scores fall near the middle of race/ethnicity figures. The Asian category participation rates are generally in the middle of the race/ethnicity scores with the highest participation score being in the past year among gamblers category at 90.0%. Those in the Hispanic and Asian categories both have a higher total prevalence to problem and pathological rates than the other racial categories; for example, the Hispanic category scores are the highest in both past year and lifetime (7.0% and 11.2%). Identifying as Hispanic was a significant predictor in lifetime total prevalence. While not as high as Hispanic category, the Asian category also scored high in both past year and lifetime (3.7% and 7.6%).

In the age category, the 55-84 age group respondents' participation percentages fall in the center of the age group rates at 91.4% lifetime and 68.4% past year. In the total prevalence of problem and pathological gambling evaluation for age, those in the 55-84 age group had the highest past year score at 5.1%, and the second highest score in lifetime at 6.8%. Being in the 18-29 age group was a significant predictor in lifetime participation with $p = .00$ with a much lower lifetime participation rate than the other groups.

With few exceptions, each set of data collected on gambling habits reflected a downward trend when comparing gambling activities prior to 2008 and activities this past year. The data reviewed in this category were venues visited, times visited in an average year, amount of time per average visit, and amount of money that the individual came out ahead or behind during an average visit. The venues visited category was analyzed using

frequency analysis and revealed a large decrease in casino gambling (n = 39, 17.1%), in track gambling (n = 26, 11.4%), and an increase in those not betting in the past year (n = 18, 7.6%). In the other three categories, there was only one statistically significant difference in the nine groups analyzed and that was the number of times that a casino was visited in an average year. In all other groups the differences were not significant.

The results of my research suggest that the prevalence of problem and pathological gambling in the county are high when compared to the results of previous research. Proximity to such a large amount of gambling could be a factor in the increased risk of intensity problems. There are prevalence issues among San Diego's minority groups with the highest rate being in the Hispanic population. Identifying as Hispanic is statistically significant when it comes to predicting lifetime prevalence. The prevalence rate among the Asian population is not as high as the Hispanic population but is still one of the highest of the race/ethnicity groups. Those in the 55-84 age group also have high prevalence scores. This group is the highest in past year prevalence and the second highest in lifetime among the age groups. This group in, particular, is targeted by the casino's robust bus shuttle system. Finally, the Great Recession may have been associated with a change in gambling intensity by reducing the number of venues visited and the number of times that casinos were visited. It also appears that the number of individuals not gambling has increased from the period prior to 2008 to past year.

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Appendix A

Gambling Survey

A1 In your lifetime, at which gambling locations have you gambled (bet money) (select all that are applicable):

- ☐ Casino (a large hall with many different kinds of games, such as poker and slot machines)
- ☐ Dog/Horse Race Track
- ☐ Offsite Race Betting
- ☐ Lottery Sales Point
- ☐ Card Club
- ☐ Private location
- ☐ Internet
- ☐ Other - specify in box below _____
- ☐ I have never gambled
- ☐ Don't know

A2 What is your favorite gambling location?

- ○ Casino
- ○ Dog/Horse Race Track
- ○ Off-site Race Betting
- ○ Lottery Sales Point
- ○ Card Club
- ○ Private location
- ○ Internet
- ○ Other - specify in box below _____
- ○ I do not have a favorite
- ○ Don't Know

A3 How old were you the first time you gambled any amount of money? Type age in years or "don't know" in box below.

A4 What kind of game did you play, the first time you gambled?

- ○ Private game (e.g., private poker game)
- ○ Blackjack at a casino
- ○ Poker at a casino
- ○ Other table games (e.g., roulette, craps) at a casino
- ○ Video poker at a casino
- ○ Slot machines at a casino
- ○ Bingo at a casino
- ○ Gaming machines outside of a casino (e.g., in a veterans' or fraternity club)
- ○ Bingo outside of a casino (e.g., in a veterans' or fraternity club)
- ○ Lottery games
- ○ The Numbers (Illegal: Not State Run)
- ○ Horse race or dog race
- ○ Sports
- ○ Poker on internet
- ○ Slots or video poker on the internet
- ○ Sports on the internet

- ○ Other games on the internet
- ○ Other (Specify) _____
- ○ Don't know

A5 Think of the last time you gambled, what was the venue?

