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FINAL REPORT

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**Effects of Casino Gambling on Crime and Quality of Life in New Casino
Jurisdictions**

FINAL REPORT

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Executive Summary

Effects of Casino Gambling on Crime and Quality of Life in New Casino Jurisdictions
Grand Award 98-IJ-CX-0037

With the dramatic increase in casino gambling in the 1990s, one of the most important domestic policy questions became, What impact do casinos have on communities? Rancorous debate often erupted among the residents in jurisdictions where casino legislation was proposed. Proponents of legalization stressed the economic benefits thought to result from the establishment of a casino. Increased job opportunities, a new (or enhanced) tourism industry, and increased tax revenues were compelling arguments, especially in economically depressed communities which had few other options available.

Opponents tended to stress the social problems believed to result from casinos and the change in the nature of the community itself, as many expected the gambling industry would become a major force in the daily life and politics of the community. Crime, divorce, bankruptcy, and a change in traditional community values were seen as problems that would inevitably accompany casino legalization.

Despite the level of acrimony generated by the casino legalization debate, an empirical foundation was missing. Voters and policy makers were often unable to separate rhetoric from reality, for research on many of the key questions was incomplete or totally lacking. Consequently, one of the goals of the current research was to provide an objective and multi-dimensioned assessment of the impact of casino gambling in new casino jurisdictions.

To accomplish this, a research team composed of an economist and two criminologists, assisted by demographers and experts in survey research, completed perhaps the most intensive community based research ever conducted on new casino jurisdictions. The research plan as completed involved eight new casino jurisdictions: Alton and Peoria/East Peoria, Illinois; Sioux City, Iowa; St. Joseph, St. Louis (city) and St. Louis County, Missouri; and Biloxi, Mississippi. The communities were chosen because each had recently initiated casino gambling and law enforcement officials were willing to make available Part I and Part II crime data for four years before and four years after the casinos began operation.

The communities ranged in population from 22,385 for East Peoria and 32,905 for Alton, Illinois, to 113,504 for Peoria and 396,685 for the city of St. Louis. All of the communities lost population from 1980 to 1990 (Bureau of the Census, 1992). Each community has a riverboat, with the exception of Biloxi, Ms., which has nine casinos located on stationary barges. These barge casinos tend to be larger than the riverboat casinos and their size and concentration in Biloxi have resulted in the casinos and the tourists they draw playing a much larger role in Biloxi than in the other communities studied. The other extreme is St. Louis, a relatively large city with a single riverboat casino, although several others are in nearby communities. In St. Louis, unlike some of the other communities included in the study, their riverboat casino has relatively little impact on tourism and on the overall economy.

Significant findings of the research indicate that most community leaders in the

new casino jurisdictions believe that the casinos have been good for the communities, although 10% to 20% of the leaders saw casinos as a negative influence. The casinos do not appear to have any general or dramatic effect on crime, especially in communities that do not have a high concentration of casinos. The data indicate that minor crimes are more likely to increase in casino communities than are the index offenses, although there is little consistency in types of crimes that significantly change when all the new jurisdictions are compared. Bankruptcy does appear to be influenced, with a significant increase in rate of personal bankruptcy found in five of seven communities. In only one community did divorce significantly increase, while it significantly decreased in four of the eight casino communities. Suicide increased significantly in two casino communities, and significantly decreased in one.

The findings suggest that casinos do not affect all communities in a simple, similar, or nonvariant fashion. The evidence suggests that casinos appear to be neither as good for a community as supporters contend, nor as negative as opponents argue. More detailed descriptions of the research and findings are presented in summary form below.

Method

There were three main components of the research plan. The first component consisted of site visits to each of the eight communities selected for inclusion in the study. Research teams composed of an economist and one or two criminologists visited each community and sought to interview community leaders to get their views on why casino gambling was introduced into the community and their perspective on the impact the casino had on their community. A broad spectrum of community leaders were interviewed, from mayors to police chiefs and heads of social service agencies, to get feedback from leaders representing diverse perspectives.

A second major component of the research consisted of telephoning several hundred residents in each community to obtain their opinions regarding the impact of the casino on the community and their views on how the casino affected day to day living within the community. The survey consisted of a variety of open ended as well as fixed response questions covering, among other topics, questions concerning their gambling experiences, whether the casino changed their neighborhoods, and whether they knew individuals who were problem gamblers. A total of 2,768 individuals were interviewed for the project.

The third component consisted of gathering a variety of official data to determine how the communities changed once casinos were introduced. Comparisons were also made between the casino communities and a number of matched control communities. Bankruptcy, divorce, and suicide data comprise important data sets for this analysis. Other data collected had never before been analyzed in such an in-depth manner. For example, crime statistics were gathered not simply for Part I or Index Offenses, but also for the more minor Part II offenses, such as simple assault, prostitution, and DUI, which many criminologists believe are more likely to be associated with casinos than are the more serious crimes, such as murder and forcible rape. Also, the crime rates were calculated using both the residential population of the community and the population at

risk, which includes tourists in the crime rate population calculations.

Results

Community Perceptions

The interviews with 128 community leaders in the seven casino communities revealed that a clear majority (59%) were in favor of the casino's presence. Most (65%) believed that the casino enhanced the quality of life in the community, had a positive effect on the economy (77%), and had little, if any, effect on crime (69%). In all of the seven communities, the majority of community leaders believed that the casino contributed to the economic well-being of the residents. In six of seven communities, the leadership believe the casinos have little effect on crime. In five of the seven communities, the majority of the key individuals agreed that the quality of life was enhanced by the casino.

Degree of agreement varied by community, with the most favorable responses on several dimensions, especially economic impacts, coming from the leadership of Biloxi. It appears that one of the main determinants of attitudes towards casinos by those in leadership positions is degree of economic impact the casino has on the community. In those communities that depend heavily upon a casino for their economic well-being, the casinos have been enthusiastically embraced; in those communities where casinos are only a minor part of the economy, the leaders tend to be more moderate in their appraisal of the impact of the casino on the community.

The second major component of the study is the community survey. The analysis is based on a total 2,768 voluntary and anonymous interviews of adult residents of the seven communities. The interviews were accomplished through use of a computer assisted telephone interviewing (CATI) survey. The number of interviews for each community varied from a low of 101 in East Peoria to a high of 420 in St. Joseph. The number of interviews from each community is believed sufficient to ensure the reliability and robustness of results.

One element of the survey data examines resident perceptions of problem gambling within their communities and, more specifically, prevalence of problem gambling among friends and relatives. Combining the responses of all seven jurisdictions, the mean estimate is that 16% of new casino jurisdiction residents have a gambling problem. The range is from 11% in St. Louis County to 18% in Sioux City. The results specifically suggest that when problem gambling occurs "close to home" (among friends or relatives) it has a more salient effect on the individual's perception of problem gambling in the community. It should also be noted that respondent perception of problem gambling within these communities is at a much higher level than is found by more objective measures (less than 7 percent).

Crime Data

To determine the effect of casinos on crime in new casino jurisdictions, crime data were collected from police department records in seven jurisdictions. East Peoria

was not included in analysis of crime issues due to unavailability of data from their police department. Each initiated casino gambling in the 1990s and have had casino gambling for a minimum of four years. This time frame allows comparisons to be made before and after casinos were in operation. Crime rates were calculated for each offense in each community based both on population and population at risk, which adds average daily tourist population to the resident population. Crime data for both serious crimes and for relatively minor offenses were collected.

Comparing the before and after crime rates utilizing the population at risk (the more conservative measure to gauge a possible casino effect), the data reveal few consistent trends in crime. In three communities (Sioux City, Peoria, and Biloxi), there were many more crimes that significantly increased than decreased. In three other jurisdictions (Alton, St. Louis (city), and St. Louis County), there were many more crimes that significantly decreased than increased. In one city (St. Joseph), the vast majority of crimes showed no change. The Wilcoxon Signed Rank Test for Paired Differences was used to analyze offense categories for which data were available in five or more communities to compare crime rates before and after the introduction of casinos. Few statistically significant changes are found in pre and post casino periods. Analyzing the traditional crime rate measure based on resident population, data for burglary and larceny are found to be significant at the .10 level and suggest that there was a decline in burglary and an increase in larceny. Results for drug violations and family offenses are significant at the .05 level and are consistent with increases in these offenses. When examining crime rates normalized by the population at risk, only burglary and drug violations appear to have significantly changed.

In a second phase of the analysis of the crime data, rates of serious (Part I) and less serious (Part II) offenses in each community were compared to a control community matched on fifteen demographic, economic, and social variables. Crime rates were again calculated in two ways: based on the resident population and based on the population at risk.

Results indicate little consistency in crime trends for the communities studied. Of the 169 comparisons between the casino and control (noncasino) community crime rates, 45% revealed no significant change. A simple tally of the direction of the t values provides a rough indication of the evidence concerning a possible casino effect when there is a significant change. Using per capita population as the basis for standardization, 55% of the 51 comparisons that achieved statistical significance were positive, indicating an increase in crime. When the communities were compared using the population at risk as the basis for standardization, 52% of the 40 statistically significant comparisons were positive. In some communities, the majority of significant changes in crime rates were negative; in other communities, the majority of the significant changes were positive.

The examination of the results indicate that there can be no conclusive statement regarding the effect that casinos have on crime. The fact that the results are mixed suggests that there may be some contextual factors operating in some communities that allow for casinos to increase crime under certain, as yet unknown circumstances.

Suicide and Divorce

To analyze the impact that casino gambling has on the social fabric of a community, suicide and divorce rates in eight casino communities were compared to the rates in non-casino control communities. Five matching control communities were selected for each casino community to ensure the results were not sensitive to the selection of any one particular control jurisdiction. The control communities were selected based on their similarity to the casino communities on 15 demographic, social, and economic variables.

Calculating the difference in divorce rates before and after casinos entered communities and comparing the changes to their respective control communities indicate that the rates significantly decreased in four of the eight casino communities; in only one of the comparisons did the divorce rate in the casino community show a significant increase when compared to the control communities. These results suggest that statements proclaiming that casinos increase divorce in a community are not supported by the data.

When suicide rates are compared for casino and control communities, results reached statistical significance in only three of the eight comparisons, increasing significantly in two cases and decreasing significantly in one case. When a regression equation was run controlling for economic, demographic, and social integration factors, the findings indicate that the presence of a casino in and of itself is not associated with a statistically significant increase in per capita suicide, but that the size of the casino industry does matter. In particular, larger casino markets (measured by per capita casino revenue) are positively associated with higher suicides. It should be noted, however, that the overall fit of the equation is somewhat low (R^2=.20), and that once Biloxi is removed from the sample, casino size is insignificant.

Based on the findings of the present research, it is difficult to generalize about the effect of casino gambling on suicide and divorce. Casino communities tended to experience a greater decrease in divorce than in the control communities, whereas suicide showed the opposite effect. However, in examining both divorce and suicide, a few communities went against the general trend. What is apparent is that attempting to understand how casino gambling affects divorce and suicide in a community is not a simple matter and the effect of casinos on these phenomena does not lend itself to sweeping generalizations.

Bankruptcy

Bankruptcy rates in the eight new casino communities were compared to bankruptcy rates in eight non-casino control communities. The control communities were chosen based on their similarity to the casino communities matched on 15 demographic, social, and economic variables. Comparisons of bankruptcy rates were based on county-level data for personal bankruptcy, both Chapter 7 and Chapter 13, which were analyzed for 1989:Q4 through 1998:Q1.

The results indicate that casino gambling is associated with an increase in personal bankruptcy in seven of the eight communities. In five of the seven communities the increase is statistically significant. The most significant changes in bankruptcy occurred among Chapter 13, as opposed to Chapter 7, filings. The results

also tend to suggest that there is a direct and positive relationship between length of time casinos have been in a community and bankruptcy rate, as those communities that have had casinos the longest tended to have the greatest increase in bankruptcy. However, the study shows that an increase in bankruptcy rate is not an inevitable product of casinos opening in a community. One community (Biloxi/Harrison County, MS) actually experienced a significant decrease in bankruptcy rate.

Social Capital and Quality of Life

Analyses of social capital are attempts to measure degree of residents' connection to their neighborhood and community. Several questions included in the community survey were designed to measure satisfaction with neighborhood and community well-being, neighborly behavior, and trust in neighbors and government officials. The independent variables used were whether respondents believed gambling was good for the community and how the respondents' gambling behavior influenced their views of community cohesion.

The analysis of the social capital variables suggests that, contrary to assumptions, the introduction of casinos did not tear the fabric of the community. Overall, although there are perceived negatives (increased crime, fear of crime), the perceived positives (increased standard of living, the community being a better place to live) are given greater importance in contributing to the community's quality of life. In all the communities studied, the belief that gambling was good for the community was positively and significantly related to social capital whereas the respondents' gambling behavior was significantly and positively related to social cohesion in only three communities (Biloxi, St. Louis (city), and East Peoria).

Five questions in the community survey were included to permit an analysis of respondent perceptions of changes in quality of life due to the casinos' presence. The results of the analysis indicate that while many in the community believed that casinos increased or decreased their quality of life, none of the measures reached statistical significance. The fact that respondents were fairly evenly divided on the issue of how casinos affected quality of life in the community indicates that, even after a minimum of four years of a casino's presence in these communities, opinions continue to be divided regarding the impact of casinos on the community.

Limitations of the Research

It should be noted that the new casino jurisdictions included in this research tended to have a single casino. The findings for Biloxi, a community with a high concentration of casinos, frequently tended to differ, both positively and negatively, from the other communities studied. It is also important to note that the communities had casinos for less than ten years. The positive or negative impact could well change given greater duration within the community.

The analysis indicates that there are few consistencies between communities when comparing the before and after rates for new casino jurisdictions. It is possible that the numbers (as crime and tourism statistics) are so imprecise as to result in these

inconsistencies. It is equally plausible that the effects of casinos in a community are quite varied, depending on a multitude of variables beyond the scope of the present research. Based on the differential impact that casinos have on these communities, we conclude that simple analyses and broad generalizations are not sufficient to capture the complexity of what occurs in communities when legalized casino gambling is introduced.

Chapter 1

The Project and Its Design

This project was undertaken by B. Grant Stitt and Mark Nichols of the University of Nevada, Reno and David Giacopassi of the University of Memphis. In order to discuss the project's accomplishments in the context of its original conceptualization, the following original project abstract, as included in the project proposal, followed by the literature review and the body of the original proposal are presented.

Original Project Abstract

Project Goals and Objectives

Since casino gambling is a relatively new phenomenon in most areas of the country, few studies have systematically examined the impact of casinos on crime and the quality of life in communities with newly opened casinos. Those studies that have analyzed the relationship between casino gambling and crime have yielded inconclusive and contradictory results. The proposed study will examine the effects of casino gambling on seven communities in which casinos have recently been introduced. These jurisdictions are: St. Louis, St. Joseph, and St. Charles, Missouri; Alton, and Peoria/East Peoria, Illinois; Sioux City, Iowa; and Biloxi, Mississippi. The study will be done utilizing a multi-disciplinary approach incorporating criminological, economic, demographic and sociological perspectives.

The proposed research will focus on the impact of casinos on communities in three general ways. First, the impact of casinos on crime rates for both Part I and Part II UCR offenses will be examined in both casino and non-casino (control) communities.

The inclusion of Part II offenses is a major improvement over a vast number of the previous studies that have examined only Part I offenses. The critical element of population at risk, which includes the tourist population, will be utilized to calculate crime rates for both casino and non-casino jurisdictions. Second, community surveys (N=2,800) will be conducted to assess community perceptions of changes in crime and quality of life that may have accompanied the advent of casinos. In addition, qualitative data reflecting quality of life will be gathered from interviews of community leaders and social service providers. Finally, factors such as suicide rates, divorce rates, bankruptcies and various economic indicators will be closely examined for possible casino related fluctuations.

Literature Review

The proliferation of casino gambling across the American landscape has generated a considerable amount of debate regarding the benefits and detriments of gambling both as an industry and as a recreational outlet. Conflicting and seemingly irreconcilable claims are made on both sides of the debate by the proponents and opponents of casino gambling. Worsnop notes that organized campaigns led by conservative religious groups have resulted in casino gambling being voted down in 30 of the last 32 casino gambling referenda.[1] As a result, the casino industry has formed the American Gaming Association, a lobbying interest group, to combat what it perceives as unfair characterizations of the gaming industry. To sort through the conflicting claims and to gain an understanding of the impact of gambling on American life, the U.S. Congress enacted legislation creating the National Gambling Impact Study Commission. Though this commission will have the responsibility to study the impact of

gambling, we believe that the in-depth study proposed here will significantly complement the research endeavors achieved through the auspices of the National Gambling Commission.

Previously, research on the effects of casino gambling on communities has been conducted by academics from a variety of disciplines and by a variety of state government agencies. The research has taken numerous forms including analyses of (1) the relationship of casinos gambling and crime, primarily focusing on Part I UCR offenses; (2) the relationship of casino gambling to organized crime; (3) the prevalence of pathological gambling and its effects on communities; (4) the prevalence of underage gambling; (5) effects of legalized casino gambling on the economic sector; and (6) to a limited extent, the style and quality of life in legalized casino jurisdictions. For a thorough review and discussion of casino gambling's impacts on these areas, see "Gambling and Social Policy: An Analysis of Legalized Gambling's Impact on Communities" -- a paper presented at the November 1997 Annual Meeting of the American Society of Criminology by Giacopassi and Stitt.[2]

Of particular relevance to the present presentation is the Summary and Conclusions from the Giacopassi and Stitt paper presented here -

Despite widespread legalization of casino gambling, it remains controversial both with regard to its effect on crime as well as its effects on the more diverse socioeconomic aspects of the community. Lesieur has summarized what is known about the relationship of gambling to crime.[3] "First of all, we know that a heavy concentration of casinos in an area is associated with tourism-related crime. Secondly, some areas seem to have had little or no measurable crime impact. Thirdly ...we also know that

compulsive gamblers do crimes to finance their gambling."[4] Lesieur explains the somewhat contradictory statements that pathological gamblers commit crime to finance their habits and that many places have little measurable increases in crime by suggesting that the UCR measures are not precise enough to gauge all changes in the incidence of crime.[5]

Generally, it appears that the number of crimes increases where casino gambling is legalized. However, as Eadington points out, this may be a function of increased tourism rather than anything inherent in casino gambling itself, as the introduction of resorts and theme parks into an area has similar negative effects as do casinos on the area's crime.[6] For example, an analysis of crime one year before and one year after the Mall of America opened in Bloomington, Minnesota, revealed that UCR Part I crime increased by 33.6% while Part II offenses increased by 120.8%. This increase is in raw numbers, and does not take into account the 40 million people who annually go to Bloomington to visit the Mall of America.[7] At the same time, whether or not the effect is the generation of more crime once the increased tourist population is factored in remains to be seen. Regardless, Eadington has concluded that "there is no compelling evidence that crime rates in cities with casinos are much different than in cities with tourist attractions in general".[8]

A purely financial analysis tends to support the view that casinos are net contributors (via taxes) to municipalities. In effect, taxes collected from casinos more than pay for the cost of city services expended to support casinos. A key factor as to whether casino gambling leads to economic prosperity in a community or simply drains money from the community, funneling it to the large corporations that own many of the

casinos, may depend both on the number of tourist-gamblers attracted from outside of the normal business area and how well the casinos are integrated into the community.

Clearly casinos do change citizens' patterns of savings and spending. For example, it has been reported that in 1992, Americans spent more on legal gambling than on books, movies, music, and theme parks combined.[9] The impact of this spending is difficult to calculate, although it almost certainly will be negative for a significant number of people and local businesses in casino jurisdictions. It can also be argued that the opposite is true: casinos bring prosperity to significant numbers in a community through employment and increased commercial activity.

The impact of casinos on a community's standard and style of living is also difficult to gauge. Clearly, casinos bring tourists and entertainment. Other recreational amenities often follow (restaurants, theaters, golf courses). They also bring noise, traffic, and a definite change in a community's traditional social and cultural environment. Whether this is positive or negative may depend on the individual and his or her view of gambling and the changes it brings to a community.

Casino gambling is now legal in 23 states. It has often been promoted as a panacea for economic ills. While gambling has not generally fulfilled its promoters' promises, it has provided jobs, new capital investments, and some degree of economic vitality to areas that were in dire need of economic revitalization. Casinos have brought new prosperity to communities in Mississippi and elsewhere, and have been a boon to the financial well-being of several Indian Reservations.

Future research should attempt to broaden both the social and geographic scope of analysis of gambling. In the past, criminologists have analyzed crime trends;

economists have studied employment, taxes, and real estate values; psychologists have analyzed the impact casinos have on compulsive gambling. However, until research is conducted that analyzes the impact of casinos on a variety of communities in toto, no definitive or even convincing answer can be given to the advisability of a community legalizing casino gambling. Although no definitive answer can be given to the wisdom of a community legalizing casinos, one thing is apparent: there are both advantages and disadvantages that go hand in hand with legalized gambling. Ultimately, the evaluation of a casino's impact on a community may well depend on the community's pre-casino well-being, the type of control exercised by the community over the casino operations, as well as each individual's assessment of the benefits and detriments that casinos bring to the community and to each individual's lifestyle.

Original Project Proposal

The proposed study represents the first such attempt to examine the impact of casino gambling in a holistic manner across a number of jurisdictions. The study will examine crime rates controlling for tourism for both Part I and Part II offenses. The UCR states that "understanding a jurisdiction's industrial/economic base...its economic dependence on nonresidents (such as tourists and convention attendees)...all help in better gaging and interpreting the crime known to and reported by law enforcement."[10] One can appreciate the potential importance of tourism for crime by examining the figures for Atlantic City, New Jersey. Atlantic City has approximately 36,000 inhabitants, but an annual tourist population of well over 30 million people. Albanese [11] and Curran and Scarpitti [12] note that tourism must be factored into Atlantic City's "population at risk" to provide an accurate assessment of the effects of large numbers of

nonresidents on a community's crime rate.

The inclusion of Part II offenses in the proposed study remedies a weakness of most past research which focused only on Part I crime. Limiting analysis to Part I offenses is a weakness because it is likely that crimes such as embezzlement, credit card and check fraud, public order crimes and crimes involving domestic violence are most affected by casino gambling vis-a-vis problem gambling. The proposed study will also examine bankruptcy, divorce and suicide rates to determine if they are affected by the presence of casinos in a community.

Finally, the present study will also examine quality of life issues by conducting community surveys and interviews. Anonymous telephone surveys will be taken to determine local citizens' perception of the quality of life and sense of community since the introduction of casinos. Similarly, interviews with local officials and social workers will be conducted to determine their perceptions on the benefits and costs of casino gambling to a local community.

A major strength of the proposed study is that the research will be conducted by an inter-disciplinary team composed of two criminologists/sociologists and an economist who are the principle investigators. Additional inter-disciplinary expertise will be provided by a demographer and criminal justice policy specialist.

Methodology

Evaluating the Impact of Casinos on Crime and the Quality of Life

We propose to employ a multi-method approach to evaluate the impact that the introduction of casino gambling has on crime, quality of life, sense of community, economic development, and social costs. To analyze these issues, we have chosen

seven communities where casino gambling has recently been introduced. These seven communities are: St. Louis, Missouri; St. Charles, Missouri; St. Joseph, Missouri; Peoria/East Peoria, Illinois; Alton, Illinois; Sioux City, Iowa; and Biloxi, Mississippi.

There were several criteria used in selecting these seven communities. First, casino gambling had to be in place for at least three years. Thus, only jurisdictions that had casinos prior to 1995 were considered. This was done to allow sufficient time for any impacts to occur and to ensure there were enough observations to make any analysis statistically meaningful and credible.

Second, we selected a set of communities that represents the broad spectrum of casino gambling offered. For example, regulatory constraints vastly differ among jurisdictions.[13] Some communities have restrictions on gambling losses (Missouri), some have cruising requirements where the boats must actually sail (Illinois), while others are land based (Mississippi) or remain dockside (Iowa). It has been suggested that these various types of regulatory constraints may have differential impacts on such factors as economic benefits, social costs, and possibly crime.[14] Similarly, the sample communities provide examples of casinos in various sized metropolitan areas, some of which cater primarily to locals (e.g., Peoria, Alton) while others cater to tourists (e.g., Biloxi). These characteristics are also hypothesized to provide differential costs and benefits.[15]

The other reasons for selecting these communities were more practical. For one, we needed a manageable number of jurisdictions. The availability of crime data was also a limiting factor. A number of jurisdictions were contacted and some were eliminated from consideration due to insufficient data. Generally, these jurisdictions did

not have sufficient data prior to the introduction of casino gambling for base-line considerations. For example, East St. Louis, Illinois had no computers until 1995 due to insufficient funds. In Davenport, Iowa the data was not stored in an accessible form. This eliminated the entire "Quad Cities" region from contention. Similarly, Gulfport Mississippi, due to a computer breakdown, switched to a new system two years ago and prior data was not recoverable. Moreover, the city doubled in size due to annexation, creating a major analytical problem. Other jurisdictions were found unsuitable due to community characteristics. Notably, the towns of Black Hawk, Cripple Creek, and Central City, Colorado as well as Deadwood, South Dakota were eliminated from consideration because they are isolated mining towns with small populations. Finally, some jurisdictions were not cooperative. Both Tunica and Vicksburg, Mississippi, for example, were not responsive to cooperating with the proposed study.

Finally, this study decided not to analyze jurisdictions containing only Indian casinos. The primary reason for this decision is the remote, rural location of most Indian casinos. Given the isolated nature of the casino, inferences regarding crime were perceived to be too difficult. Patrons visiting Indian casinos frequently drive many miles to gamble. The impact of casino gambling on crime and quality of life, therefore, is more likely to appear in these distant communities. Obtaining data from a large number of communities in order to analyze the impact of a single casino was deemed impractical. Secondly, information on Indian casinos (size, revenue, etc.) is not publicly available. Finally, data from tribal authorities is likely to be unavailable, unreliable and/or not comparable with other jurisdictions.

In order to examine the various impacts that the introduction of casino gambling

may have on communities, this study will gather various types of quantitative and qualitative data. In particular, the following types of information will be gathered: (1) Part I and Part II criminal offenses obtained from the local police departments; (2) A community perception survey conducted in the communities where casino gambling is offered; (3) Interview data gathered from local officials and prominent community leaders (e.g., chiefs of police, mayors, city council members, chamber of commerce officials, etc.); (4) Data on quality of life and social disruption collected through interviews with social workers, problem gambling hotline organizations, substance or spouse abuse centers, etc., and collected from public sources (e.g., suicide data from the Center for Disease Control); and (5) Data on the economic impact of casino gambling gathered through public data sources (e.g., Bureau of Economic Analysis) and local sources (e.g., Chambers of Commerce, Bankruptcy Courts).

Part I and Part II Criminal Offenses

Data on the number of Part I and Part II criminal offenses will be obtained from local police departments. The time period covered will be at least three years prior to the introduction of casinos up to the present. In addition, we will be collecting identical data from "control" communities. These communities will have similar economic, social, and demographic characteristics to the casino communities. They are intended to be the "twin city" to the casino jurisdiction, similar in every way with the exception of casinos. We will be hiring a highly qualified demographer as a consultant to choose the control jurisdictions. By comparing crime rates by type of offense before and after the introduction of casinos in both the casino and control jurisdictions, inferences can be drawn about what impacts, if any, casinos have on crime.

While comparing the number of crimes is useful, it only tells part of the story. Casinos draw a large number of people, many of whom may be tourists or out-of-town visitors. Therefore, crime rates that are adjusted by the population of the community rather than the population at risk (community population plus visitors) will bias crime rates upward.[16] To avoid this bias, we will be controlling for the population at risk by gathering data on the number of visitors to the community from local Visitor and Convention Authorities. Moreover, in Iowa, Illinois, and Missouri, the number of visitors to the casino will be collected from Gaming Control. Data on the number of casino visitors is available since the casino opened. Data on visitors to the community are available prior to the opening of casinos, generally for three years prior to the opening of casinos to present.

Of course, when examining the link between casino gambling and crime, it is important to control for other factors that influence crime rates in a community. In particular, as documented in the academic literature, the economic conditions, demographic makeup, and deterrence efforts of communities must be considered.[17] This study will control for socioeconomic factors by gathering data on economic and demographic characteristics of the chosen communities from sources such as the Bureau of Economic Analysis, the Census Bureau, and, where appropriate, the local community itself. This information will be used as a set of control variables in the statistical analysis. Below is a description of the various economic and demographic control variables that have been shown in the aforementioned literature to be correlated with crime.

Economic Factors

According to the economic approach to crime, as the gains from criminal activity increase relative to the opportunity costs (foregone wages from legal activity and incarceration), criminal activity will rise).[18] The primary determinant of committing a crime, therefore, is the differences in opportunities people face. The variables capturing these differences include the median household income and the unemployment rate.[19] For example, higher rates of unemployment, lower median incomes, and/or lower real wages are expected to be positively correlated with criminal activity because the opportunity cost of incarceration (lost wages) are lower. Similarly, crime rates are expected to be higher during economic downturns or as the proportion of the population below the poverty line increases.

In addition, we are able to collect casino level data through Gaming Control in the various states. Information is available on a monthly basis on the number of slot machines, the number of table games, gross gaming revenue (how much players lost), the number of admissions, and the size of the casino. It seems plausible to us that these might be important factors in determining the crime rates as increased opportunities to gamble (more slots and tables) may lead to social problems and crime.

Demographic Variables

In addition to economic variables, demographic variables have also been shown to be associated with crime.[20] Factors such as tourism, the proportion of the population that is young, urbanization, industrialization, church affiliation, population growth, ethnic makeup, and the level of education will all be considered.

The extent of tourism in the area has been shown to influence crime rates.[21]

Tourists make easy targets as they frequently carry cash and have other items (jewelry, cameras, etc.) that are easily converted to cash. Similarly, tourists are less likely to return for a court appearance. Therefore, a higher proportion of tourists should increase crime rates. This is an especially important factor to be aware of and control for when examining the relationship between casino gambling and crime as it may be the attraction of tourists, as opposed to the casino per se, that is driving crime rates.

Urbanization may also influence crime rates, but the impact is ambiguous.[22] On the one hand, more rural areas tend to be isolated and have less neighborhood surveillance, a factor conducive to crime. On the other hand, urban areas make it easier for criminals to blend in with the crowd and there may exist neighborhood apathy as neighbors do not want to get involved with crime prevention.

The proportion of the population that is young (aged 15-24) and/or poorly educated is expected to positively impact crime rates[23] Younger or less educated people may be more inclined to commit crimes because lower incomes and wages imply a lower opportunity cost of incarceration. Moreover, the myopic view of young people that "getting caught can't happen to me" may cause them to overestimate the benefits of crime and/or underestimate the costs.

Finally, variables such as church affiliation may reflect the moral fabric of a community. High church membership may also be associated with more concern and involvement with the community. It is expected, therefore, that higher church membership would be associated with lower crime rates. Similarly, population growth and ethnic makeup of a community are considered as these have been shown in the literature to impact crime rates[24].

Community Survey

This survey will be a computer assisted telephone interviewing (CATI) survey and will be completely voluntarily and anonymous. The information collected will contain opinion and perception data. At no time will information that could adversely effect an individual be collected.

There will be 2,800 total surveys conducted, 400 in each casino community. This number was chosen to ensure the reliability and robustness of the survey results. The questionnaire development, case programming, training, field testing, and data collection will be done by the Center for Applied Research, a multi-disciplinary research institute at the University of Nevada specializing in survey research.

This community survey will focus on quality of life issues. How do residents evaluate the impact casinos have on their community in general and their lives in particular? Do the residents perceive changes in crime, noise, and traffic? Is there a decrease in sense of community and a perceived shift in the locus of political control? Is there an increase in recreational opportunities, employment options, and financial well being? Are casinos good or bad for the community? These are fascinating and important questions, and are issues that are not likely to show up in an examination of crime statistics.

The survey will be designed to ask questions in three general areas. The first area will include background information on the survey participants. This will include demographic information such as years residing in the community, age, marital status, and gender. We plan to only interview those that are of legal age to gamble and who have resided in the community both before and after the introduction of casino

gambling. Information on economic variables such as income, educational attainment, and church affiliation (how often church is attended) will also be gathered.

The second area of the survey will ask questions of social capital and sense of community. The importance of understanding informal social processes and criminal behavior has long been noted in the criminological literature (e.g., social disorganization theory). Lacking from this area is any linkage between theory and policy, particularly, how do these informal social processes effect government response to issues such as crime and disorder? The recent emergence of social capital from the fields of sociology and political science and sense of community from community psychologists, provide an important conceptual and operational connection between theory and practice. Broadly, a sense of community is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together[25]. Closely related, social capital can be defined as the norms and networks of trust that exist among individuals and between individuals and government officials.

The most recent research in both of these areas indicates that communities that hold low levels of social capital and sense of community are less able to counter the deteriorating effects of crime and disorder. In fact, evidence suggests that those communities that have high levels of both are better able to deal with complex social problems. Overall, developing a better understanding of the informal social processes of a community is important in developing local governmental responses, such as policing programs or other social programs.

Finally, the survey will ask questions regarding casino behavior. Have the

interviewees ever been to the casino, how many times last week (month, year) did they go, how long did they spend gambling on average, and did they set and stick to spending limits?

Data Gathered from Personal and Phone Interviews with Local Officials

While obtaining data on Part I and Part II offenses from local police chiefs, we will also spend time personally interviewing local officials. These will include, chiefs of police, mayors, city council members, etc. This information, while primarily qualitative, will be gathered to augment information that is gathered through the community survey and crime data. Questions asked might include: Has there been an increase in the number of case loads brought before the court? What positive (negative) contributions has the casino made to the community (e.g., increased tax revenue, infrastructure improvement, increased police resources)? Has there been a significant change to the casino (e.g., expansion, deregulation) and/or the community (e.g., plant closure, new industry) that had a positive or negative impact? This type of information, which is not likely to appear in the quantitative data, is crucial to understanding the impact that casino gambling has on a community.

Similarly, as mentioned above, an important determinant of crime is deterrence efforts. For example, suppose there is an increase in the number of DUIs in a casino community. This increase may stem from two sources. One, casinos often serve free alcohol. Two, police may have increased DUI enforcement. Without speaking to police departments, this type of information is simply not available. Similarly, has there been an increase in the number of police, police workloads, and number of cases brought before the courts? These are important differences and crucial in determining the link

between gambling and crime. To the extent possible, we will gather this data through voluntary personal interviews. Due to limited time in each jurisdiction, however, much of it will be gathered over the phone.

Data on Quality of Life and Social Disruption

Stories of suicide, broken families, spouse abuse, divorce, bankruptcy, and other social disruptions are often mentioned when discussing the impact of casino gambling. These are important determinants of the social costs of casino gambling. Unfortunately, it is difficult to obtain quantitative information on these variables. While the number of divorces and suicides is available by county, the portion of those caused by gambling related problems is not available. Data on spouse abuse and problem gambling are frequently not publicly available at all. Personal and phone interviews with social workers, gambling hotline centers, and gambling anonymous centers provides an excellent opportunity to make inferences and better estimate the social costs of gambling. Any evaluation of the benefits and costs of casino gambling necessarily entails the impressions and responses of these groups.

Data on the Economic Impact of Casino Gambling

The final area of analysis will be on the economic impact that casino gambling has on a community. What contribution do casinos make to the tax coffers of the local community? Have other businesses (e.g., restaurants, movie theaters, motels) been adversely or positively affected by casinos? What impact do casinos have on employment, tourism promotion, wages, the number of people on welfare, pawn shops, and property values. These data will be gathered from police records, public records, U.S. government data sources (e.g., the Bureau of Economic Analysis has data on

transfer payments by major program by county), and personal and phone interviews with public officials, local businesses, and the chamber of commerce.

Just as the social costs of casino gambling are an important consideration when examining casino gambling, so too are the benefits. Improvement to local infrastructure, tourism development, increased resources for public schools and other good causes are some of the benefits that casino gambling may provide. This type of information is generally not available publicly, but is readily available by speaking with officials in the chamber of commerce or the superintendent of schools.

Information on welfare roles and income is publicly available, and it is difficult to say *a priori* whether casino gambling will increase or decrease welfare roles. On one hand, casinos may provide jobs and reduce welfare roles. On the other hand, problem gambling may lead to job loss and an increase in welfare roles. Similarly, casino gambling may help other businesses if they promote tourism or downtown development, or harm other businesses if potential customers spend their money solely at the casino. The opinions and perceptions of local community officials and business leaders will provide valuable insight into these important issues.

Finally, the local news media is also a valuable source of information. Speaking with editors and/or simply conducting a content analysis of newspaper articles will provide additional information on the impact and perception of casino gambling. This information may be gathered on site from local newspapers or through a search engine such as NEXIS/LEXIS.

Analysis Design

The data gathered in this study will be a mix of quantitative and qualitative data.

Due to the quantity and complexity of the data, analysis of quantitative data will be conducted first. The analysis of the qualitative data will occur concurrently with and continue after the quantitative analysis. We propose to analyze the data using a number of methods.

Quantitative Data

Much of the data collected will be quantitative. Data on Part I and Part II criminal offenses, suicide, divorce, welfare roles, income, and much of the survey data will be quantitative and eligible for statistical analysis. Several statistical approaches will be used to ensure the robustness of any findings. All methods will involve before-and-after analysis to test whether there has been a systematic shift in crime following the introduction of casino gambling. A comparison of means for the various types of Part I and Part II crimes will provide insight into which crimes are most and least affected by casinos gambling. The use of control jurisdictions will ensure that casino gambling, as opposed to exogenous shifts in crime rates, is the cause of changing crime rates.

Multivariate analysis will also be employed. In particular least squares regression analysis, where a particular crime rate is the dependent variable, will provide insight and allow for more variables (e.g., income levels, population changes, the number of casinos in an area, etc.) to be controlled for. The multivariate analysis can involve analysis of individual jurisdictions or the analysis of all jurisdictions by pooling the data. In this respect, an overall picture of crime can be presented along with the crime picture for the individual communities. This will provide valuable insight and allow for the determinants of differences in crime rates between the communities to be assessed.