- ○ Casino
- ○ Dog/Horse Race Track
- ○ Off-site Race Betting
- ○ Lottery Sales Point
- ○ Card club
- ○ Private Location
- ○ Internet
- ○ Other - specify in box below _____
- ○ Don't know

A6 The last time you gambled, how much money did you take to gamble with? Type amount or "don't know" in box below.

A7 On that last day that you gambled, did you budget beforehand a certain amount of money that was the most you were willing to lose?

- ○ Yes
- ○ No
- ○ Don't know

A8 Ho many dollars were the most you were willing to lose? Type amount or "don't know" in box below.

A9 On that last day that you gambled, did you stay within your budget amount?

- ○ Yes
- ○ No
- ○ Don't know

A10 Please indicate which of the following ways you got more money to continue gambling (select all that apply).

- ☐ Cashed a check
- ☐ Took money from a bank account using an ATM machine
- ☐ Used a credit card other than getting a cash advance
- ☐ Got a credit card cash advance
- ☐ Used a line of credit from the casino
- ☐ Borrowed money from a family member or friend
- ☐ Another way - Specify in box below _____
- ☐ I did not get additional money
- ☐ Don't know

A11 Approximately, about how much do you spend on gambling in an average month?
- ○ Less than $1
- ○ $1 to $10
- ○ $11 to $49
- ○ $50 to $99
- ○ $100 to $199
- ○ $200 to $299
- ○ $300 to $499
- ○ $500 to $999
- ○ More than $1000
- ○ Don't know

A12 Approximately, what is the largest amount of money you have ever lost gambling in one day?
- ○ Less than $1
- ○ $1 - $9
- ○ $10 - $99
- ○ $100 - $999
- ○ $1,000 - $9,999
- ○ $10,000 or $99,999
- ○ Over $100,000
- ○ Never lost money
- ○ Don't know

A13 In all your years of gambling, what is the largest amount you have lost in a year?
- ○ $10 - $99
- ○ $100 - $999
- ○ $1,000 - $9,999
- ○ $10,000 - $99,999
- ○ $100,000 - $499,999
- ○ Over $500,000
- ○ Don't know
- ○ Under $10

A14 Over the past year, at which gambling locations have you gambled (select all that are applicable):
- ☐ Casino
- ☐ Internet
- ☐ Dog/Horse Race Track
- ☐ Off-site Race Betting
- ☐ Lottery Sales Point
- ☐ Card Club
- ☐ Private location
- ☐ Other - specify in box below _____
- ☐ I have not gambled in the past year
- ☐ Don't know

A15 Prior to the economic down turn (2008 and earlier), at which gambling locations have you gambled (select all that are applicable):

- ☐ Casino
- ☐ Internet
- ☐ Dog/Horse Race Track
- ☐ Off-site Race Betting
- ☐ Lottery Sales Point
- ☐ Card Club
- ☐ Private location
- ☐ Other - specify in box below
- ☐ I did not gamble prior to 2008
- ☐ Don't know

A16 Now please think about the last time, the most recent day, when you gambled at a casino in the U.S. Where was the casino located?

- ○ Nevada
- ○ Atlantic City
- ○ California
- ○ San Diego County
- ○ Another location- type in location below _____
- ○ I have never gambled at a Casino
- ○ Don't know

A17 How far is this casino from your home?

- ○ Less than 10 miles
- ○ Between 10 and 50 miles
- ○ Between 51 and 250 miles
- ○ More than 251 miles
- ○ Don't know

A18 How old were you the first time that you gambled at a casino? Type age in years or "don't know" in box below.

A19 During you last visit to the casino, what was the game on which you spent most of your time?