An interjurisdictional comparison is expected to be especially useful. Do

jurisdictions with stricter regulations have different crime rates? Does the size of the casino and/or the number of casinos have a significant impact on crime. Do riverboat casinos that sail have different crime patterns than dockside or land based casinos? Are more tourist-oriented casino jurisdictions more subject to increases in crime than local-oriented jurisdictions? Similar questions may be asked for other social disruptions such as bankruptcy, divorce, suicide, etc. By gathering data on a number of different jurisdictions, the proposed study is not only able to answer whether casinos impact crime, but what characteristics of a casino jurisdiction are the determining factors of changes in crime. This is especially important knowledge to gain since it may provide insight into where law enforcement and community resources are best allocated.

An additional way of examining the casino/crime connection will be through the use of intervention analysis[26]. This technique is applied to time series data in order to determine the impact an event or intervention (the opening of casinos) has on a series of data (the crime rate). The attractiveness of this technique is its ability to determine the pattern of change. For example, are changes in the crime rate following the opening of casinos permanent or temporary? Do changes occur abruptly or with a lag? Do changes occur and then slowly wear off over time? The answers to these questions are determined by examining the dynamic effects of the time series and choosing the model which best fits the data. The fact that the length of time after casinos opened will vary by jurisdiction also enables us to examine both the short run and long run impact of casino gambling on crime.

Qualitative Data

This proposal also includes a rich body of qualitative data. Discussions with

community officials, social workers, business operators and leaders, and local police are a few examples of the people that will be interviewed regarding the impact of casino gambling on the community.

In addition to augmenting the quantitative data, this qualitative data can be gathered and summarized in tabular or graphical form. For example, what proportion of the community, police officers, etc. perceive that casino gambling has been beneficial to the community? What proportion feel as though it has had a negative impact? What proportion of social workers feel that the casino has had a positive (negative) impact on the community? Do different groups of people view the casino differently? For example, is the proportion of police that feel casino gambling has increased crime significantly different from the number of social workers who feel that the casino has increased crime?

Finally, the gathering of qualitative data through surveys and discussion raises some important ethical issues. We will take extreme care to ensure that no harm comes to the subjects of our research and that anonymity is preserved. The research will result in no human subjects' rights violations, and no survey instruments will be used without securing approval from the Rights of Human Subjects Committee at the University of Nevada. Furthermore, all qualitative data obtained will be opinion/perception information and will not in any way take a self report form where the information could in any way adversely effect respondents.

Project Implementation: Issues and Problems

The project can be divided into three distinct phases. These were, (1) site visits, (2) collection of crime, economic, suicide, divorce, and bankruptcy data, and (3)

community surveys. The site visits were conducted during June and July of 1998 and involved two or three of the co-principle investigators visiting the communities and conducting in-depth interviews of community leaders. Additionally, during these visits police personnel in charge of maintaining crime data were contacted and arrangements made to secure the necessary data sets. In some cases crime and economic data were obtained on-site and transported back to project offices. In other situations the data were mailed back. Suicide, divorce and bankruptcy data were obtained from secondary sources over the later part of the Summer and early Fall of 1998. The community surveys were delayed in their initiation due to a backlog in other work being preformed by the Center for Survey Research. Interviewing finally began in the last week of November, 1998 and was finished by the end of May, 1999.

As this project has drawn to a close, members of the research team can report that they have generally succeeded in carrying out the research as proposed in the grant application. With two exceptions, St. Charles, Missouri and East Peoria, Illinois, the researchers were able to obtain the necessary Part I and Part II crime data needed to ascertain whether or not casinos had an effect on crime in the site communities. For both St. Charles and East Peoria, though letters of intent to cooperate with the research project were obtained, when contacted for the necessary data, it was learned that the police departments could not provide the necessary information. As a result, one of these communities, St. Charles, was completely dropped from the study before data gathering commenced. However, the inability of East Peoria to provide the necessary crime data was not learned until after data gathering on other variables had begun. Consequently, all non-crime variables analyzed for the other casino jurisdictions are

also analyzed for East Peoria. At the same time, it should be noted that through investigator initiative it was possible to include all of St. Louis County into the analysis, since it was discovered at the time of the site visit to this region that the crime data were available through the office of the St. Louis County Police Department. So, for the analysis of crime, the casino communities studied were Sioux City, Iowa; Alton and Peoria, Illinois; St. Joseph, St. Louis City, and St. Louis County, Missouri, and Biloxi, Mississippi. For the analysis on quality of life and other variables, these cities as well as East Peoria, Illinois were analyzed.

Table 1.1

Dates of Casino Openings by Community

Community	Date of Casino Opening
Alton, Illinois	September, 1991
Biloxi, Mississippi	August, 1992
East Peoria and Peoria, Illinois	November, 1991
St. Joseph, Missouri	June, 1994
St. Louis (city and county) Missouri	May, 1994
Sioux City, Iowa	May, 1994

The site visits were conducted at the chosen communities and community leaders representing various segments of the communities, including mayors, city council members, convention and visitors bureau heads, economic development officials, chamber of commerce officials, bankers, police chiefs and social service providers, were interviewed. This portion of the project proved invaluable since it

yielded information about the dynamics of the communities and local political issues that later could be taken into account in understanding outcomes revealed through data analysis. The results of the data gathering from that phase of the project appear in **Chapter 2**.

The community surveys were conducted using a very inclusive instrument designed to assess community perceptions of changes in crime and quality of life that have accompanied the advent of casinos into the communities. The survey instrument appears in its entirety in **Appendix A**. Though the survey, which was contracted out, was not conducted in a time frame acceptable to the principal investigators, the data was obtained with a concern for the greatest possible methodological rigor. A description of the methodology used in completing the community surveys appears in **Appendix B**. Unfortunately the dilatory manner in which this phase of the project was completed has precluded the analysis of community survey data to the extent that the researchers had hoped would be possible before the project's termination date.

An important phase of the project was the selection of control communities, data from which could be used for comparison purposes. This was achieved in a timely manner through the assistance of contracted demographers. A discussion of the procedure used to obtain the control jurisdictions appears in **Appendix C**. Data were then obtained from police departments and other sources in the control jurisdictions and has and continues to be analyzed relative to the casino community data. The results of analyses of all of the police/crime data conducted so far appear in **Chapter 3**. Results of the various community survey analyses and a discussion of analyses in progress appear in **Chapter 4**. Additionally, suicide, divorce, and bankruptcy data were obtained

from various secondary sources and have been analyzed for both casino and control communities. The results of these analyses also appear in **Chapter 4.**

Obviously this research project has produced a plethora of valuable data from which we plan to continue to analyze and write scholarly research papers. However, as indicated in our two previous semi-annual reports, the project got off to a slow start due to the delay in what we hoped would be the starting date and scheduling that needed to be done to be compatible with our academic calendars. Additionally, we had problems with the timely completion of the community survey portion of the study due to poor organization and planning by the Center for Social Research at the University of Nevada, Reno, who were paid to do the phone interviewing. These problems not withstanding, all of the data have been in an analyzable form since late June 1999, and we have been making tremendous progress in writing up our findings. In order to document our accomplishments, the following is a list of presentations and publication acceptances that have been done, as well as proposed papers that are planned for presentation through November, 2000.

Presentations and Publications

A. "Perceptions of the Impacts of Casino Gambling on New Casino Jurisdictions." Presented at the 1998 Annual meeting of the Southern Criminal Justice Association, Biloxi, MS. Also appears in the Journal of Gambling Studies under the title, "Attitudes of Community Leaders in New Casino Jurisdictions Regarding Casino Gambling's Effect on Crime and Quality of Life," Volume 15, Number 2, Summer 1999, pps. 123-147.

B. "How Do Casinos Affect Communities?" Business Perspectives (a publication of the Bureau of Business and Economic Research, The University of Memphis) Vol. 11, No. 4 (Summer 1999), 23-27.

C. "The Effect of Casino Gambling on Crime in New Casino Jurisdictions," presented at the Annual Meeting of the Academy of Criminal Justice Sciences

(March, 1999), Orlando, Florida. This paper is forthcoming at the Journal of Crime and Justice, Spring, 2000.

D. "Casino Gambling and Bankruptcy in New U.S. Casino Jurisdictions," presented at the University of Salford (England), Department of Economics Seminar Series, March 1999. Journal of Socio-Economics, Vol. 29, Number 5, (2000), 247-261.

E. "Suicide and Divorce as Social Costs of Casino Gambling," presented at the 1999 Annual Meeting of the Pacific Sociological Association, (April, 1999), Portland, Oregon. This paper is currently under journal review.

F. "Casino Gambling Behavior and Perceptions of Problem Gambling," presented at the 13th National Conference on Problem Gambling, (June, 1999), Detroit, Michigan. This paper is forthcoming in The Journal of Gambling Studies.

G. "Including Population at Risk in Casino Crime Rate Calculations: What Difference Does It Make?" Presented at the 1999 Annual meeting of the Southern Criminal Justice Association, Chattanooga, TN. American Journal of Criminal Justice, Vol. 24, No. 2, (2000), 203-215.

H. "Legalized Casino Gambling and Its Effects on Social Capital," Presented at the 1999 Annual Meeting of the Western and Pacific Association of Criminal Justice Educators, Fall 1999, Reno, NV. This paper is currently under journal review.

I. "Community Perception of Casino Gambling's Effect on Crime in New Gambling Jurisdictions." Presented at the 1999 Annual Meeting of the American Society of Criminology, Fall 1999, Toronto, Canada. This paper is currently under journal review.

J. "Does the Presence of Casinos Increase Crime? - The Most Definitive Test Yet." To be presented at the 2000 Annual Meeting of the Academy of Criminal Justice Sciences, New Orleans, LA. This paper is currently under journal review.

K. "Community Assessment of Effects of Casinos on Quality of Life?" To be presented at the 2000 Annual Meeting of the Western Social Science Association, April, San Diego, CA. This paper is currently under journal review.

L. "Casino Gambling as a Catalyst of Economic Development: Perceptions of Residents in New Casino Jurisdictions." To be presented at the 11th International Conference on Gambling and Risk-Taking, June 12 - 16th, 2000, Las Vegas, NV.

This paper is currently under journal review.

M. "Community Satisfaction with Casino Gambling: An Assessment After the Fact." To be presented at the 11th International Conference on Gambling and Risk-Taking, June 12 - 16th, 2000, Las Vegas, NV. This paper is currently under journal review.

N. "Casino Gambling, Crime and Quality of Life - A Roundtable Discussion." To be presented at the 2000 Annual Meeting of the American Criminological Association, November, 2000, San Francisco, CA.

O. "The Economic Impact of Casino Gambling: Perception of Residents in New Casino Jurisdictions." To be presented at the Annual Meeting of the Western Social Science Association, April, 2001, Reno, NV.

P. "Casinos as Disruptive Influences in Communities." To be presented at the Annual Meeting of the Western Social Science Association, April, 2001, Reno, NV.

At this point, these are all the papers that are scheduled for presentation.

Summaries of all papers currently written appear in the following chapters. A number of other papers will be generated from the data. Some will be presented in future meetings and others will be submitted directly to scholarly journals for publication.

Chapter 2

Perceptions and Attitudes of Community Leaders

This chapter discusses findings related to the perception and attitudes of community leaders.   To date, these have been published in three separate, but overlapping publications.[27]   This important phase of the project involved interviewing community leaders representing various perspectives within the site communities where gambling had been introduced. The purpose of this initial entry into the community was to familiarize the researchers with the city's history, political climate, power structure and problems and concerns seen as being in the forefront of community-wide policy issues.   Since none of the researchers were familiar with the communities selected for the study, this initial information gathering and familiarization was thought to be extremely important.   As the researchers have proceeded to analyze the multitudinous data collected it has become apparent that this was indeed an important facet of the project.

Methodology

Interviews were conducted with 128 key individuals in the seven communities. Most of the interviews were conducted in person by one or more of the research team that consisted of two criminologists and one economist.   Since all cities selected for the study initiated casino gambling in the 1990s and had casino gambling for a minimum of four years it was important to query the community leaders on the impacts that they perceived the casinos to have had.   At the same time it was the intention of the researchers to ascertain during these interviews the extent to which the idea of introducing casinos into the communities had been a divisive one .

The individuals selected for interviews included mayors, members of the city council, leading members of the business community, convention and visitor's bureau representatives, tourism officials, bankers, law enforcement officials and social service providers. The respondents provided insights into the positive and negative effects that casinos had on their communities. A series of core questions was asked of all 128 respondents followed by additional questions designed to elicit specific information based on the individual's position. The core questions were the following:

1. Overall, have casinos had a positive or negative impact on the quality of life in your community?
2. Has the impact of the casinos been limited to the immediate vicinity or impacted the community more generally?
3. What specifically are some of the positive impacts you have observed?
4. What specifically are some of the negative impacts you have observed?
5. What effect have casinos had on the volume of crime/types of crime?
6. Economic impact (specifics)?
7. Are you in favor of having casinos in your community?
    Strongly Favor   Favor   Neutral   Oppose   Strongly Oppose
8. What percent of the community do you believe are in favor of casinos in the community?
9. Are there any other comments or observations you would like to make about casinos?

A content analysis was conducted comparing responses both within and between communities by leadership position.

Results

Table 2.1 presents the results for all 128 individuals interviewed for four of the nine core questions: Do the casinos have a positive or negative impact on the quality of life in their communities? How do the casinos affect the economy in their communities? How do the casinos affect crime in their communities? Are they personally in favor of having casinos in their communities?

Table 2.1
Key Residents' Responses to Core Questions Concerning
Effect of Casinos on the Community*

Core Questions	Response			
	Negative	Neutral	Positive	No Answer
Effect on Quality of Life	18%	16%	65%	1%
Effect on Economy	6%	15%	77%	3%
Effect on Crime**	12%	69%	8%	12%
Favor Casino in Community	15%	23%	59%	3%

N=128

*Responses may not add up to 100% due to rounding.
**Negative effect on crime is a perceived increase in crime.

The table indicates that for three of the four questions, the majority of those interviewed viewed casinos in a positive light. Almost two-thirds (65%) believed that casinos had a positive effect on the quality of life in their community, more than three-fourths (77%) believed the casino benefitted the local economy, and nearly six out of ten (59%) personally were in favor of the casino being in their community. The only question for which the majority of those interviewed did not believe casinos had a positive effect was on crime. However, the majority here (69%) believe that the casinos have no effect or only a minimal effect on crime in their community. It should also be noted that a much higher percentage for this question (12%) than for the other core questions indicated that they did not know or could not answer the question. This appears to indicate that a substantial amount of confusion exists on the relationship of

casinos to crime.

It should also be noted from Table 2.1 that although the majority of these key individuals view casinos in a neutral or positive light, a significant number believe casinos have a negative effect on the community. While relatively few (6%) believe casinos hurt the economy, between 12 and 18 percent believe casinos negatively affect quality of life in their community (18%), increase crime (12%), and are personally opposed to the casinos operating in their community (15%).

Although the data presented in Table 2.1 indicate that the majority of key individuals interviewed for this study have a relatively neutral to positive view of casinos, combining the data from the seven communities may result in masking differences in responses in the individual communities. Therefore, Tables 2.2 through 2.5 will present the data for the four core questions broken down by community.

Table 2.2 presents the assessment by the key individuals of the impact of casinos on the quality of life in their communities. Table 2.2 indicates that in five of the seven communities, the majority of key individuals interviewed believed that the casinos have a positive impact on the quality of life of the residents. In Alton, Biloxi, East Peoria, and St. Joseph, between 70 and 94 percent of the respondents believe that casinos improved the quality of life in the community. Only in Peoria (which does not presently have a casino) and Sioux City do fewer than half of those interviewed believe that casinos generally benefit the community. Approximately one-third of those interviewed in these two communities believe that the casinos are a negative influence, with about one-fourth believing the positives and negatives balance out. It should also be noted that about 20% of those interviewed in St. Joseph and in St. Louis believed the

casinos negatively affected the community.

Table 2.2
Assessment by Key Residents of Casino Gambling's
Effect on Quality of Life, by City (N=128)

| | Response | | |
	Negative	Neutral	Positive
Alton (n=17)	6%	6%	88%
Biloxi (n=17)	0%	6%	94%
East Peoria (n=11)	0%	9%	91%
Peoria (n=18)	29%	29%	42%
Sioux City (n=23)	35%	22%	43%
St. Joseph (n=20)	20%	10%	70%
St. Louis (n=22)	23%	23%	54%

Greater consensus was obtained when those interviewed were asked how the casino had affected the local economy (see Table 2.3). In every one of the seven communities a majority stated that the casino improved the local economy. There was unanimity in Biloxi and East Peoria (100% agreement) that the economy had improved as a result of the casino's presence. Similarly, 90% of those in St. Joseph believed that the casino had improved the economy of the community. The lowest levels of agreement were in Peoria, where 22% said the casino had a minimal impact, and Sioux City, where 39% said the casino had a minimal or negative impact on the community's

economy.

Table 2.3
Assessment by Key Residents of Casino Gambling's
Economic Impact, by City (N=128)

	Response			
	Negative	Neutral	Positive	No Answer
Alton (n=17)	12%	12%	76%	0%
Biloxi (n=17)	0%	0%	100%	0%
East Peoria (n=11)	0%	0%	100%	0%
Peoria (n=18)	0%	22%	67%	11%
Sioux City (n=23)	17%	22%	61%	0%
St. Joseph (n=20)	10%	0%	90%	0%
St. Louis (n=22)	0%	32%	60%	9%

Responses to the question of how casinos affected the volume of crime in the community were more varied (see Table 2.4). The majority of people in all but one community (Peoria) believed that the casino had no effect or only a very limited effect on crime; the percentage indicating a minimal or neutral effect ranged from 55% in St. Louis to 88% in Alton and Biloxi.

Table 2.4
Assessment by Key Residents of Casino Gambling's
Effect on Crime, by City (N=128)

	Response			
	Increased	Neutral	Reduced	No Answer
Alton (n=17)	0%	88%	12%	0%
Biloxi (n=17)	12%	88%	0%	0%
East Peoria (n=11)	9%	73%	9%	9%
Peoria (n=18)	17%	39%	11%	33%
Sioux City (n=23)	13%	70%	4%	13%
St. Joseph (n=20)	15%	75%	5%	5%
St. Louis (n=22)	14%	55%	14%	18%

Of the respondents who believed that casinos did have an impact on crime, individuals were slightly more likely to say that the casinos increased crime in Biloxi, Peoria, Sioux City, and St. Joseph. Only in Alton did more say it would decrease crime than increase crime. Once again, it should be noted that a fairly high percentage did not know how casinos affected crime. One-third (33%) of respondents in Peoria and nearly one-fifth (18%) in St. Louis would not offer an opinion on the casino and crime issue. In many communities, individuals were able to point to news reports of an embezzlement or a bank robbery that was apparently related to problem gambling. However, they had no

knowledge and were not willing to offer an opinion as to whether casinos had caused

crime in general to increase in their communities.