- ○ Slots or other machines
- ○ Poker
- ○ Another card game like blackjack
- ○ Some other table game like roulette or craps
- ○ Bingo
- ○ Live keno
- ○ Sports betting
- ○ Horse or dog racing
- ○ Other - specify below _____
- ○ Don't know

A20 Do you have a casino membership or players card?
- O Yes
- O No
- O Don't know

A21 On that last day, was the casino you played in owned by an Indian tribe?
- O Yes
- O No
- O Don't know

A22 Over the past year think about how often you gambled at a casino in the U.S. Please select the category that best describes how often you gambled at a casino over the last year.
- O About every day
- O 1 to 3 times a week
- O Once or twice a month
- O A few days all year
- O Only 1 day in the past year
- O I have not gambled in a casino in the past year
- O Don't know

A23 Over the past year when you gambled at a casino in the U.S., on an average visit how long did you gamble at the casino?
- O Less than 2 hours
- O 2 to 4 hours
- O 5 to 10 hours
- O More than 10 hours
- O Don't know

A24 Over the past year when you gambled at a casino in the U.S., on an average visit did you come out ahead or behind on the money you wagered?
- O Ahead
- O Behind
- O Broke even
- O Don't know

A25 Over the past year when you gambled at a casino in the U.S., during an average visit how much did you come out ahead or behind?
- O Under $100
- O $100 to $500
- O $501 to $1,000
- O $1,001 to $5,000
- O $5,001 to $10,000
- O $10,001 to $50,000
- O $50,001 to $100,000
- O $100,001 to $1 million

- ○ More than $1 million
- ○ Don't know

A26 Prior to the economic down turn (2008 and earlier), think about how often you gambled at a casino in the U.S. Please select the category that best describes how often you gambled at a casino in an average year prior to prior to 2008.

- ○ About every day
- ○ 1 to 3 times a week
- ○ Once or twice a month
- ○ A few days all year
- ○ Only one day
- ○ Did not gamble at a casino prior to 2008
- ○ Don't know

A27 Prior to the economic down turn (2008 and earlier), when you gambled at a casino in the U.S., on an average visit how long did you gamble there?

- ○ Less than 2 hours
- ○ 2 to 4 hours
- ○ 5 to 10 hours
- ○ More than 10 hours
- ○ Don't know

A28 Prior to the economic down turn (2008 and earlier), when you gambled at a casino in the U.S., on an average visit did you come out ahead or behind on the money you wagered?

- ○ Ahead
- ○ Behind
- ○ Broke even
- ○ Don't know

A29 Prior to the economic down turn (2008 and earlier) when you gambled at a casino in the U.S., during an average visit how much did you come out ahead or behind?

- ○ Less than $100
- ○ $100 to $500
- ○ $501 to $1,000
- ○ $1,001 to $5,000
- ○ $5,001 to $10,000
- ○ $10,001 to $50,000
- ○ $50,001 to $100,000
- ○ $100,001 to $1 million
- ○ More than $1 million
- ○ Don't know

A30 Next I'd like to ask you about wagering on the computer over the Internet and World Wide Web. Have you ever bet money in this way? (Include Lottery tickets bought over the internet.)
- ○ Yes
- ○ No
- ○ Don't know

A31 What types of internet gambling games have you ever bet on? (pick all that apply)
- ☐ Poker
- ☐ Video Poker
- ☐ Slots
- ☐ Sports
- ☐ Other - Specify in the block below _____
- ☐ Don't know

A32 What is your favorite type of internet gambling game?
- ○ Poker
- ○ Video Poker
- ○ Slots
- ○ Sports
- ○ Other - Specify in the block below _____
- ○ Don't know

A33 How old were you the first time that you gambled on the internet? Type age in years or "don't know" in box below.

A34 Over the past year think about how often you gambled on the internet. Please select the category that best describes how often you gambled on the internet over the last year.
- ○ About every day
- ○ 1 to 3 times a week
- ○ Once or twice a month
- ○ A few days all year
- ○ Only 1 day in the past year
- ○ I have not gambled on the internet in the past year
- ○ Don't know

A35 Over the past year when you gambled on the internet, in an average session how long did you gamble?
- ○ Less than 2 hours
- ○ 2 to 4 hours
- ○ 5 to 10 hours
- ○ More than 10 hours
- ○ Don't know

A36 Over the past year when you gambled on the internet, in an average session did you come out ahead or behind on the money you wagered?
- ❍ Ahead
- ❍ Behind
- ❍ Broke even
- ❍ Don't know