Table 2.5
Attitudes of Key Residents towards
Casinos in their Community, by City (N=128)

	Response					
	Strongly Oppose	Oppose	Neutral	Favor	Strongly Favor	No Answer
Alton (n=17)	6%	12%	0%	23%	59%	0%
Biloxi (n=17)	0%	0%	18%	29%	53%	0%
East Peoria (n=11)	0%	0%	18%	36%	45%	0%
Peoria (n=18)	0%	17%	33%	22%	11%	17%
Sioux City (n=23)	13%	13%	39%	26%	9%	0%
St. Joseph (n=20)	5%	5%	25%	45%	20%	0%
St. Louis (n=22)	9%	14%	23%	27%	23%	4%

When these community leaders were asked whether they personally favored

casinos in their communities, the response categories presented formed a 5-point Likert

scale ranging from strongly oppose to strongly in favor (see Table 2.5). From Table 2.1,

we know that nearly 6 of 10 (59%) were generally in favor of casinos in their

communities. However, we see from Table 2.5 that responses varied greatly by community. In only two communities (Alton and Biloxi) did a majority strongly favor casinos operating locally. When the "strongly favor" and "favor" categories are combined, in only four of the seven communities do clear majorities of these key individuals favor casinos. Except for Alton, a significant number in each community are neutral on the issue, with percentages ranging from 18% in Biloxi and East Peoria to 39% in Sioux City.

On the other hand, relatively few in each community are strongly opposed to the casinos. None of those interviewed in Biloxi, East Peoria, or Peoria was strongly opposed, with only one or two key respondents in Alton, St. Joseph, and St. Louis indicating strong opposition. When the "oppose" and "strongly oppose" categories are combined, in five of the seven communities the total is below 20%. The strongest opposition is present in St. Louis (23%) and Sioux City (26%).

From Tables 2.2 through 2.5, it is clear that there is generally no consensus regarding the critical issues surrounding casino gambling among the leaders in the communities studied. A majority of those interviewed in every community were supportive or neutral towards casinos operating in their community; however, in all but two of the communities, several of the key individuals were opposed to the casinos. By focusing on key individuals and asking a series of follow-up questions which probed how casinos affected their particular areas of expertise, we are able to gain greater insight into how casinos affect communities and are able to determine if there is agreement within and across communities by those in key positions. Therefore, we asked those in law enforcement to elaborate about crime, social service workers about

social and family problems associated with casinos, bankers about economic development and credit problems within the community, and those in elected office about why casinos were legalized and how they have affected city services. The following section will analyze responses from mayors and city council members; law enforcement officials; Chamber of Commerce and others involved in economic development; social service providers; other community influential (editors, city managers); and casino officials.

Mayors and City Councils

Mayors from six of the seven cities and a total of 34 members of the city councils were interviewed. The number of council members from any one city ranged from 3 in East Peoria to 8 in St. Louis.

The mayors, with one exception, believe that the presence of the casino benefitted the community. In the one exception, the mayor listed both benefits and detriments and stated that the casino was, in effect, a mixed blessing. All of the mayors listed benefits such as job creation, tourism, and increased tax revenues as major benefits accruing from the casino's presence. Several of the mayors indicated that the casino was a focal point for redevelopment and attracting new businesses (hotels and restaurants) to the waterfront area. Several of the mayors also stated that the increased tax revenue enabled the city to improve its infrastructure and provide better services to their residents. One of the mayors listed higher paying casino jobs with good fringe benefits as a benefit to the community; one mayor listed a labor shortage and increased wage scale as a problem for existing businesses.

On the negative side, there was little commonality other than the concerns that

some residents would become problem gamblers and this would lead to family and economic problems. Two of the five mayors noted that the casinos and the tourists visiting the casinos would place added demands on roads and municipal services. Two of the five mayors also stated that there were no unusual problems associated with casinos that would not be found with any new, sizable business moving into the area. Three of the mayors were strongly in favor of the casinos operating in their communities, one was in favor, and two were neutral.

When asked why casinos were brought to their communities, the answers were, without exception, for economic development. Several of the mayors stated that their communities had been struggling economically. Once casino gambling was legalized by the state, the choice was to ignore it and have money flow out of the community or endorse it and have the community benefit. When asked whether the economic promise had been fulfilled, all answered in the affirmative. When asked how existing businesses had been affected, one said negatively through increased labor costs and by unfair competition by the hotel and restaurant operated by the casino and subsidized by the gambling revenue. All the mayors noted that city services and infrastructure had improved as a result of tax revenue generated from casino operations. Only 1 of the 5 mayors interviewed believed that casinos were a divisive issue in the community, although several stated that initially the casinos had been controversial.

Although the majority of members of the city councils tended to be in agreement with the mayor of their respective communities, there were divided opinions among the council members in the majority of the communities. Whereas four of the five mayors interviewed believed that casinos had improved the quality of life in the community, the

council members interviewed were uniformly in agreement concerning the favorable impact on quality of life in only three of the seven communities (Alton, Biloxi, and East Peoria). In two communities (Peoria and Sioux City), there was little agreement among council members regarding whether the presence of the casino in the community was a favorable development. Only 3 of the 34 members of the city councils interviewed stated that the presence of the casino was a divisive issue in the community. Each of the three came from a different city. Overall, the personal views of the city council members toward the casinos were less favorable than those of the mayors. Where 50% of the mayors were strongly in favor of casinos, only 29% of the 34 council people were strongly in favor, 35% were in favor, 27% were neutral, and 9% were opposed to casinos in their communities.

Council members in the seven communities who thought the effect on quality of life was neutral (6) or negative (4) tended to agree with the positive factors associated with casinos (increased tourism, tax revenue, jobs for the community), but they also found more negative consequences. Several mentioned that they thought that the state profiting from gambling was short-sighted and poor public policy. They believed it undermined traditional values and sent the wrong message to young people. Several believed that there was a substitution effect whereby money spent in casinos was money not being spent to support other local businesses. Several also mentioned that they thought the increased tax revenue was needed to offset the increased public safety demands and state assistance to those who would become problem gamblers.

Law Enforcement

A total of 16 interviews were conducted with representatives of law enforcement

agencies. The chief of police or other high ranking officer was interviewed in each of the seven communities. In addition, eight other law enforcement officials were interviewed (3 from the District Attorney's office, 3 Gaming Enforcement officials, 2 high ranking officers from the sheriff's department, and one commander of the Highway Patrol). On the core questions, 12 of 16 (75%) believed that casinos had improved the quality of life of residents, 2 (13%) were neutral, and 2 (13%) believe that casinos negatively affect the quality of life in their community. When asked what effect casinos had on the volume of crime, 14 (88%) said it had no effect or a minimal effect, 2 (13%) said it increased crime.

When the chiefs of police from the communities were asked if their budget and manpower were affected by the casinos, three of seven answered that they now had more police on the force and a larger budget. Several commented that they had been understaffed and underbudgeted for years, and with the increased tax revenues from the casinos, they were now able to do their jobs better because of the additional staffing and better equipment (e.g., new and better maintained squad cars). In three communities, new public safety complexes were completed or were in the works.

The police in each community were asked specifically about whether traffic problems, vice/prostitution, and drug use had increased. In 3 instances, traffic problems had worsened; in all other cases, the police officials said the problems had not worsened. When police were asked whether they had noticed more nonresidents as victims and/or as offenders, in only one instance did the police official indicate that there had been a "slight increase" in these occurrences. In only one of the communities did the police answer that casinos had required a reallocation of resources. Without

exception, the police officials said they had a good working relationship with the casino security.

Although six of the seven police chiefs said that the effect on the volume of crime was slight or negligible, 3 chiefs mentioned some change in the types of crimes. With the large parking lots and hotels constructed around casinos, more thefts from cars and hotel rooms were seen. Some other crimes that previously were quite rare became more of a problem, such as counterfeit money, credit card fraud, bad checks, and embezzlement. Bank robberies occurred in two of the communities, which the police thought were gambling related.

Several chiefs stressed that the nature of the riverboat casino, with controlled access and good security on the premises, led to a minimum of problems for the local police. Another law enforcement official stated that strict regulations on the riverboats precluded many problems that police would normally have to deal with. One law enforcement agency head stated that casinos actually caused few problems, but that police departments had to be prepared for the arrival of casinos. He believed that, immediately after the casino opened, his department went through a period of "testing" by criminal outsiders who sought to determine if they could run casino-related scams, pass counterfeit money, etc. He believed his department was prepared and, although current problems related to the casinos are minimal, he believes departments must heighten their awareness and training to deal with different types of problems than previously seen.

Chamber of Commerce/Economic Development/ and Visitor Bureau Heads

The 21 individuals interviewed from this area tended to be among the strongest

supporters of casino gaming within the community. Seventeen of 21 (81%) believed casinos improved the quality of life by providing jobs, increased tourism and convention business, and by providing local residents with an additional entertainment option. Fully 20 of 21 (95%) believed casinos helped the local economy. In only one community did anyone from this group voice the opinion that casino gambling negatively affected the quality of life of the residents and that it hurt rather than helped the local economy. It should be noted that in this community, only 2 of 5 held these views. The majority of individuals in this grouping firmly believed that the casinos spurred business growth, increased tourism, and contributed greatly to the tax base and financial well-being of their communities.

In many of the communities, the casinos have become major employers. Those involved with economic development stress that the jobs generally come with full medical benefits and often have resulted in an increased wage scale for service workers in the community. They also stress that, unlike some recent bidding wars that state and local governments have engaged in to lure industries by giving substantial inducements in the form of tax breaks, casinos are not given similar inducements. In fact, in addition to the regular real estate taxes paid to the municipalities, many communities benefit from a "head tax" which has resulted in large sums of money flowing to the local governments. One individual stated that the taxes collected from the boats are highly beneficial not only because of the large amount but also because they do not come with any "federal government strings attached."

The few in economic development that were neutral or critical of casinos believed that they led to a variety of social ills, and that those who could least afford to were the

ones that gambled. They also mentioned that the majority of gamblers in their community were "locals" and that instead of spurring the economy, the result was one of substitution effect. The only other criticism in this area was by one individual who noted that there is some seasonality to the work as determined by the tourist season.

Social Service Providers

A total of 25 individuals were interviewed in this category. Perhaps not surprisingly, this category had the highest percent who believed the casinos negatively affect quality of life in a community (10 of 25, 40%). Several said that their caseloads had increased, not only from residents but also from newcomers looking for work or transients drawn to the casino environment. Interestingly, many in the treatment or counseling field did not blame casinos for the problems, but tended to view casino gambling as one more stressor that tended to exacerbate the problems of individuals with poor credit, drinking problems, or pre-existing family problems. Many stressed personal responsibility, not casino responsibility. However, the representative of a gambling treatment facility did believe that casino gambling was, socially, the most dangerous form of gambling because of the availability, speed of play, and more immediate gratification (than lotteries or horse racing).

In some of the communities, the agency representatives took a more benign view of casinos. Of all social service providers, 9 of 25 (36%) believed the casinos improved the quality of life in the community. Several stated that casinos were good corporate citizens. Grants that casinos provided directly, or tax revenue collected from the riverboats and earmarked to bolster social services, convinced some social service providers that the casinos were a neutral if not a positive force in the community. Others

believed that while casinos resulted in some individuals having economic problems, the

jobs provided by the casinos enabled many others to achieve a better life.

Casino Officials

A total of six individuals in managerial positions in the local casinos were

interviewed. Not surprisingly, they were as a group the biggest supporters of casino

gambling, emphasizing not only the economic benefits but also the fact that they were

"good corporate citizens." The managers are well aware of the controversial nature of

their business and make an effort to counter the image by being involved in civic

projects, and by encouraging casino employees to be similarly involved. In some of the

casinos, employees are given time off from work to aid in community causes. These

efforts appear to be successful, at least to the degree that many of the casinos have

won local awards for their charitable efforts and in every community several of the

leaders praise the casino management for their community involvement.

Other Community Influentials

The last group is the result of combining a number of individuals whom we call

"community influentials." This group is composed of editors of the local newspaper (2)

and a diverse group of appointed officials (6) such as city managers and city

treasurers.

Six of 8 of these individuals (75%) believed that the casinos improved the quality

of life in the community, with one being neutral and one believing the casinos lowered

the quality of community life. Similarly, 6 of 8 (75%) believed there was no effect by the

casinos on crime. The two (25%) who believe casinos have an effect believe crime has

increased. Seven of 8 (88%) believed the economy had profited as a result of the casino being in the community, with one (12%) believing it was a negative factor in the economy. Consistent with these responses, 6 (75%) were personally in favor of the casinos being in the community, with one opposed and one neutral.

One of these community influentials believed that those in government tended to downplay the social problems that result from casinos because of the revenue that they generate. The major concern expressed by several in the group was the addictive potential of casino gambling and the worry that the community was not doing enough to prevent or treat these occurrences.

Summary and Conclusions

Interviews were conducted with 128 key individuals in 7 communities that are new casino jurisdictions. The individuals interviewed are community leaders (mayors, members of the city council, leading members of the business community) or work in areas (banking, law enforcement, social services) which would provide insight into the good and bad effects that casinos have on communities. It should be emphasized that although an attempt was made to interview a broad spectrum of key individuals in each community, the method lacks the rigor of a random sample or a systematic sample where the total population (leaders or individuals working in key positions within the community) is known. A series of core questions were asked of all respondents, along with a set of questions to probe the individual's particular area of expertise.

A clear majority (59%) of the 128 individuals interviewed were favorably disposed towards the presence of a casino in their community. Most believed that the casino

enhanced the quality of life (65%), had a positive effect on the economy (77%), and had little if any effect on crime (69%). Yet, between 10% to 20% of respondents saw casinos as a negative influence on each of the core items.

To determine whether there was much variation between communities on responses to these core questions, the answers were analyzed by community. In 5 of the 7 communities, the majority of these key individuals believed that the quality of life was enhanced by the casinos, and in 7 out of 7 communities, that the economy was affected positively by the casino. In 6 of 7 communities, the key individuals stated that they believed the casinos have little or no effect on crime. In the one city where this response was not a majority, 39% answered casinos made little difference in crime, with 33% providing no answer, indicating a good deal of uncertainty in this regard. The responses of these individuals by community as to whether they favored casinos ranged from 94% favorable in Biloxi to 42% in Peoria.

Clearly, communities varied widely as to rate of approval. It appears that one of the main determinants of attitude within a community is degree of economic impact the casino has on the community. In those communities that depend heavily upon a casino for their economic well-being, the casinos are enthusiastically embraced; in those communities where a casino is only a minor part of the economy, the community leaders tend to be more moderate in their assessments and more apt to find problems associated with the casino's presence.

When responses were analyzed by position across communities, there was, once again, a high degree of agreement within position but considerable variation by occupational groupings. For example, those individuals in economic development

positions tended to be overwhelmingly positive toward casinos, with 95% indicating casinos have a positive economic impact on the community and 86% saying it improved the quality of life of residents. However, only 60% of social service providers believed that casinos were a positive factor enhancing quality of life within their city or town. As with community, there is considerable variation in response by work or position within the community.

The final variable judged to be a significant determinant of attitude toward casinos is whether the individual has had a personal experience (perhaps through association with friends or family members) with a problem gambler whose life has been devastated by the problem. Although a significant number of those interviewed mentioned problem gambling as a negative associated with having a casino in one's community, most were swayed by the tangible benefits casinos provide to the community (jobs, taxes, tourism). However, the few respondents who were personally acquainted with a problem gambler tended to see this as the major factor in determining whether casinos were desirable in their community.

Although the findings of this study indicate that the majority of key individuals interviewed believe casinos benefit the community, several qualifications need to be added to that statement. Clearly, there is a lack of agreement within and across communities. Those who deal most closely with the personal problems associated with gambling (social service providers) are the least in favor of casinos in the community. Also, it should be noted that the communities selected for study tend to be communities that have been economically depressed and, quite naturally, place a high value on the economic benefits the casino provides to the community. It should also be noted that all

the communities have had casino gambling for less than 10 years. As time passes, assessments, both pro and con, may change. Lastly, the individuals selected for interview are believed to be key individuals in the community. However, it was impossible to do a random selection of community leaders and not all leaders in a community were interviewed.

Nevertheless, even given these limitations, the interviews should be seen as the first large scale effort to evaluate the benefits and detriments of casinos as seen through the eyes of a community's leadership. By interviewing a broad range of individuals in key positions within these seven communities, both the pros and the cons of casino presence are assessed. It should be noted that variation between communities clearly exists.

Chapter 3
Findings Relating Official Crime Statistics to the Advent of Casinos

Part of the national debate surrounding casino gambling is whether crime increases as a result of the presence of casinos in a community. Casino supporters argue that casinos bring economic benefits to an area and point to Las Vegas, the world mecca of casino gambling, as the prime example. Since 1980, Las Vegas has grown faster than any other city in America (Bureau of the Census, 1998: 42), yet for many of those years Las Vegas ranked as one of America's safest cities (Margolis, 1996).[28] The critics of casino gambling point to Atlantic City, its failed promise of economic rejuvenation, and its crime rate which increased dramatically after casinos began operating there in 1978 (Harshbarger, 1996).[29]

Part of the difficulty in trying to understand the debate over the benefits and the problems associated with gambling is that each side has enough ammunition to make credible arguments. An explanation for this is that gambling is a term that covers a variety of activities and operates in a wide variety of venues. Even a good analysis comparing casino gambling's effect on crime in two locales may be flawed. Some casinos are large, others are small; some are land based, others are riverboats; some appeal primarily to locals, others appeal almost exclusively to tourists; some are located in urban areas, others are distant from any population center; some have been in operation for many years allowing the development of a casino culture that allows the community to efficiently deal with the problems casinos may present, others are new to an area and treated as novelties without any understanding of the potential problems that casinos may bring to a community. Finally, the communities themselves may be

quite different in population size, demographics, and economy. Simple comparisons often overlook the complexity of the problem.

Another difficulty surrounding the research studying the effect of casinos on crime is the operationalization of the dependent variable, that is, what crimes are being studied and how is the crime rate being measured? The UCR index offenses are the most frequently analyzed data since the figures for most cities are readily available, having been collected and published annually by the FBI since 1931. The index offenses are seen as appropriate to analyze because these eight offenses are taken as a proxy for the level of "serious crime" found in a jurisdiction. However, many of the crimes included in the index have little logical connection to casinos. Casino related crime is most likely of an instrumental nature, being a means used by problem gamblers to obtain money to enable them to "chase" or recoup their losses (Lesieur, 1977).[30] Although it is possible to come up with scenarios where violent crime may be gambling related, it is evident that the UCR property crime and some offenses not included in the UCR (forgery, credit card fraud) are more reasonably connected to casinos than are murder and rape.

After a determination is made of what crimes are to be studied, a valid measure of the crime must be utilized. If research analyzes changes in the numbers of crimes committed in a community without taking into account population, the analysis is clearly flawed and the conclusions that can be drawn from the study are clearly limited (Albanese, 1985).[31] If crime rate is the dependent variable, a more controversial question is whether the denominator utilized in calculating the crime rate is the resident population of the community or the population at risk, which takes into account both the

residents and the tourists who are in a community during a given period of time.

To determine the effect of casinos on crime in new casino jurisdictions, crime rates were calculated for each offense in each community based both on resident population and population at risk, which adds tourists to the resident population. Crime data for both serious crimes and for relatively minor offenses were collected since logic dictates that such crimes as credit card fraud and DUI are more likely related to gambling than are murder and rape.