A37 Over the past year when you gambled on the internet, during an average session how much did you come out ahead or behind?
- ❍ Under $100
- ❍ $100 to $500
- ❍ $501 to $1,000
- ❍ $1,001 to $5,000
- ❍ $5,001 to $10,000
- ❍ $10,001 to $50,000
- ❍ $50,001 to $100,000
- ❍ $100,001 to $1 million
- ❍ More than $1 million
- ❍ Don't know

A38 Prior to the economic down turn (2008 and earlier), think about how often you gambled on the internet. Please select the category that best describes how often you gambled on the internet in an average year prior to prior to 2008.
- ❍ About every day
- ❍ 1 to 3 times a week
- ❍ Once or twice a month
- ❍ A few days all year
- ❍ Only one day
- ❍ I did not gamble on the internet prior to 2008
- ❍ Don't know

A39 Prior to the economic down turn (2008 and earlier), when you gambled on the internet, in an average session how long did you gamble there?
- ❍ Less than 2 hours
- ❍ 2 to 4 hours
- ❍ 5 to 10 hours
- ❍ More that 10 hours
- ❍ Don't know

A40 Prior to the economic down turn (2008 and earlier), in an average session did you come out ahead or behind on the money you wagered on the internet?
- ❍ Ahead
- ❍ Behind
- ❍ Broke even
- ❍ Don't know

A41 Prior to the economic down turn (2008 and earlier) when you gambled on the internet, during an average session how much did you come out ahead or behind ?
- O Under $100
- O $100 to $500
- O $501 to $1,000
- O $1,001 to $5,000
- O $5,001 to $10,000
- O $10,001 to $50,000
- O $50,001 to $100,000
- O $100,001 to $1 million
- O More than $1 million
- O Don't know

A42 Now please think about the last time, the most recent day, when you gambled at a location other than a casino (non-casino venue) or on the internet in the U.S. (dog/horse race track, off site race betting, lottery sales point, card club, or private location)? Where was the venue located?
- O Nevada
- O Atlantic City
- O California
- O San Diego County
- O Another location - Specify in box below _____
- O I have never gambled at a non-Casino venue
- O Don't know

A43 How far is this non-casino venue from your home?
- O Less than 10 miles
- O Between 10 and 50 miles
- O Between 51 and 250 miles
- O More than 251 miles
- O Don't know

A44 How old were you the first time that you gambled at a non-casino venue? Type age in years or "don't know" in box below.

A45 Over the past year think about how often you gambled at a non-casino venue in the U.S. Please select the category that best describes how often you gambled at a non-casino venue over the last year.
- O About every day
- O 1 to 3 times a week
- O Once or twice a month
- O A few days all year
- O Only 1 day in the past year
- O I have not gambled at a non-casino venue in the past year
- O Don't know

A46 Over the past year when you gambled at a non-casino venue in the U.S., on an average visit how long did you gamble at the venue?
- O Less than 2 hours
- O 2 to 4 hours
- O 5 to 10 hours
- O More than 10 hours
- O Don't know

A47 Over the past year when you gambled at a non-casino venue in the U.S., on an average visit did you come out ahead or behind on the money you wagered?
- O Ahead
- O Behind
- O Broke even
- O Don't know

A48 Over the past year when you gambled at a non-casino venue in the U.S., during an average visit how much did you come out ahead or behind?
- O Under $100
- O $100 to $500
- O $501 to $1,000
- O $1,001 to $5,000
- O $5,001 to $10,000
- O $10,001 to $50,000
- O $50,001 to $100,000
- O $100,001 to $1 million
- O More than $1 million
- O Don't know

A49 Prior to the economic down turn (2008 and earlier), think about how often you gambled at a non-casino venue in the U.S. Please select the category that best describes how often you gambled at a non-casino in an average year prior to prior to 2008.
- O About every day
- O 1 to 3 times a week
- O Once or twice a month
- O A few days all year
- O Only one day
- O I have not gambled at a non- casino venue prior to 2008
- O Don't know

A50 Prior to the economic down turn (2008 and earlier), when you gambled at a non-casino venue in the U.S., on an average visit how long did you gamble there?

- ○ Less than 2 hours
- ○ 2 to 4 hours
- ○ 5 to 10 hours
- ○ More that 10 hours
- ○ Don't know

A51 Prior to the economic down turn (2008 and earlier), on an average visit did you come out ahead or behind on the money you wagered at a non-casino venue?