The results of the analyses of the effects of casino gambling on crime in the designated research site cities appear in Tables 3.1-3.4. The tables present the average crime rate per 1,000 population, per time period, before and after the introduction of gambling into these communities standardized on a per capita basis, as well as on the basis of the population at risk when the average daily number of tourists are taken into account. For all jurisdictions with the exception of St. Louis County, the data were monthly. In the case of St. Louis County, the crime data were only available quarterly. The exact crime offenses presented for each city differ due to the categorizations of data made available by the respective police departments.

Looking first at Table 3.1, the results for Sioux City indicate that a substantial number of offense categories increased significantly after the introduction of casino gambling. Of the twenty-two offense categories for which data were available, twelve registered statistically significant increases. Those categories were homicide, robbery, aggravated assault, burglary, motor vehicle theft, forgery, credit card fraud, prostitution,

Table 3.1

Percent Differences in Offence Rates Before and After Casino Gambling Per 1,000 Population and Population at Risk in Sioux City, Iowa and Biloxi, Mississippi

Offense Category	Sioux City, Iowa						Biloxi, Mississippi					
	Per Capita			Per Population at Risk			Per Capita			Per Population at Risk		
	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference
Homicide	.0049	.0101	106.12***	.0035	.0071	102.86***	.0089	.0083	-7.19	.0035	.0028	-19.83
Sexual Assault	.0488	.0517	5.94	.0344	.0362	5.23	.0524	.0516	-1.57	.0205	.0174	-15.31*
Robbery	.0756	.0938	24.07***	.0532	.0662	24.44**	.2231	.3510	57.37***	.0859	.1187	38.21***
Agg. Assault	.3604	.7675	112.95***	.2537	.5365	111.47***	.5903	.6284	6.44*	.2252	.2127	-5.57
Burglary	1.347	1.507	11.89*	.9453	1.0484	10.91*	2.0965	1.6406	-21.74***	.8172	.5531	-32.32***
Larceny	3.5245	3.5676	1.22	2.4755	2.4904	.60	5.0422	5.8417	15.86***	1.9456	1.9668	1.09
Vehicle Theft	.2109	.3130	48.41***	.1476	.2174	47.29***	.6712	.5284	-21.27***	.2602	.1784	-31.43***
Arson	.0353	.0339	-3.97	.0248	.0232	-6.45	.0318	.0237	-25.29*	.0124	.0080	-35.56***
Simple Assault	.9377	.9041	-3.58	.6585	.6335	-3.79	.9738	1.6578	70.23***	.3769	.5548	47.22***
Forgery	.1666	.2064	23.89***	.1173	.1442	22.93***	.1111	.2115	90.34***	.0414	.0713	72.09***
Fraud	.1771	.1253	-29.25***	.1246	.0879	-29.45***	.1467	.2072	41.32***	.0564	.0693	22.96**
Check Fraud	.1183	.0775	-34.49***	.0833	.0545	-34.57***	.0069	.0036	-48.35***	.0028	.0011	-59.47***
C. Card Fraud	.0035	.0211	502.86***	.0025	.0147	488.00***	.0136	.0510	274.02***	.0052	.0173	233.97***
Embezzlement	.0083	.0045	-45.78***	.0058	.0032	-44.83***	.2249	.3273	45.48***	.0854	.1102	28.89***
Prostitution	.0266	.0370	39.10**	.0186	.0261	40.32*	.0134	.0634	372.36***	.0052	.0211	310.96***
Sex Offenses	.1318	.1701	29.06***	.0925	.1190	28.65***	.0530	.0635	19.75*	.0202	.0214	6.38
Drug Violations	.1744	.3810	118.46***	.1228	.2647	115.55***	.4638	.8874	91.35***	.1779	.2969	66.93***
Family Offense	.0443	.0881	98.871***	.0312	.0613	96.47***	.1041	.1220	17.19*	.0402	.0409	1.64
DUI	.6647	.6779	1.99	.4683	.4746	1.35	.3974	1.5172	281.81***	.1544	.5010	224.45***
Liq. Violations	.0637	.0804	26.22***	.0448	.0560	25.00***	.0424	.0477	12.38***	.0163	.0161	-1.14
Public Drunk	.9090	.7306	-19.63***	.6392	.5093	-20.32***	1.0049	1.2351	22.91**	.3799	.4130	8.72
Dis. Conduct	.6471	.6380	-1.41	.4551	.4441	-2.42	.4931	.9133	85.20***	.1900	.3063	61.22***

Significance Levels * = p < .05   ** = p < .01   *** = p < .001   Degrees of Freedom for Sioux City df = 67 and for Biloxi df = 74

sex offenses, drug violations, family offenses and liquor law violations. At the same time four offenses decreased significantly. Those were fraud, check fraud, embezzlement, and public drunkenness. All of the increases or decreases were statistically significant regardless of whether or not tourists were added and true population at risk was considered.

The results for Biloxi also appear in Table 3.1. Biloxi is unique because it has the most casinos and also the casinos provide free drinks to patrons which could directly or indirectly affect the crime situation. Of all of the cities examined, Biloxi has the most crimes that have significantly increased since the advent of casinos, whose increases might be directly attributable to the advent of casino gambling. Using the per capita measure, crimes increase for fifteen out of twenty-two offense categories comparing rates before and after the introduction of casinos. When the population at risk measure is used this number decreases to ten. Interestingly, the offenses that increased significantly were robbery, simple assault, forgery, fraud, credit card fraud, embezzlement, prostitution, drug violations, DUI, and disorderly conduct. Many of these offenses are ones whose increases are suggested by both logic and criminological theory.

When comparisons are made between percent differences before and after the advent of casinos using the per capita versus population at risk figures, there are two offenses where the relationship changes from positive significant differences to negative non-significant ones, aggravated assault and liquor violations. There are four offenses that showed a significant increase after casinos using the per capita measure that remained positive but lost there significance. These were larceny, sex offenses, family

offenses, and public drunkenness. One offense, sexual assault, showed a decrease after casinos opened when both per capita and population at risk measures were used. However, the decrease became statistically significant when the population at risk was used as the population base.

An examination of the results of the comparisons for offense categories before and after the inception of casino gambling for St. Louis City (see Table 3.2) again reveals mixed results. Here, of twenty-two offense categories, eight increased at a statistically significant magnitude for both per capita and population at risk calculations. These offenses were larceny, arson, simple assault, sex offenses, drug violations, family offenses, and liquor law violations. By contrast, ten offense categories decreased significantly. These were sexual assault, aggravated assault, burglary, motor vehicle theft, forgery, fraud, check fraud, credit card fraud, prostitution, and public drunkenness. Only one offense, disorderly conduct, significantly decreased when the at risk measure was used to calculate the before and after measure as opposed to the per capita measure. This leaves robbery, DUI, and embezzlement as offenses that did not change statistically in either direction for either the per capita or the at risk measure.

The results for St. Louis County, which were available only on a quarterly basis and represent nineteen offense categories also appear in Table 3.2. Of those nineteen offense categories, six increased significantly between the time periods before and after casino gambling came to the area for both per capita and population at risk calculations. Those were larceny, simple assault, embezzlement, drug violations, family offenses and disorderly conduct. Eight offenses decreased significantly for both calculations. Those were sexual assault, aggravated assault, burglary, arson, forgery, prostitution, sex

offenses, and liquor law violations. Three offense categories, robbery, motor vehicle theft and fraud, decreased significantly for only the population at risk calculation. Homicide and DUI did not change significantly, but DUI changed from an increase to a decrease when population at risk was used as the denominator.

Table 3.3, presenting the results for both Alton and Peoria, Illinois, appears next. For Alton there were statistically significant increases for per capita and per population at risk rates only for credit card fraud and drug violations. There were corresponding statistically significant decreases for robbery, burglary, larceny, simple assault, and fraud. Comparing per capita versus population at risk results revealed a difference for eight offense categories. For aggravated assault, arson, prostitution, sex offenses and family offenses, there were statistically significant decreases in before and after rates when population at risk was taken into account, but not for the per capita measure. For forgery, the difference decreased below significance when population at risk was used rather than merely the per capita measure, though in both situations there was an increase in the before to after rate. For two offenses the sign of the relationship actually changed direction, going from positive to negative for homicide and aggravated assault, with only the population at risk difference for aggravated assault being statistically significant. For sexual assault, the relationship changes to no difference in before and after casino rates for the population at risk measure from a non-statistically significant increase when the per capita population was used to calculate the rate.

Table 2
Percent Differences in Offence Rates Before and After Casino Gambling Per 1,000 Population and Population at Risk in St. Louis City and St. Louis County, Missouri

Offense Category	St. Louis City						St. Louis County					
	Per Capita			Per Population at Risk			Per Capita			Per Population at Risk		
	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference
Homicide	.0444	.0416	-6.31	.0299	.0272	-9.03	.0111	.0123	10.81	.0065	.0067	3.08
Sexual Assault	.0686	.0594	-13.41**	.0461	.0385	-16.49**	.0547	.0490	-10.42*	.0323	.0266	-17.65***
Robbery	2.0631	2.0645	0.07	1.390	1.336	-3.898	.2614	.2574	-1.53	.1542	.1398	-9.34*
Agg. Assault	1.6621	1.473	-11.33***	1.1176	.9555	-14.50***	.6365	.5599	-12.03***	.3753	.3042	-18.95***
Burglary	5.3226	4.9087	-7.78**	3.5842	3.1798	-11.28***	1.9844	1.4702	-25.91***	1.1771	.7981	-32.20***
Larceny	11.1040	12.8528	15.75***	7.4767	8.3258	11.357***	6.7786	7.7464	14.28***	4.0027	4.2008	4.95*
Vehicle Theft	2.9825	2.8243	-5.30*	2.0086	1.8271	-9.036***	.9881	.9846	-.35	.5824	.5349	-8.16**
Arson	.1611	.1846	14.59**	.1085	.1191	9.769	.0739	.0636	-13.94**	.0439	.0345	-21.41***
Simple Assault	2.1855	2.4105	10.30***	1.4717	1.5608	6.054*	1.2250	1.5554	26.97***	.7219	.8433	16.82***
Forgery	.0876	.0645	-26.37***	.0593	.0415	-30.017***	.2280	.2044	-10.35*	.1349	.1111	-17.64***
Fraud	.2901	.2452	-15.48***	.1956	.1583	-19.070***	1.0639	1.0354	-2.68	.6306	.5625	-10.80***
Check Fraud	.0751	.0523	-30.36***	.0507	.0337	-33.531***	na	na	----	na	na	----
C. Card Fraud	.0310	.0234	-24.52***	.0209	.0151	-27.751***	na	na	----	na	na	----
Embezzlement	.0282	.0308	9.21	0.019	0.020	5.263	.0495	.0610	23.23**	.0293	.0330	12.63*
Prostitution	.1309	.1001	-23.53***	.0881	.0645	-26.788***	.0134	.0081	-39.55***	.0079	.0044	-44.30***
Sex Offenses	.1746	.2121	21.48**	.1175	.1367	16.340*	.2096	.1920	-8.40**	.1239	.1042	-15.90***
Drug Violations	.6812	1.0268	50.73***	.0460	.6640	44.348***	.6689	1.2246	83.08***	.3929	.6641	69.03***
Family Offense	.0648	.0852	31.48***	.0436	.0551	26.376***	.1063	.1625	52.87***	.0627	.0881	40.51***
DUI	.2053	.1940	-5.50	.1386	.1259	-9.163	.8948	.9506	6.24	.5315	.5171	-2.71
Liq. Violations	.2694	.4861	80.44***	.1804	.3107	72.228***	.5921	.3494	-40.99***	.3542	.1889	-46.67***
Public Drunk	.0044	.0019	-56.82***	.0030	.0012	-60.000***	na	na	----	na	na	----
Dis. Conduct	.6557	.6363	-2.96	.0441	.4122	-6.594*	.9150	1.2129	32.56***	.5377	.6572	22.22***

Significance Levels * = p < .05 ** = p < .01 *** = p < .001 Degrees of Freedom for St. Louis City df = 51 and for St. Louis County df = 14

For Peoria, the community for which there is the least number of offense category data available, the results resemble those of Sioux City and Biloxi (see Table 3.1). Here nine of the twelve offense categories for which there are data show rate increases from before to after casinos appeared for both per capita and population at risk calculations. Those nine offenses are sexual assault, robbery, aggravated assault, larceny, motor vehicle theft, arson, simple assault, prostitution and drug violations. Burglary and deceptive practices (a composite measure of forgery, various forms of fraud, and embezzlement) decreased significantly for both per capita and population at risk measures from before to after casinos came to the community. One offense, homicide, increased using both measures of population but it did not achieve statistical significance.

Table 3.3
Percent Differences in Offence Rates Before and After Casino Gambling Per 1,000 Population and Population at Risk in Alton and Peoria, Illinois

Offense Category	Alton, Illinois						Peoria, Illinois					
	Per Capita			Per Population at Risk			Per Capita			Per Population at Risk		
	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference
Homicide	.0161	.0162	0.15	.0102	.0089	-12.36	.0064	.0084	31.25	.0052	.0066	26.92
Sexual Assault	.0755	.0873	15.69	.0478	.0478	0.00	.0992	.1453	46.47***	.0810	.1128	39.26***
Robbery	.2253	.1851	-17.86**	.1432	.1025	-28.39***	.2465	.3910	58.62***	.2009	.3040	51.32***
Agg. Assault	.3588	.3595	0.18	.2271	.1957	-13.85***	.9065	1.2723	40.35***	.7412	.9847	32.85***
Burglary	2.6889	2.5159	-6.43*	1.7118	1.3779	-19.51***	1.8759	1.7426	-7.11**	1.5357	1.3539	-11.84***
Larceny	3.3811	2.8266	-16.40***	2.1594	1.5488	-28.28***	4.305	4.7137	9.49***	3.5207	3.6557	3.8344*
Vehicle Theft	.3027	.3713	22.65***	.1921	.2003	4.31	.3018	.7022	132.67***	.2467	.5435	120.31***
Arson	.0682	.0580	-14.97	.0437	.0313	-28.38***	.0571	.0896	56.92***	.0466	.0695	49.14***
Simple Assault	2.4484	1.4728	-39.85***	1.5565	.8115	-47.86***	.2963	.4907	65.61***	.2425	.3791	56.33***
Forgery	.0925	.1215	31.36***	.0595	.0671	12.87	na	na	----	na	na	----
Fraud	.2611	.2310	-11.55*	.1683	.1274	-24.26***	na	na	----	na	na	----
C. Card Fraud	.0108	.0214	99.18**	.0069	.0115	67.40*	na	na	----	na	na	----
Deceptive Practices[1]	na	na	----	na	na	----	.2992	.2335	-21.96***	.2453	.1813	-26.09***
Prostitution	.0311	.0243	-21.74	.0197	.0128	-34.86*	.0824	.1116	35.44***	.0674	.0865	28.34**
Sex Offenses	.1085	.1033	-4.81	.0689	.0574	-16.69*	na	na	----	na	na	----
Drug Violations	.1823	.5738	214.79***	.1140	.3072	169.38***	.2093	.6184	185.46***	.1714	.4773	178.47***
Family Offense	.2550	.2380	-6.675	.1586	.1304	-17.71*	na	na	----	na	na	----

[1] Deceptive Practices includes forgery, fraud, embezzlement, check fraud and credit card fraud.

Significance Levels * = p < .05 ** = p < .01 *** = p < .001 Degrees of Freedom for Alton for Part I offences df = 79 and for Part II offences df = 72
Degrees of Freedom for Peoria df = 74

The last city to be considered is St. Joseph, Missouri (see Table 3.4). Unfortunately, data were only available for nine months after the introduction of casino gambling into this community, so the results should be considered tentative at best. For this reason statistical significance was not as easily achieved as in the other communities where more degrees of freedom apply to the significance calculation. The results reveal that for four offenses, aggravated assault, fraud, sex offenses, and drug violations, increases in before/after rates were positive and achieved statistical significance for both per capita and population at risk calculations. For one offense, larceny, increases were significant when per capita population was the basis for standardization, but not when population at risk was utilized. There were no rate decreases that were significant when both population measures were used, but burglary and motor vehicle theft decreases were statistically significant when population at risk was considered. Three offense categories, homicide, arson and check fraud, did not occur after the advent of casino gambling, but given the short span of comparison for after effects their decrease is viewed as likely unrelated to the issue at question. No other offenses appearing in Table 3.4 had changes that achieved statistical significance.

Turning next to an examination of results by offense category across all jurisdictions, the following consistencies and inconsistencies are revealed. The only offense category that increased from before to after casinos in all jurisdictions was drug violations. It should be noted that in all situations the increases were statistically significant and occurred regardless of which population measure was used for standardization. It is possible that this increase could have occurred without the introduction of casinos into the communities. If one were to ask which offenses

increased most frequently, the answer can be ascertained by looking across all before/after comparisons. Offenses that increased in prevalence to the point of achieving statistical significance for a majority of the comparisons when the population at risk measure was used (the most conservative to gauge a possible casino effect) were simple assault (66% -four of six comparisons) and credit card fraud (75% -three of four comparisons) Whether these instances of increase are due to casino effects at this point would be a matter of conjecture. Of the Part II offenses that might be related to casinos and problems related to losing and/or problem gambling, none with the exception of credit card fraud seem to increase dramatically.

Table 3.4
Percent Differences in Offence Rates Before and After Casino Gambling
Per 1,000 Population and Population at Risk in St. Joseph Missouri

Offense Category	Per Capita			Per Population at Risk		
	Before Gambling	After Gambling	% Difference	Before Gambling	After Gambling	% Difference
Homicide	.0026	0	-100.00^{NA}	.0016	0	-100.00^{NA}
Sexual Assault	.0256	.0170	-33.59	.0157	.0087	-44.59
Robbery	.0488	.0480	-1.64	.0306	.0251	-17.97
Agg. Assault	1.2512	1.8425	47.26***	.7663	.9688	26.43**
Burglary	1.0753	1.0398	-3.30	.6861	.5450	-20.57**
Larceny	3.5226	4.2364	20.26*	2.2092	2.2247	.70
Vehicle Theft	.2451	.2138	-12.77	.1537	.1220	-27.13*
Arson	.0030	0	-100.00^{NA}	.0022	0	-100.00^{NA}
Forgery	.1738	.1782	2.53	.1080	.0952	-11.85
Fraud	.1826	.2852	56.19**	.1127	.1504	33.45*
Check Fraud	.0112	0	-100.00^{NA}	.0075	0	-100.00^{NA}
Embezzlement	.0017	.0015	-11.76	.0011	.0008	-27.27
Sex Offenses	.1211	.1999	65.07*	.0742	.1055	42.18*
Drug Violations	.0372	.1085	191.67***	.0224	.0575	156.70***
Family Offense	.0153	.0496	224.18	.0089	.0056	60.00
Liq. Violations	.0011	.0093	745.45	.0006	.0049	716.67
Dis. Conduct	.0150	.0372	146.36*	.0092	.0197	114.13

St. Joseph, Missouri

Significance Levels * = p < .05** = p < .01*** = p < .001. Degrees of Freedom for St. Joseph df = 9

Overall, using the population at risk and comparing the number of crimes that significantly increased or decreased in each city after casinos were introduced, we find the following:

	Significant Increases	Significant Decreases	No Change	Number of Crimes
Sioux City	12 (54.5%)	4 (18.2%)	6 (27.3%)	22
Biloxi	10 (45.5%)	5 (22.7%)	7 (31.8%)	22
St. Louis (City)	6 (27.3%)	11 (50.0%)	5 (22.7%)	22
St. Louis (County)	6 (31.6%)	11 (57.9%)	2 (10.5%)	19
Alton	2 (12.5%)	10 (62.5%)	4 (25.0%)	16
Peoria	9 (75.0%)	2 (16.7%)	1 (6.3%)	12
St. Joseph	4 (23.5%)	2 (11.8%)	11 (64.7%)	17

From these data, we see that there is little consistency in the before and after casino comparisons for changes in crime. In three communities (Sioux City, Peoria and Biloxi) there were many more crimes that significantly increased than decreased. In three other jurisdictions (Alton, St. Louis (city) and St. Louis County) there were many more crimes that significantly decreased than increased. In one jurisdiction (St. Joseph), twice as many increased than decreased, but a vast majority (11 of 17) showed no change.

Despite the inconsistency of the results across jurisdictions, we can estimate which offenses had an overall significant change using the Wilcoxon Signed Rank Test for Paired Differences (WSRT), a nonparametric test used to compare two probability distributions. To calculate the statistic, the ranks of the absolute values of the differences in before and after offense rates are computed. So, for example, the difference in homicide rates before and after the introduction of casinos are computed for all seven jurisdictions, and the absolute value of this difference is then ranked. After

the absolute values are ranked, the sum of the ranks of the positive differences (increases in the offense), T_+, and the sum of the negative differences (decrease in the offense), T_-, are computed. The WSRT test statistic, T, is the smaller of T_+ and T_-. The smaller the value of T, the greater is the evidence that the two probability distributions, in this case offense rates before and after the introduction of casino gambling, are different, i.e., there has been a significant change in crime following the introduction of casinos. Critical values of T are provided in most statistics books.

As might be expected from the results, there are very few instances where the results from the WSRT are able to reject the null that the probability distributions for per capita or per population at risk offenses are identical, i.e., that there was no significant change in the offense category between pre and post casino periods. Nevertheless, when examining the per capita offenses for those offenses for which data were available from five or more communities, there were statistically significant changes in burglary ($T_- = 25$, $T_+ = 3$), larceny ($T_- = 3$, $T_+ = 25$), drug violations ($T_- = 0$, $T_+ = 28$), and family offenses ($T_- = 1$, $T_+ = 20$). The results for burglary and larceny are significant at the 10% level and would suggest that there was a decline in burglary and an increase in larceny. Results for drug violations and family offenses are significant at the 5% level and are consistent with increases in these offenses. When examining offenses normalized by the population at risk, only burglary ($T_- = 27$, $T_+ = 1$) and drug violations ($T_- = 0$, $T_+ = 28$) appear significant.

With regard to what might be expected from relevant theory such as routine activity theory and the corollary notion of "hot spots," the expectation that crime rates would rise as a result of the advent of casino gambling in the communities under study

was not born out. In fact only two communities, Peoria and Sioux City, showed an overall increase in crimes across all categories and for three communities, Alton, St. Louis City and St. Louis County, significant decreases in crimes were more prevalent than either incidents of no change or significant increases. Ultimately, there is no way of knowing what the crime rates would have been had casino gambling not been introduced into these communities. Also, relative to routine activity theory there is really no way to factor in an empirical equivalent for "capable guardians." However, casino are "hot spots," but in themselves they are also environments where security is maximized by means of security cameras and visible security forces.

Conclusions

The analysis indicates that there are few consistencies between communities when comparing the before and after crime rates for new casino jurisdictions. Although the present analysis is inconclusive regarding the impact of casinos on crime, the absence of clear-cut findings is itself important. It is possible that the numbers (both crime and tourism statistics) are so imprecise as to result in these inconsistencies. However, it is equally plausible that the effects of casinos on a community are quite varied, depending on a multitude of variables that are just beginning to be studied. The effects of a casino on a community may truly be dependent on local conditions (economy, population, demographics, location of the casino, police preparedness, casino regulations, whether casino clientele is mostly local, etc.) not easily generalizable or replicable from community to community. Perhaps a good illustration of this is the case of Biloxi. When Biloxi is compared to the other communities studied here it is evident that casinos have had the most profound impact in terms of economic impact,

tourism and impacts on the community's daily life. It may be that in Biloxi casinos have reached some critical mass where effects that are witnessed are more in line with what might be expected in a community where casinos play a major role. Clearly, the crimes that have increased significantly could easily be related to the life-style and impacts that a casino might be expected to have. Here the crimes that increased were robbery, simple assault, forgery, fraud, credit card fraud, embezzlement, prostitution, drug violations, DUI, and disorderly conduct. However, more studies of the current type are needed to verify such a conclusion.

Some might suggest that there might be a lag in terms of the time it might take for any casino effects to appear. As a part of the present analysis, changes in crimes were examined one, two, and three years out, and little change was noted. In a few instances relationships lost their level of statistical significance, but this seems due to a reduced number of degrees of freedom. Thus, given the present data there seemed little reason to report these findings.

It should be pointed out that by looking at the impact of casinos on crime rates based on the local population and also based on the population at risk, both the conventional and a more conservative measure of the impact of a casino on a community are provided. It was found that, at least for four out of seven communities in this study, the population at risk figures were not greatly different from the usual crime rate measure based on a community's population. For three communities, Alton, Biloxi and St. Louis County the use of population at risk measures for standardization resulted in seven changes in statistical significance of relationships for both Alton and Biloxi and three in the case of St. Louis County. These changes were either increases in rates

that went from significance to non-significance or increases that became significant decreases or decreases that were not statistically significant that became statistically significant when the population at risk measure was used. This suggests that taking tourism into account does provide a more accurate measure of offense prevalence. At the same time, with the exception of Biloxi, these communities are not Las Vegas, Reno, or Atlantic City that attract millions of tourists annually to the casinos where population at risk (including tourists) is tremendously greater than the resident population. However, the seven jurisdictions studied are much more reflective of the communities that have legalized casinos in the 1990s and the results, therefore, more relevant to the current debate focusing on the consequences of a casino's operation in a community.

Lastly, it should be noted that the present analysis is a simple before/after test which assumes any difference in crime is due to the presence (or previous absence) of the independent variable, casinos. This assumption must be called into question when the results achieved in the communities studied are so varied. Studying any community over a multi-year period introduces a multitude of variables beyond the control of the researchers. For now, all we can conclude is that simple analyses and broad generalizations do not suffice to capture the complexity of what occurs in communities when legalized casino gambling is introduced.

Crime in Casino Jurisdictions Versus Crime in Control Jurisdictions

Since control jurisdictions could be matched as nearly as possible to the casino jurisdictions under study, and since in five cases crime data were available for comparison purposes, this allowed the researchers to do the most conclusive test yet to

determine whether the presence of casino gambling effects the prevalence of crime: namely, to compare crime rates in casino jurisdictions with their control counterparts.

Offense by offense comparisons for the casino cities versus the control cities standardized for both per capita population and population at risk measures appear in Tables 3.5 - 3.11. These tables are for Sioux City, St. Joseph, Alton, Peoria, and Biloxi, respectively. The number of offenses utilized for the comparison in the tables varies from 11 - 20. This is due to different coding systems used in the respective cities and the extent of data made available to the research team. Only those results which are statistically significant are discussed in this section.

The results in Table 3.5 comparing Sioux City with Waterloo, Iowa, using the per capita population measure, reveal that aggravated assault increased in Sioux City while it decreased in Waterloo and sex offenses increased more in Sioux City than in Waterloo. Simple assault, which decreased in both, decreased less in Sioux City. As the same time, sexual assault, embezzlement, fraud, drunkenness and disorderly conduct decreased in Sioux City, while they increased in Waterloo. Arson and drug violations increased in both communities, but the increase was greater in Waterloo than in Sioux City. When taking the population at risk into consideration, there are three incidences where the crime rates increased in Sioux City, while decreasing in Waterloo. These were for aggravated assault, larceny, and sex offenses. For one crime, motor vehicle theft, both communities saw increases but the increase was greater in Sioux City. For another crime, simple assault, there were decreases in both cities, but the

Table 3.5
Crime Data for Sioux City and Control (Waterloo, IA)
Pre and Post Casinos Using Per Capita and Population at Risk Measures

Type of Crime	Per Capita Population				Population at Risk			
	Pre Casinos	Post Casinos	% Change	t Value	Pre Casinos	Post Casinos	% Change	t Value
Homicide- Sioux City	.062	.125	1.009	2.21	.011	.020	0.932	2.02
Homicide- Waterloo	.051	.054	0.069		.007	.007	0.039	
Sex. Assault- Sioux City	.643	.633	- 0.014	- 2.35 *	.106	.104	- 0.026	- 8.59 ***
Sex. Assault- Waterloo	.464	.592	0.275		.063	.072	0.157	
Robbery- Sioux City	.910	1.167	0.282	-1.70	.150	.189	0.262	0.13
Robbery- Waterloo	1.571	2.036	0.296		.212	.248	0.171	
Agg. Assault- Sioux City	4.343	9.291	1.140	8.65 ***	.725	1.502	1.072	3.72 **
Agg. Assault- Waterloo	2.611	2.575	- 0.014		.348	0.316	- 0.093	
Burglary- Sioux City	15.497	17.077	0.102	0.70	2.540	2.738	0.078	2.15
Burglary- Waterloo	17.439	17.240	- 0.011		2.361	2.109	- 0.107	
Larceny- Sioux City	41.384	44.340	0.071	0.33	6.823	7.197	0.055	2.42 *
Larceny- Waterloo	45.323	47.329	0.044		6.098	5.767	- 0.054	
MV. Theft- Sioux City	2.527	3.844	0.521	0.57	.414	.614	0.484	2.45 *
MV. Theft- Waterloo	2.806	3.843	0.370		.368	.468	0.270	
Arson- Sioux city	.368	.414	0.124	- 2.28 *	.061	.066	0.091	-1.75
Arson- Waterloo	.639	.824	0.291		.083	.100	0.206	
Simple Assault- Sioux City	11.688	10.971	- 0.061	2.62 *	1.933	1.776	- 0.081	2.35 *
Simple Assault- Waterloo	13.203	11.401	- 0.136		1.767	1.397	- 0.209	
Embezzlement-Sioux City	.107	.061	- 0.435	- 12.78 ***	.017	.010	- 0.430	- 7.72 ***
Embezzlement- Waterloo	.355	.597	0.684		.046	.073	0.560	
Forgery- Sioux City	1.758	2.521	0.434	0.47	.289	.408	0.411	0.92
Forgery- Waterloo	1.975	2.588	0.311		.266	.315	0.181	
Fraud- Sioux City	2.087	1.542	- 0.261	- 5.52 ***	.344	.249	- 0.276	- 3.24 *
Fraud- Waterloo	2.929	3.166	0.081		.390	.384	- 0.016	
Liq. Law Vio.- Sioux City	.834	.967	0.159	0.21	.138	.156	0.129	1.06
Liq. Law Vio.- Waterloo	1.053	1.164	0.106		.142	.142	- 0.005	
Drug Violation- Sioux City	2.172	4.508	1.075	- 2.94 *	.359	.718	1.003	- 2.80 *
Drug Violation- Waterloo	2.337	6.440	1.755		.303	.781	1.576	
Family Off.- Sioux City	.594	1.062	0.787	1.02	.100	.171	0.717	1.95
Family Off.- Waterloo	2.314	2.646	0.144		.312	.322	0.030	
Prostitution- Sioux City	.322	.454	0.409	1.25	.053	.075	0.426	1.57
Prostitution- Waterloo	.268	.242	- 0.094		.036	.029	- 0.193	
Sex Offenses-Sioux City	1.665	2.052	0.232	4.44 **	.276	.331	0.201	4.53 **
Sex Offenses- Waterloo	1.124	1.186	0.055		.152	.145	- 0.049	
Drunkenness-Sioux City	11.342	8.888	- 0.216	- 3.66 **	1.874	1.430	- 0.237	- 2.60 *
Drunkenness- Waterloo	3.741	4.342	0.161		.497	.531	0.070	
Dis. Conduct- Sioux City	8.009	7.599	- 0.051	- 10.37 ***	1.326	1.216	- 0.083	- 7.14 ***
Dis. Conduct- Waterloo	10.004	18.009	0.800		1.334	2.188	0.640	
DUI- Sioux City	7.934	8.272	0.043	0.94	1.315	1.332	0.014	1.31
DUI- Waterloo	4.447	4.022	- 0.096		.586	.492	- 0.159	

Significance Levels* = p < .05** = p < .01   *** = p < .001   Shaded cells are not significant

decrease was again less in Sioux City. For the crimes of sexual assault, embezzlement, drunkenness, and disorderly conduct, the rates in Waterloo increased while they decreased in Sioux City. For one crime, drug violations, the rates increased in both, but the increase was greater in Waterloo. For fraud there were decreases in both, but the decrease was greater in Sioux City than in Waterloo. The case presented in the Sioux City/Waterloo analysis certainly does not indicate that casinos tend to increase crime. If anything, there is a slight incidence of the opposite revealed by these results.

Next, the results comparing St. Joseph to Fort Smith, Arkansas, are presented in Table 3.6. Of the thirteen offense categories for which comparisons can be made, when per capita population is used for standardization, there are four offenses (aggravated assault, burglary, liquor law violations, and family offenses) where the St. Joseph rates went up while Fort Smith's went down. For one offense category, sex offenses, the St. Joseph and Fort Smith rates both increased, but the St. Joseph rate increased by a greater magnitude. There were two offenses where the St. Joseph rate decreased, but the Fort Smith rate increased. These were homicide and motor vehicle theft. For one offense, drug law violations, Fort Smith's increase was significantly greater than that witnessed in St. Joseph. The picture changes slightly when population at risk is taken into account. Here for liquor law and family offense violations, St. Joseph's rates increase while Fort Smith's rates decrease. For one offense, burglary, rates in both cities decrease, but there is a greater decrease in Fort Smith. At the same time homicide and drug law violations go up in Fort Smith while either decreasing in St. Joseph or, as with homicide, dropping off entirely. Finally, for motor vehicle theft the

rates go down in St. Joseph while going up in Fort Smith. Overall, these results are

mixed as they bear upon the likelihood of casinos affecting crime rates.

Table 3.6
Crime Data for St. Joseph and Control (Fort Smith, AR)
Pre and Post Casinos Using Per Capita and Population at Risk Measures

Type of Crime	Per Capita Population				Population at Risk			
	Pre Casinos	Post Casinos	% Change	t Value	Pre Casinos	Post Casinos	% Change	t Value
Homicide- St. Joseph	.008	0	- 1	- 2.58 *	.003	0	- 1.00	- 2.53 *
Homicide- Fort Smith	.016	.022	0.391		.007	.009	.316	
Sex. Assault- St. Joseph	.081	.051	- 0.373	-0.07	.027	.013	- 0.494	0.44
Sex. Assault- Fort Smith	.199	.170	- 0.144		.087	.070	- 0.192	
Robbery- St. Joseph	.139	.144	0.038	0.03	.046	.039	- 0.162	0.11
Robbery- Fort Smith	.295	.300	0.015		.131	.124	- 0.051	
Agg. Assault- St. Joseph	4.122	5.527	0.341	2.27 *	1.362	1.493	0.096	1.57
Agg. Assault- Fort Smith	1.362	1.140	- 0.163		.602	.472	- 0.215	
Burglary- St. Joseph	3.070	3.119	0.016	4.10 ***	1.061	.841	- 0.208	2.25 *
Burglary- Fort Smith	3.733	2.658	- 0.288		1.651	1.103	- 0.332	
Larceny- St. Joseph	10.680	12.709	0.190	1.43	3.611	3.425	- 0.052	0.24
Larceny- Fort Smith	13.777	14.320	0.039		6.066	5.936	- 0.021	
MV. Theft- St. Joseph	.759	.641	- 0.155	- 2.89 **	.259	.172	- 0.334	- 3.63 **
MV. Theft- Fort Smith	1.251	1.507	0.204		.552	.625	0.131	
Forgery- St. Joseph	.563	.535	- 0.050	0.63	.191	.147	- 0.229	0.18
Forgery- Fort Smith	.227	.116	- 0.487		.100	.048	- 0.517	
Fraud- St. Joseph	.576	.855	0.485	0.73	.188	.232	0.233	0.16
Fraud- Fort Smith	.835	1.006	0.205		.366	.417	0.141	
Liq. Law Vio.- St. Joseph	.004	.028	5.314	21.93 ***	.001	.007	4.481	39.93 ***
Liq. Law Vio. Fort Smith	.567	.443	- 0.220		.252	.183	- 0.273	
Drug Violation- St. Joseph	.122	.325	1.657	- 14.10 ***	.040	.090	1.242	- 20.18 ***
Drug Violation-Fort Smith	1.645	2.607	0.585		.721	1.081	0.500	
Family Off.- St. Joseph	.059	.149	1.533	3.40 **	.018	.040	1.174	3.39 **
Family Off.- Fort Smith	.053	.036	- 0.331		.024	.015	- 0.376	
Sex Offenses- St. Joseph	.404	.600	0.484	2.10 *	.134	.162	0.211	1.22
Sex Offenses- Fort Smith	.113	.116	0.032		.050	.048	- 0.030	

Significance Levels * = p < .05   ** = p < .01   *** = p < .001 Shaded cells are not significant

The third city, Alton, Illinois, was matched with Rockford, Illinois. The results of the analysis appear in Table 3.7. The results for Alton are considerably different than those for the first two cities. Here, of the fifteen offense categories for which comparisons can be made, when per capita population is used for standardization, there are no offenses where the Alton rates increase more than the Rockford rates and reach statistical significance. For five offenses, the Alton rate went down, while the rate for Rockford, the control jurisdiction, went up (robbery, burglary, simple assault, fraud, and sex offenses). For three offenses, aggravated assault, motor vehicle theft, and forgery, the Alton rate went up, but the corresponding Rockford rates went up more. For one offense, larceny, both rates went down, but the Rockford rate went down less. When population at risk is used for standardization, there is one offense where Alton's rate decreased, but the decrease in Rockford was greater. That was for liquor law violations. There were eight offenses (robbery, aggravated assault, motor vehicle theft, arson, simple assault, fraud, prostitution and sex offenses) where the Alton rates went down, while the Rockford rates went up. For two offenses, forgery and drug violations, Alton's rate went up, but Rockford's rate went up more. For burglary, Alton's rate decreased, as did Rockford's, but at a greater rate. Taken in total these results suggest that, if anything, the presence of casinos may have contributed to a lessening of crime, not an increase.

The fourth city, Peoria, was also matched with Rockford. Its results appear in Table 3.8. Here the results are the opposite of those obtained for Alton. Again, the rates are first examined using per capita standardization. Though only eleven offense comparisons could be made, seven of the eleven achieved statistical significance and

six of those showed crime increases in the casino jurisdiction. Sexual assault, aggravated assault, motor vehicle theft, arson and simple assault offenses increased at a greater rate in Peoria than in the control jurisdiction. In one instance, larceny, the rate went up in Peoria while it decreased in Rockford. In only one instance did the crime decrease in Peoria while it increased in Rockford. That was for burglary. Using population at risk, with the exception of the significant finding for burglary which disappears, all the results are the same. The data from this table suggest that casino presence may indeed have exacerbated the crime problem in Peoria.