- ○ Ahead
- ○ Behind
- ○ Broke even
- ○ Don't know

A52 Prior to the economic down turn (2008 and earlier) when you gambled at a non-casino venue in the U.S., during an average visit how much did you come out ahead or behind ?

- ○ Under $100
- ○ $100 to $500
- ○ $501 to $1,000
- ○ $1,001 to $5,000
- ○ $5,001 to $10,000
- ○ $10,001 to $50,000
- ○ $50,001 to $100,000
- ○ $100,001 to $1 million
- ○ More than $1 million
- ○ Don't know

A53 Now, please look over the list below and select your favorite kind of game or gambling activity.

- ○ Bingo
- ○ Book-type betting (sports, races)
- ○ Card games (e.g., poker, gin rummy, hearts)
- ○ Charitable games (do not include bingo)
- ○ Dice games (e.g., craps)
- ○ Games of skill (e.g., bowling, pool, darts, golf, pinball)
- ○ Instant lottery games (such as scratch-offs and instants)
- ○ Internet/World Wide Web gambling
- ○ Live keno
- ○ Pari-mutuel sports, off-track betting
- ○ Other lottery games (such as Lotto, Lotto America, Powerball, Pick-4)
- ○ Outcome of sports events with acquaintances (e.g., football pools)
- ○ Pari-mutuel sports, racetrack and inter-track (dog racing, greyhounds, the dogs, horse racing, nags, ponies, trotters, jai-alai, thoroughbreds, harness racing, sulkies.)
- ○ Pull-tabs

- ❍ Roulette
- ❍ Slot machines (.the slots.)
- ❍ Sports pools
- ❍ Table games (in general)
- ❍ Video machine games (e.g., video poker and video keno)
- ❍ Other - Specify in box below _____
- ❍ I do not have a favorite game or gambling activity
- ❍ Don't know

B1 How important is the opportunity to socialize with friends or family in your decision to gamble?

- ❍ Very important
- ❍ Important
- ❍ Not so important
- ❍ Not at all important
- ❍ Don't know

B2 How important is the personal service from the staff in your decision to gamble?

- ❍ Very important
- ❍ Important
- ❍ Not so important
- ❍ Not at all important
- ❍ Don't know

B3 How important is being around other people in your decision to gamble?

- ❍ Very important
- ❍ Important
- ❍ Not so important
- ❍ Not at all important
- ❍ Don't know

B4 How important is the excitement or challenge of gambling in your decision to gamble?

- ❍ Very important
- ❍ Important
- ❍ Not so important
- ❍ Not at all important
- ❍ Don't know

B5 How important is the opportunity to win money in your decision to gamble?

- ❍ Very important
- ❍ Important
- ❍ Not so important
- ❍ Not at all important
- ❍ Don't know

B6 How important is the convenience of the gambling venue?
- O Very important
- O Important
- O Not so important
- O Not at all important
- O Don't know

B7 How important is the entertainment or fun value?
- O Very important
- O Important
- O Not so important
- O Not at all important
- O Don't know

B8 How important is the distraction from everyday problems?
- O Very important
- O Important
- O Not so important
- O Not at all important
- O Don't know

B9 When participating in your favorite type of gambling, who do you usually gamble with?
- O Alone
- O Spouse or partner or significant other
- O Other family member(s)
- O Friend(s), co-worker(s), neighbor(s), club member(s)
- O Some other individual or group
- O Whoever is around
- O Don't know

B10 When participating in your favorite type of gambling, do you usually drink any alcohol before, during or immediately afterwards (within 2 hours)
- O Yes
- O No
- O Don't know

B11 Inconvenience or distance from betting opportunities
- O Very important
- O Important
- O Not so important
- O Not at all important
- O Don't know

B12 Moral or ethical concerns
- ❍ Very important
- ❍ Important
- ❍ Not so important
- ❍ Not at all important
- ❍ Don't know

B13 The possibility of losing money
- ❍ Very important
- ❍ Important
- ❍ Not so important
- ❍ Not at all important
- ❍ Don't know

B14 People have different beliefs about the overall effects of legalized gambling on society. Would you say that the overall effect of legalized gambling on society is...
- ❍ Very good,
- ❍ Good,
- ❍ About equally bad and good,
- ❍ Bad
- ❍ Very bad
- ❍ Don't know

B15 How would you rate the issue of gambling in your community?
- ❍ No problem at all
- ❍ A small problem
- ❍ A problem
- ❍ A serious problem
- ❍ The most serious problem your community has
- ❍ Don't know

C1 Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about your betting experiences, or planning out future ventures or bets?
- ❍ Yes
- ❍ No
- ❍ Don't know

C2 Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about ways of getting money to bet with?
- ❍ Yes
- ❍ No
- ❍ Don't know

C3 Have you ever lied to family members, friends, or others about how often you wagered, or about how much money you lost in your wagers?
- ○ Yes
- ○ N0
- ○ Don't know

C4 Has this happened three or more times?
- ○ Yes
- ○ No
- ○ Don't know

C5 Have you ever tried to stop, cut down, or control your betting?
- ○ Yes
- ○ No
- ○ Don't know

C6 On one or more of the times when you tried to stop, cut down, or control your betting, were you restless or irritable?
- ○ Yes
- ○ No
- ○ Don't know

C7 Have you ever tried but not succeeded in stopping, cutting down, or controlling your betting?
- ○ Yes
- ○ No
- ○ Don't know

C8 Has this happened three or more times?
- ○ Yes
- ○ No
- ○ Don't know

C9 Have there ever been periods when you needed to gamble with increasing amounts of money or with larger bets than before in order to get the same feeling of excitement?
- ○ Yes
- ○ No
- ○ Don't know

C10 Have you ever wagered to relieve uncomfortable feelings such as guilt, anxiety, helplessness, or depression?
- ○ Yes
- ○ No
- ○ Don't know

C11 Have you ever wagered as a way to distract yourself from personal problems?
O Yes
O No
O Don't know

C12 Has there ever been a period when, if you lost money gambling one day, you would often return on another day to get even, or win back what you lost?
O Yes
O No
O Don't know

C13 Have you ever written a bad check or taken money or something that didn't belong to you from family members or anyone else in order to pay for your betting?
O Yes
O No
O Don't know

C14 Has your betting ever caused serious or repeated problems in your relationships with any of your family members or friends?
O Yes
O No
O Don't know

C15 Has your betting ever caused you to have problems in school, to have trouble with your job, or to miss out on an important career or educational opportunity?
O Yes
O No
O Don't know

C16 Have you ever needed to ask family members or anyone else to loan you money or otherwise bail you out of a desperate money situation that was largely caused by your wagering?
O Yes
O No
O Don't know

C17 Did you ever argue with a family member about your betting to the point where it became emotionally harmful?
O YES
O NO
O DON'T KNOW

C18 Did such an argument ever become physical?
O Yes
O No
O Don't know

C19 During the past year have there been any periods lasting two weeks or longer when you spent a lot of time thinking about your betting experiences or planning out future ventures or bets?
- O Yes
- O No
- O Don't know

C20 During the past year have there been periods lasting two weeks or longer when you spent a lot of time thinking about ways of getting money to bet with?
- O Yes
- O No
- O Don't know

C21 During the past year have you lied to family members, friends, or others about how often you wagered, or how much money you lost on your wagers?
- O YES
- O NO
- O DON'T KNOW

C22 Has this happened three or more times?
- O Yes
- O No
- O Don't know

C23 During the past year have you tried to stop, cut down, or control your betting?
- O YES
- O NO
- O DON'T KNOW

C24 During the past year, on one or more of the times when you tried to stop, cut down, or control your betting, were you restless or irritable?
- O Yes
- O No
- O Don't know

C25 During the past year have you tried but not succeeded in stopping, cutting down, or controlling your betting?
- O YES
- O NO
- O DON'T KNOW

C26 During the past year has this happened three or more times?
- O Yes
- O No
- O Don't know

C27 During the past year have there been periods when you needed to wager with increasing amounts of money or with larger bets than before in order to get the same feeling of excitement?
O Yes
O No
O Don't know