Table 3.7
Crime Data for Alton and Control (Rockford, IL)
Pre and Post Casinos Using Per Capita and Population at Risk Measures

Type of Crime	Per Capita Population				Population at Risk			
	Pre Casinos	Post Casinos	% Change	t Value	Pre Casinos	Post Casinos	% Change	t Value
Homicide- Alton	.047	.048	0.015	0.66	.017	.014	- 0.172	1.42
Homicide- Rockford	.027	.037	0.358		.017	.021	0.197	
Sex. Assault- Alton	.227	.256	0.126	-0.52	.083	.073	- 0.114	-1.62
Sex. Assault- Rockford	.278	.323	0.161		.173	.179	0.033	
Robbery- Alton	.684	.532	- 0.222	- 8.40 ***	.250	.155	- 0.380	- 11.41 ***
Robbery- Rockford	.860	1.229	0.429		.536	.680	0.269	
Agg. Assault- Alton	1.056	1.063	0.007	- 3.61 ***	.387	.303	- 0.216	- 6.24 ***
Agg. Assault- Rockford	1.389	1.668	0.201		.863	.924	0.072	
Burglary- Alton	8.211	7.245	- 0.118	- 2.58 *	3.004	2.077	- 0.308	- 4.17 ***
Burglary- Rockford	6.237	6.462	0.036		3.898	3.577	- 0.082	
Larceny- Alton	10.244	8.136	- 0.206	-3.57 ***	3.771	2.338	- 0.380	-0.71
Larceny- Rockford	14.007	13.927	- 0.006		8.731	7.701	- 0.118	
MV Theft- Alton	.906	1.095	0.208	- 4.95 ***	.330	.307	- 0.068	- 11.71 ***
MV Theft- Rockford	1.306	2.025	0.550		.807	1.121	0.388	
Arson- Alton	.199	.172	-0.139	-1.41	.074	.048	- 0.345	- 2.93 *
Arson- Rockford	.068	.081	0.195		.042	.045	0.061	
Sim. Assault- Alton	7.241	4.296	- 0.407	- 7.45 ***	2.657	1.241	- 0.533	- 8.31 ***
Sim. Assault- Rockford	6.186	7.018	0.135		3.850	3.858	0.002	
Forgery- Alton	.277	.361	0.302	- 3.25 *	.103	.105	0.014	- 5.15 ***
Forgery- Rockford	.509	.745	0.464		.317	.406	0.278	
Fraud- Alton	.765	.689	- 0.099	- 2.50 *	.287	.199	- 0.305	- 4.41 ***
Fraud- Rockford	.181	.331	0.833		.113	.181	0.598	
Liq. Law Vio.- Alton	.482	.145	- 0.699	-1.13	.178	.042	- 0.762	3.82 ***
Liq. Law Vio.- Rockford	.515	.229	- 0.556		.321	.126	- 0.608	
Drug Violation- Alton	.600	1.738	2.105	0.81	.199	.480	1.408	- 5.09 ***
Drug Violation- Rockford	.320	1.340	3.193		.199	.731	2.682	
Prostitution- Alton	.087	.074	- 0.159	0.20	.032	.020	- 0.381	- 2.24 *
Prostitution- Rockford	.144	.174	0.208		.090	.095	0.058	
Sex Offenses- Alton	.333	.290	- 0.132	- 3.97 ***	.122	.083	- 0.314	- 4.69 ***
Sex Offenses- Rockford	.434	.520	0.197		.271	.284	0.045	

Significance Levels* = p < .05   ** = p < .01   *** = p < .001   Shaded cells are not significant

Table 3.8
Crime Data for Peoria and Control (Rockford, IL)
Pre and Post Casinos Using Per Capita and Population at Risk Measures

Type of Crime	Per Capita Population				Population at Risk			
	Pre Casinos	Post Casinos	% Change	t Value	Pre Casinos	Post Casinos	% Change	t Value
Homicide- Peoria	.019	.024	0.299	0.75	.011	.013	0.176	0.44
Homicide- Rockford	.027	.037	0.358		.017	.021	0.197	
Sex. Assault- Peoria	.297	.427	0.437	2.88 **	.177	.229	0.288	2.90 **
Sex. Assault- Rockford	.278	.323	0.161		.173	.179	0.033	
Robbery- Peoria	.761	1.132	0.487	0.02	.452	.609	0.346	0.26
Robbery- Rockford	.860	1.229	0.429		.536	.680	0.269	
Agg. Assault- Peoria	2.719	3.804	0.399	4.68 ***	1.629	2.030	0.246	4.34 ***
Agg. Assault- Rockford	1.389	1.668	0.201		.863	.924	0.072	
Burglary- Peoria	5.636	5.151	- 0.086	- 2.46 *	3.384	2.768	- 0.182	1.79
Burglary- Rockford	6.237	6.462	0.036		3.898	3.577	- 0.082	
Larceny- Peoria	12.965	14.001	0.080	2.12 *	7.766	7.498	- 0.034	3.06 **
Larceny- Rockford	14.007	13.927	- 0.006		8.731	7.701	- 0.118	
MV. Theft- Peoria	.905	2.169	1.396	3.78 ***	.542	1.156	1.132	4.31 ***
MV. Theft- Rockford	1.306	2.025	0.550		.807	1.121	0.388	
Arson- Peoria	.171	.262	0.536	3.31 **	.102	.141	0.381	2.80 **
Arson- Rockford	.068	.081	0.195		.042	.045	0.061	
Simple Assault- Peoria	.883	1.482	0.678	5.13 ***	.530	.791	0.492	4.65 ***
Simple Assault- Rockford	.170	.198	0.167		.106	.111	0.042	
Drug Violation- Peoria	.632	1.859	1.942	1.92	.379	.989	1.608	1.53
Drug Violation- Rockford	.320	1.229	2.846		.199	.681	2.426	
Prostitution- Peoria	.245	.336	0.373	1.48	.148	.181	0.223	1.15
Prostitution- Rockford	.144	.160	0.115		.090	.090	- 0.001	

Significance Levels * = p < .05   ** = p < .01   *** = p < .001   Shaded cells are not significant

Biloxi, Mississippi, is the city that might be expected to have experienced the greatest effect of casinos on crime since it has nine casinos and they have significantly contributed to its success as a resort community. The crime data comparing Biloxi to its matched city of Pensacola, Florida, appear in Table 3.9. Of the sixteen offense comparisons, eight have significant differences in rates over time when the per capita population is used for standardization. Two offenses, robbery and simple assault, rose in both jurisdictions but rose at a greater rate in Biloxi. One category, sex offenses, declined in both, but declined at a lower rate in Biloxi than Pensacola. Five offenses (larceny, forgery, fraud, liquor law violations, and prostitution) increased in Biloxi while decreasing in Pensacola. Utilizing the population at risk measure resulted in four changes. Robbery and simple assault now rose in Biloxi while decreasing in Pensacola, as opposed to rising in both. Also, sex offenses, which previously had gone down in both, still did so, but their difference was no longer significant. Liquor law violations still rose in Biloxi and declined in Pensacola, but the magnitude was diminished below the significance level. All of these significant differences are consistent with the notion that the presence of casinos increases crime.

Included in the results presented here are comparisons between St. Louis, Missouri, a casino jurisdiction, and Richmond, Virginia, its matched control jurisdiction. These data are presented with only the per capita standardization, since tourism data to calculate population at risk were not available for Richmond. Of the twenty offense categories, there were four where the rates when up in St. Louis and down in Richmond. These were larceny, liquor law violations, sex offences, and DUIs. Drug violations when up in both cities but the increase was significantly greater in St. Louis.

Prostitution went down in both, but the decrease was significantly greater in Richmond. Four offenses showed a relative decrease between the casino and control jurisdictions. Assaults and forgeries went down in St. Louis while they went up in Richmond. Burglaries decreased in both communities but at a greater rate in St. Louis; simple assaults went up in both, but a significantly greater increase was witnessed in Richmond. Here again, as in the data from Sioux City and St. Joseph, the results are mixed as to whether there is a casino effect on crime.

Table 3.9
Crime Data for Biloxi and Control (Pensacola, FL)
Pre and Post Casinos Using Per Capita and Population at Risk Measures

Type of Crime	Per Capita Population				Population at Risk			
	Pre Casinos	Post Casinos	% Change	t Value	Pre Casinos	Post Casinos	% Change	t Value
Homicide- Biloxi	.124	.086	- 0.305	1.13	.006	.004	- 0.382	1.33
Homicide- Pensacola	.101	.094	- 0.066		004	.003	- 0.142	
Sex. Assault- Biloxi	.596	.629	0.054	1.07	.028	.026	- 0.071	0.52
Sex. Assault- Pensacola	.917	1.072	0.170		.033	.033	0.022	
Robbery- Biloxi	2.798	4.451	0.591	4.00 **	.130	.183	0.403	3.19 *
Robbery- Pensacola	2.697	2.702	0.002		.095	.084	- 0.116	
Agg. Assault- Biloxi	7.979	7.901	- 0.010	0.62	.372	.325	- 0.126	0.05
Agg. Assault- Pensacola	7.438	6.949	- 0.066		.266	.218	- 0.182	
Burglary- Biloxi	23.249	19.273	- 0.171	1.86	1.089	.792	- 0.272	1.43
Burglary- Pensacola	27.493	28.274	0.028		.979	.884	- 0.096	
Larceny- Biloxi	59.436	71.011	0.195	10.95 ***	2.765	2.907	0.051	6.63 ***
Larceny- Pensacola	45.568	36.826	- 0.192		1.646	1.148	- 0.302	
MV. Theft- Biloxi	7.870	6.138	- 0.220	2.01	.368	.253	- 0.313	2.10
MV. Theft- Pensacola	4.584	4.402	- 0.040		.165	.137	- 0.169	
Arson- Biloxi	.344	.282	- 0.180	0.42	.016	.012	- 0.287	0.61
Arson- Pensacola	.268	.250	- 0.069		.009	.008	- 0.172	
Sim. Assault- Biloxi	10.825	20.270	0.873	18.58 ***	.505	.824	0.632	3.36 *
Sim. Assault- Pensacola	9.978	11.113	0.114		.353	.347	- 0.018	
Forgery- Biloxi	2.025	2.741	0.353	3.19 *	.090	.113	0.250	2.69 *
Forgery- Pensacola	3.650	2.144	- 0.413		.126	.067	- 0.468	
Fraud- Biloxi	1.822	2.462	0.352	3.47 *	.085	.101	0.183	5.33 **
Fraud- Pensacola	1.563	1.175	- 0.248		.126	.067	- 0.468	
Liq. Law Vio.- Biloxi	.451	.607	0.346	4.61 **	.020	.025	0.227	1.49
Liq. Law Vio.- Pensacola	.719	.320	- 0.555		.013	.010	- 0.197	
Drug Violation- Biloxi	6.266	10.587	0.690	0.59	.292	.429	0.470	2.25
Drug Violation- Pensacola	8.617	12.079	0.402		.307	.378	0.232	
Prostitution- Biloxi	.224	.729	2.251	13.89 ***	.010	.030	1.976	13.15 **
Prostitution- Pensacola	2.523	.375	- 0.851		.088	.012	- 0.862	
Sex Offenses- Biloxi	.805	.746	- 0.074	12.26 ***	.036	.031	- 0.143	0.13
Sex Offenses- Pensacola	3.523	1.672	- 0.525		.060	.054	- 0.101	
Dis. Conduct- Biloxi	6.202	11.205	0.807	1.86	.277	.453	0.639	1.81
Dis. Conduct- Pensacola	.167	.196	0.171		.006	.006	0.045	

Significance Levels* = p < .05   ** = p < .01   *** = p < .001   Shaded cells are not significant

Table 3.10
Crime Data for St. Louis and Control (Richmond, VA)
Pre and Post Casinos Using Only The Per Capita Population Measure

Type of Crime	Per Capita Population			
	Pre Casinos	Post Casinos	% Change	t Value
Homicide - St. Louis	.548	.500	- 0.088	1.24
Homicide - Richmond	.579	.643	0.111	
Sex. Assault- St. Louis	.831	.726	- 0.127	0.77
Sex. Assault - Richmond	.872	.738	- 0.153	
Robbery- St. Louis	25.505	24.174	- 0.052	0.70
Robbery- Richmond	6.677	7.921	0.186	
Agg. Assault- St. Louis	20.189	17.180	- 0.149	-3.65 *
Agg. Assault- Richmond	7.216	8.631	0.196	
Burglary - St. Louis	64.554	58.095	- 0.100	-2.32 *
Burglary- Richmond	21.496	20.519	- 0.045	
Larceny- St. Louis	135.514	153.664	0.134	3.17 *
Larceny- Richmond	58.507	53.586	- 0.084	
MV. Theft- St. Louis	36.009	33.935	- 0.058	1.02
MV. Theft- Richmond	11.786	12.264	0.041	
Arson- St. Louis	1.980	2.266	0.144	1.94
Arson- Richmond	.146	.010	- 0.929	
Simple Assault- St. Louis	26.667	28.328	0.062	- 2.72 *
Simple Assault- Richmond	8.105	14.757	0.821	
Embezzlement.- St. Louis	.335	.378	0.130	0.45
Embezzlement- Richmond	.037	.062	0.682	
Forgery- St. Louis	1.013	.764	- 0.246	- 5.04 **
Forgery- Richmond	1.232	1.545	0.254	
Fraud- St. Louis	3.519	2.671	- 0.241	2.16
Fraud- Richmond	2.607	1.218	- 0.533	
Liq. Law Vio.- St. Louis	3.160	5.044	0.596	3.27 *
Liq. Law Vio.- Richmond	1.971	0.159	- 0.919	
Drug Violation- St. Louis	8.306	12.229	0.472	5.38 **
Drug Violation- Richmond	8.870	9.330	0.052	
Family Off.- St. Louis	.792	1.050	0.326	1.26
Family Off.- Richmond	.273	.406	0.487	
Prostitution- St. Louis	1.525	1.111	- 0.271	5.28 **
Prostitution- Richmond	2.571	.770	- 0.700	
Sex Offenses- St. Louis	2.069	2.329	0.125	5.97 **
Sex Offenses- Richmond	1.610	.447	- 0.722	
Dis. Conduct- St. Louis	7.947	7.197	- 0.094	0.94
Dis. Conduct- Richmond	1.967	.778	- 0.604	
DUI- St. Louis	2.376	2.466	0.038	3.75 **
DUI- Richmond	3.682	2.477	- 0.327	

Significance Levels* = p < .05   ** = p < .01   *** = p < .001

To summarize the evidence bearing on whether or not casino presence affects crime, one could look at all of the incidents where offense rates changed in the casino jurisdictions versus the control jurisdictions and the differences that were statistically significant. A simple tally of the direction (- vs. +) of the significance of the *t* values provides a rough indication of the evidence concerning a possible casino effect. Overall, for the six communities, when the per capita population was the basis for standardization, there were 23 (or 45%) of the 51 comparisons that achieved significance that were negative, indicating no casino effect. There were 28 (or 55%) that were positive that suggest a possible casino effect. When population at risk was the measure of standardization (which excludes St. Louis due to unavailability of tourism data for the control city), the results are similar. Of the 40 comparisons where statistical significance was achieved, 19 (or 47.5%) of the results were negative, suggesting no effect, and 21 or (52.5%) were positive, suggesting a possible casino effect. Across all these tests, the evidence indicates slightly more increases than decreases in crime categories in casino communities, but the evidence is far from conclusive.

One must recall, however, that the city by city analysis showed considerable differences between casino cities and their controls vis-a-vis each other. Alton's results indicated that casino presence may have the effect of decreasing crime, while the results for Sioux City, St. Joseph and St. Louis were mixed. The results for Peoria and Biloxi, however, provide moderate support for a casino effect. It is certainly possible that the possibility of casino effects is contingent upon some unknown or unaccounted for factor.

Conclusions on Casinos and Crime

The examination of the crime data indicated that there can be no conclusive statement, either way, regarding the effect that casinos have on crime. The fact that the results are mixed suggests that there may be some contextual factors operating in some communities that allows for casinos to positively effect crime under certain, as yet unknown circumstances. At the same time there is no way of knowing whether, if the apparent casino effect, when present, is a direct one. One could easily hypothesize that what is interpreted as a casino effect is actually a tourism effect. As Eadington (1996) has pointed out, crime increases in casino jurisdictions may be a function of increased tourism rather than anything inherent in casino gambling itself, as the introduction of resorts and theme parks into an area have been shown to increase an area's crime.[32] Of all of the communities examined Biloxi is far and away the most impacted by tourism, as this gulf city has eight casinos it draws tens of thousands of visitors annually. None of the other communities come anywhere near drawing the tourists that Biloxi does and Biloxi is the community that has witnessed the largest increase in crime since casinos were introduced. Is this increase due to the presence of casinos, the increase in tourism which brings to town many vulnerable targets for crime and many read perpetrators, or is there yet some other factor that comes into play.

In conclusion, though this test, utilizing matched control jurisdictions and taking the true population at risk into account by adding the tourist population is the most sophisticated test yet done to determine if there is a casino effect on crime, questions remain. More research, adding yet other variables and using more sophisticated statistical techniques, needs to be undertaken before conclusive statements regarding

this effect can be made.

Community Perceptions of Casino Gambling's Impact on Crime

In addition to actual crime statistics, residents' perception of crime is also examined. Perceptions are important because, among other things, the continued legality of casinos is potentially jeopardized if residents are dissatisfied with the presence of a casino in their community. Moreover, if residents have a perception that casino gambling increases crime, community resources may be inefficiently allocated toward crime prevention by elected officials seeking to satisfy their constituency and maximize their probability of re-election.

To determine the residents' perception of crime, four types of questions are examined in this analysis. They are the following:

> "What effect do you think the presence of casinos has had on the amount of crime in your community? Would you say casino gambling has caused an increase, decrease, or has had no effect at all?"

> "Since the introduction of casinos in your community, has the fear of crime, increased, decreased or stayed about the same?"

> "Since the introduction of casinos in your community, has the level of juvenile delinquency, increased, decreased or stayed about the same?"

> "With regard to people being physically assaulted, do you think casino gambling has caused a large increase, moderate increase, small increase, no change at all, small decrease, moderate decrease, or large decrease?"

The last question was repeated in identical form for "people being robbed," "drunk drivers on the road," "people drinking in public," "groups of teenagers or other groups of people hanging out and harassing people," "level of illegal drug use," "child abuse and neglect," "vandalism," "victimization of the elderly," "domestic abuse," and for "prostitution."