C28 During the past year have you wagered to relieve uncomfortable feelings such as guilt, anxiety, helplessness, or depression?
O Yes
O No
O Don't know

C29 During the past year have you wagered as a way to distract yourself from personal problems?
O Yes
O No
O Don't know

C30 During the past year has there been a period when, if you lost money wagering on one day, you would often return another day to get even, or win back what you lost?
O Yes
O No
O Don't know

C31 During the past year have you written a bad check or taken money or something that didn't belong to you from family members or anyone else in order to pay for your betting?
O Yes
O No
O Don't know

C32 During the past year has your betting caused serious or repeated problems in your relationships with any of your family members or friends?
O YES
O NO
O DON'T KNOW

C33 During the past year has your betting caused you to have problems in school, to have trouble with your job, or to miss out on an important career or educational opportunity?
O YES
O NO
O DON'T KNOW

C34 During the past year, have you needed to ask family members or anyone else to loan you money or otherwise bail you out of a desperate money situation that was largely caused by your wagering?

- O YES
- O NO
- O DON'T KNOW

D1 First, please tell us your gender.

- O Male
- O Female

D2 What is your age? Type age in years in box below

D3 What racial background best describes you (select only one)?

- O Hispanic, Latino, or Spanish origin
- O Alaskan Native
- O American Indian
- O Black, African American or Negro
- O White
- O Pacific Islander
- O Japanese
- O Chinese
- O Korean
- O Vietnamese
- O Other Asian - Specify in box below _____
- O Another group - Specify in box below _____

D4 What is the highest grade or level of schooling completed (select only one)??

- O Never attended school
- O 8th grade or below
- O Some high school
- O High school graduate
- O Some technical school / technical school graduate
- O Some college
- O College graduate
- O Some graduate or professional school
- O Graduate or professional school graduate

D5 What is your home zip code?

D6 Please select the number that is the closest estimate of your total household income for the previous calendar year (2011). Please indicate the amount of household income BEFORE taxes (select only one).

- O Less than $25,000
- O $25,001-$50,000
- O $51,001-$75,000
- O $75,001- $100,000
- O $100,001-$125,000
- O $125,001-$150,000
- O $150,001-$200,000
- O $200,001-$250,000
- O More than $250,000

D7 What is your current marital status (select only one)?

- O Never been married
- O Married living with spouse
- O Living with a partner
- O Separated
- O Divorced
- O Widowed

D8 Have you ever been divorced?

- O Yes
- O No

D9 How many times have you been married?

- O Once
- O Twice
- O Three or more times

D10 Was your gambling ever a significant factor or cause toward your getting a divorce? Please consider all divorces you may have had.

- O Yes
- O No

D11 What is your current religious preference? Are you ... (Protestant includes Baptist, Episcopal, Lutheran, Methodist, Calvinist/reformed/Presbyterian, Pentecostal, Quakerism)

- O Protestant
- O Catholic
- O Jewish
- O Muslim
- O Mormon/Latter Day Saints
- O None
- O Other - specify in box below _____
- O Christian

- ❍ Eastern (Hindu/Buddhist/Mystical/Sikhism)
- ❍ Jehovah's Witness

D12 How often do you attend worship services?
- ❍ Weekly
- ❍ Once or twice a month
- ❍ On major holidays only
- ❍ Once or twice a year
- ❍ Never

D13 Right now, what is your employment status (select only one)?
- ❍ Working full-time, with only one job
- ❍ Working full-time and working an additional part-time job
- ❍ Working part-time, with only one job
- ❍ Working more than one part-time job
- ❍ Unemployed or not in the official labor force (Includes retired, disabled, student, homemaker/child care, supported by someone else, independent wealth or income, looking for a job but unable to find one.)

D14 Have you lost or been fired from any job?
- ❍ Yes
- ❍ No

D15 Was your gambling a significant factor or cause of your losing or being fired from one or more jobs?
- ❍ Yes
- ❍ No

D16 Have you ever been arrested or detained by the police or a sheriff?
- ❍ Yes
- ❍ No

D17 Was gambling a significant factor or cause in any such arrest?
- ❍ Yes
- ❍ No

D18 Has this arrest been within the past year?
- ❍ Yes
- ❍ No