Results

The results presented in Table 3.11 are the mean responses for each community to the questions regarding perceived effects of casinos on the amount of crime, level of juvenile delinquency and fear of crime. Responses are coded as 1, which indicates a perceived decrease in crime; 2, no change in crime; or 3, which indicates that respondents perceived an increase in crime. Since before/after measures of the perceived levels of these variables were not available, t values were calculated against the null hypothesis that there should be no perceived change in the values. A cursory look at these results indicates that, without exception, respondents perceived increases in amount of crime, juvenile delinquency and fear of crime since the advent of casinos in their communities and the increases are statistically significant. The magnitude of the perceived increase in juvenile delinquency was greatest for Sioux City ($\bar{x}$ = 2.30) and the magnitude of perceived increases in amount of crime and fear of crime was greatest for Biloxi, ($\bar{x}$ = 2.50 and $\bar{x}$ = 2.31 respectively). Since the question, "What effect do you think the presence of casinos has had on the amount of crime in your community?" specified casino effects, one can conclude that the respondents perceived a causal effect. The other questions were worded, "Since the introduction of casinos in your community, has fear of crime (or juvenile delinquency) increased, decreased or stayed about the same?" Making a causal inference requires an assumption that may or may not be valid, but the respondents clearly saw a correlation between the presence of casinos and increases in fear of crime and delinquency.

Tables 3.12 and 3.13 present the results examining the perceived effects of casinos on individual criminal acts. Here as in Table 3.11, all crimes are perceived to

have increased, although "harassment by juveniles and others" was significant at the .001 level for Biloxi ($\bar{x}$ = 4.18) and at the .05 level for East Peoria ($\bar{x}$ = 4.16), as opposed to being beyond the .000 level for the other criminal acts in all communities. The greatest levels of perceived increases were for DUI in **Biloxi** ($\bar{x}$ = 5.33) and for child abuse and domestic abuse in Sioux City ($\bar{x}$ = 5.08 and $\bar{x}$ = 5.06, respectively), both of which fall in the "small increase" category. Though none of the increases are perceived as even moderately large on the average, they are all statistically significant. Further, the wording of these questions, ""With regard to _____, do you think casino gambling has caused a large increase, moderate increase, small increase, no change at all, small decrease, moderate increase, large increase," indicates that the respondents see a causal relationship between casino presence and the various crime increases. It could be argued that the perceived increases may be due to real increases in crime or faulty perceptions of increases which then may be erroneously linked to the casino presence and casino effects.

Table 3.11
Mean Responses and t Values for Perceived Effects of Casinos on the
Amount of Crime, Level of Juvenile Delinquency and Fear of Crime
in the Community, Assuming the Null Hypothesis of No Change or Effect

City	Amount of Crime		Level of Juvenile Delinquency		Fear of Crime	
	$\bar{X}^1$	t Value[2]	$\bar{X}$	t Value	$\bar{X}$	t Value
Alton (N = 346 - 385)	2.18	7.30	2.13	5.85	2.21	8.42
Biloxi (N = 318 - 383)	2.50	17.04	2.22	8.01	2.31	10.04
E. Peoria (N = 83 - 97)	2.34	6.14	2.17	3.83	2.21	4.71
Peoria (N = 279 - 299)	2.30	10.56	2.22	7.88	2.21	7.97
Sioux City (N = 364 - 392)	2.39	14.90	2.30	11.65	2.29	11.57
St. Joseph (N = 381 - 403)	2.22	9.76	2.16	7.74	2.16	6.82
St. Louis City (N = 306 - 342)	2.24	9.59	2.09	3.63	2.11	4.54
St. Louis County (N = 287 - 328)	2.23	8.75	2.14	6.62	2.12	4.61
Total (N = 2388 - 2629)	2.30	30.06	2.18	19.95	2.21	21.06

[1] Response categories were 1 = Decrease, 2 = No effect at all/Stayed about the same, 3 = Increased

[2] All mean responses were statistically significant for the null hypothesis of no change at the .000 level.

Table 3.12
Mean Responses and t Values for Perceived Effects of Casinos on Various Crimes,
Assuming the Null Hypothesis of No Change or No Effect

City	Robbery		Assault		DUI		Drinking In Public		Drug Use		Prostitution	
	$\overline{X}^1$	t Value[2]	$\overline{X}^1$	t Value	$\overline{X}^1$	t Value	$\overline{X}^1$	t Value	$\overline{X}^1$	t Value	$\overline{X}^1$	t Value
Alton (N = 339 - 385)	4.37	8.12	4.39	8.49	4.67	12.45	4.48	9.53	4.49	9.09	4.55	9.46
Biloxi (N = 313 - 389)	4.86	14.66	4.79	13.37	5.33	20.67	4.82	12.85	4.65	10.11	4.77	10.76
E. Peoria (N = 87 - 100)	4.38	4.29	4.44	4.36	4.88	7.02	4.70	6.00	4.59	5.22	4.39	4.02
Peoria (N = 261 - 299)	4.48	9.70	4.42	8.54	4.76	11.47	4.64	10.08	4.55	9.08	4.52	8.66
Sioux City (N = 338 - 399)	4.54	11.07	4.56	12.09	4.93	16.12	4.71	13.63	4.79	13.11	4.38	7.28
St. Joseph (N = 342 - 406)	4.27	7.26	4.28	7.70	4.64	11.54	4.54	10.78	4.42	8.59	4.15	4.44
St. Louis City (N = 293 - 345)	4.45	9.61	4.47	9.73	4.72	12.75	4.47	8.41	4.28	6.25	4.43	7.49
St. Louis County (N = 265 - 324)	4.32	7.95	4.31	7.51	4.64	11.72	4.38	7.53	4.26	6.23	4.38	7.12
Total (N = 2238 - 2635)	4.47	26.20	4.46	25.90	4.82	36.99	4.58	28.24	4.50	24.39	4.45	21.41

[1] Response categories were 1 = Large Decrease, 2 = Moderate Decrease, 3 = Small Decrease, 4 = No Change at All, 5 = Small Increase, 6 = Moderate Increase, 7 = Large Increase.

[2] All mean responses were statistically significant for the null hypothesis of no change at the .000 level.

Table 3.13
Mean Responses and t Values for Perceived Effects of Casinos on Various Crimes,
Assuming the Null Hypothesis of No Change or No Effect

City	Harassment by Juveniles/Others		Child Abuse		Vandalism		Victimization of the Elderly		Domestic Abuse	
	$\overline{X}^1$	t Value[2]	$\overline{X}^1$	t Value	$\overline{X}^1$	t Value	$\overline{X}^1$	t Value	$\overline{X}^1$	t Value
Alton (N = 339 - 385)	4.16	4.54	4.68	12.13	4.37	8.18	4.42	7.87	4.70	12.59
Biloxi (N = 313 - 389)	4.18	3.46***	4.74	13.03	4.61	11.13	4.50	8.15	4.77	13.49
E. Peoria (N ≈ 87 - 100)	4.16	2.07*	4.68	5.94	4.43	4.68	4.69	6.41	4.87	7.49
Peoria (N = 261 - 299)	4.27	6.30	4.81	13.04	4.48	8.80	4.68	11.68	4.91	15.72
Sioux City (N = 338 - 399)	4.31	7.48	5.08	19.40	4.59	11.45	4.76	14.00	5.06	19.45
St. Joseph (N = 342 - 406)	4.14	4.18	4.65	12.47	4.39	8.80	4.44	9.33	4.72	13.67
St. Louis City (N = 293 - 345)	4.19	5.18	4.62	10.56	4.37	8.28	4.56	11.03	4.77	14.11
St. Louis County (N = 265 - 324)	4.10	3.65	4.63	12.05	4.27	7.10	4.47	9.97	4.62	12.13
Total (N = 2238 - 2635)	4.19	12.95	4.75	35.32	4.44	24.63	4.55	27.48	4.80	38.71

[1] Response categories were 1 = Large Decrease, 2 = Moderate Decrease, 3 = Small Decrease, 4 = No Change at All, 5 = Small Increase, 6 = Moderate Increase, 7 = Large Increase.

[2] All mean responses were statistically significant for the null hypothesis of no change at the .000 level with the exception of those indicated by *** = p <.001 and * = p < .05.

The extent to which perceptions match reality, at least in terms of increases or decreases in crime over the time period since the inception of casinos in communities, can be examined through the data presented in Table 3.14. Table 3.14 presents percentage increases or decreases in crime as measured by before/after casino comparisons of crimes known to the police for which comparable data were available from the police departments in the jurisdictions studied. Table 3.14 does not include results for East Peoria since the police department could not provide the data. Results for St. Joseph are not presented since data only existed for a nine month period after casinos were introduced, not a sufficient time for meaningful comparisons to be made. In addition, police data for all communities were not available for harassment by juveniles or others, child abuse, vandalism, victimization of the elderly or domestic abuse. It should be noted that the data presented in Table 3.14 are standardized both by the resident population as well as the population at risk, which included tourists visiting the community. The reason for including the population at risk is to get a truer picture of the actual crime rate as it relates to the number of people in the community at any one time.

Reviewing Table 3.14, it is apparent from police records that not all crimes increased during the period after casinos appeared. Examining the data for each offense reveals the inconsistences. Robbery, for example, actually declined in Alton, St. Louis City and St. Louis County, though not in St. Louis City when only the resident population was considered; Alton was the only community where the decrease in robbery was statistically significant. For Biloxi, Peoria, and Sioux City, there were significant increases in robbery. There was a similar pattern for assault as significant

decreases appeared for Alton, St. Louis City and St. Louis County, though for Alton there was actually a slight increase when only the resident population was used for standardization. Conversely, there were again statistically significant increases for assault in Biloxi, Peoria and Sioux City, but when population at risk was used for Biloxi the statistically significant increase ($\bar{x} = 6.44$, $p = .05$) changes to a non-significant decrease ($\bar{x} = -5.57$). Next, for DUI, of the four communities for which data were available, the only statistically significant increase occurred in Biloxi and, regardless of which population measure was used, the magnitude of the increase was over 200%. Sioux City, St. Louis City and St. Louis County reveal very small increases when resident population is considered, but for St. Louis City and County the figures become small decreases when population at risk is factored in. For public drunkenness, data were available for only three communities. Biloxi was the only city for which an increase occurred and the difference was significant only when the resident population was considered. That the increase was not significant when the population at risk was used is likely due to the substantial tourist draw that the gulf city of Biloxi and its casinos represent. Sioux City witnessed a decline in public drunkenness that was statistically significant regardless of which population measure was used. Similarly, St. Louis City exhibited a 60% decrease which was statistically significant when population at risk was used but no change when resident population was considered. Next, drug violations increased across all cities, regardless of which population measure was utilized for standardization. The largest increase was 214.8% for Alton when using resident population, but this declined to 169.4% using population at risk. The smallest increase was 44.3% for St. Louis City using population at risk. Finally, for prostitution, half the

communities witnessed an increase and half a decrease. Statistically significant increases occurred in Biloxi, Peoria and Sioux City with Biloxi's increases exceeding 300%. Alton, St. Louis City and St. Louis County all decreased, though Alton's per capita rate did not achieve statistical significance.

Table 3.14

Offenses Known to Police Standardized by Per Capita Population and Population At Risk[1]

Actual Crime Increases/ Decreases	City/Community					
	Alton	Biloxi	Peoria	Sioux City	St. Louis City	St. Louis County
Robbery Per Capita	-17.86**	57.37***	58.62***	24.07***	0.07	-1.53
Robbery Pop. At Risk	-28.39***	38.21***	51.32***	24.44**	-3.90	-9.34
Assault Per Capita	0.18	6.44*	40.35***	112.95***	-11.33***	-12.03***
Assault Pop. At Risk	-13.85***	-5.57	32.85***	111.47***	-14.50***	-18.95***
DUI Per Capita	na	281.81***	na	1.99	0.14	6.24
DUI Pop. At Risk	na	224.45***	na	1.35	-9.16	-2.71
Public Drunkenness Per Capita	na	22.91**	na	-19.63***	0.00	na
Public Drunkenness Pop. At Risk	na	8.72	na	-20.32***	-60.00***	na
Drug Violations Per Capita	214.79***	91.35***	185.46***	111.8***	50.73***	83.08***
Drug Violations Pop. At Risk	169.38***	66.93***	178.47***	115.55***	44.35***	69.03***
Prostitution Per Capita	-21.74	372.36***	35.44***	39.10**	-23.53***	-39.55***
Prostitution Pop. At Risk	-34.86*	310.96***	28.34**	24.07***	-26.79***	-44.30***

na - Data not available

Significance Levels   * = $p < .05$ ** = $p < .01$ *** = $p < .001$

[1] East Peoria was eliminated from this analysis due to lack of availability of police data and St. Joseph was excluded since data were only available for the immediate nine month period after the inception of casinos.

Conclusions on the Perception of Crime

Responses to the questions regarding perceived changes in overall crime, juvenile delinquency, fear of crime, and levels of individual offenses since the inception of casinos all revealed perceptions of increases for each of these categories. This in itself is meaningful, for as W.I. Thomas (1928) wrote, "Situations defined as real are real in their consequences."[33] The fact that citizens believe crime has risen and that the rise is in some way due to the casino presence is important. At the same time, as the results in Table 3.14 show, perceptions of the relationship of casinos to crime do not necessarily mirror reality, at least as gauged by offenses known to police. Some crime rates have gone down and done so significantly, though citizens perceive them to have increased. Examples of this lack of congruence include robbery in Alton and assault in St. Louis City and County. Prostitution is also perceived to have increased in these three communities, though it actually decreased substantially.

Although police records indicate that some crimes decreased in prevalence, there were a number of crimes that increased, and in these cases the citizens' perceptions were accurate. The next question would be, how accurate? When overall crime is considered, official data indicate that increases were evidenced in Sioux City, Biloxi, and Peoria. Conversely, Alton, St. Louis City and St. Louis County witnessed a decline for all offenses for which data were available. This would indicate that citizens in these three communities had faulty perceptions, as least as gauged by the data available from their police departments. When specific offenses are examined, the best indicator of how discrepant perceptions can be from reality is the case of drug violations. For Alton, Peoria, and Sioux City, increases were over 100%, yet the

average perception of increase did not ever reach the overall level of a small increase (4.49 for Alton, 4.55 for Peoria and 4.79 for Sioux City, where small increase would have been 5.00).

In conclusion, it is clear that citizens' perceptions do not accurately reflect changes in crime after casinos enter a community. In this regard, the residents' perceptions are consistent with findings that show that respondents tend to over-estimate gambling's impact on pathological gambling in a community and also the casino industry's connection with organized crime. It appears that these faulty perceptions result in the attribution of causal links between a casino's presence and crime that do not generally exist, at least not to the degree that is commonly assumed by the public.

These findings are consistent with residents viewing casinos as "hot spots," where the routine activities lead at least some participants to engage in socially harmful behaviors. This view of casinos as generating deviant behavior is illustrated by the conclusions of the Attorney General of Maryland that, if casinos were legalized in the state, crime would rise "because of the crime-related problems of compulsive gamblers, the constant exposure of casino workers to substance abuse and other social ills, the pervasive availability of alcohol to casino patrons, and the growing problem of teenage gambling addictions" (Curran, 1995:E2-3).[34]

The casino industry's attempt to portray gaming as economically beneficial to a community and not socially injurious is not reflected in the attitudes of citizens of these new casino jurisdictions. Ironically, the views of the citizens are not generally substantiated by research, including the present study, that attempts to assess the

relationship of casinos to crime. Nevertheless, the common perception that casinos cause an increase in crime is a reality unto itself and is associated with an increase in fear of crime. This reality, as indicated by citizen's perceptions that crime increases as a result of casino presence, can easily be used by anti-gambling forces to thwart the further spread of casino gambling. At the same time, pro-gambling interests can point out that studies such as the present one show that the citizens' perceptions of crime increases are not accurate. The resolution of this conflict between citizen perceptions and objective research findings may hinge on the extent to which subjective reality is seen as more important than the objective one. Beyond shaping public policy, the practical significance of these misperceptions for the community is an empirical question in need of further research.

Findings Relating to Casino Presence to Community Perceptions and Quality of Life Issues

The analyses of community perceptions of effects of casinos so far has examined effects on social capital, perceptions of the extent of problem gambling and perceptions of the impacts casinos have or have not had on crime. These perceptual analyses bear on the effect, if any, that casinos have had on the subjective quality of life. Quality of life issues have been directly examined by assessing the effects that casino gambling has had on suicide, divorce, and bankruptcy, as measured by official data.

Problem Gambling

Although numerous studies have been conducted using sophisticated scales to assess pathological gambling, research is lacking which documents resident perceptions of problem gambling in new casino jurisdictions. The community perception is believed important since the decision whether or not to have various forms of legalized gambling frequently has been left to the populace to decide by referendum vote. There appears to be a trend not only to vote against legalized gambling in jurisdictions that do not have it, but also to roll back the tide of gambling in some jurisdictions which have previously embraced legalized gambling.

Through analysis of survey data, the current research will shed some light on perceptions of problem gambling by residents of communities that have recently legalized casino gambling. Moreover, the prevalence of problem gambling among friends and relatives will also be explored. The analysis will determine if perceptions are congruent with the findings of several recent large scale studies that utilized objective

criteria to determine the prevalence of problem gambling in a variety of settings. In addition, the current analysis will specify variables associated with heightened or lessened perceptions of problem gambling within the study communities.

Results

Of the 2,768 interviews, 1,616 or 58.4% were female and 1,152 or 41.6% were male. Since gambling and familiarity with gambling could have critical effects on perceptual differences between groups, a chi-square analysis was done to see if males and females differed in whether or not they gambled. The difference turned out to be small (44.1% of males and 46.2% of females gamble in casinos) and not statistically significant. Overall, 45.4% of the total sample report they gamble in local casinos and 54.6% report they do not. The mean age of the respondents was 50 years, while the median age was 47. The average educational level was midway between trade or technical school and some college measured on an ordinal scale. The average income level was in the $36,000-$50,000 range. When age, education, income and gender were correlated with whether or not the respondents gambled, age and income revealed correlations which achieve statistical significance. Though the correlations are small in magnitude, age was correlated at -.080 and significant at the .01 level and income was .066 and also significant at the .01 level. Of those who say they do gamble, the mean number of times within the last year they visited a casino to gamble was 14.78 and the median was 3.0. With a standard deviation of 42.27, it is obvious that the distribution is quite skewed. In fact, 3.4% of the sample reported 100 or more visits in the last year.

Turning next to an examination of the dependent variable indicators of the extent

of problem gambling in the community, some interesting results appear. When asked,

"Of the people in your community, what percentage do you estimate have gambling

problems?", 1132 respondents or 40.9% of the sample responded that they "don't know"

and 5 respondents, 0.2%, refused to answer. This left 1,631 who responded with an

estimate. Of those the mean response was that 16.01% of the community had

gambling problems. The median and modal responses were 10% and the standard

deviation was 19.23. This again indicates a skewed distribution. However, these

estimates are considerably higher than those made by experts in the field regarding

prevalence of problem gambling.[35] These data along with city by city data are

presented in Table 4.1. Analysis of the city comparisons indicates that the highest

estimates of problem gambling come from Sioux City respondents, whose average

estimate is 18.09%, while the lowest is from St. Louis County residents, whose mean is

10.63%.

Table 4.1

**Community by Community Summary Statistics for Respondents' Estimates of
Percentage of Their Communities That Have Gambling Problems**

Statistic	Alton	Biloxi	E. Peoria	Peoria	Sioux City	St. Joseph	St. Louis City	St. Louis County	Total
Mean	17.05	17.07	16.53	14.31	18.09	17.46	15.86	10.63	16.01
N	220	243	57	203	266	250	198	196	1631
Standard Deviation	18.58	21.64	21.62	16.86	18.15	19.35	21.33	16.45	19.23
Median	10.00	10.00	5.00	10.00	10.00	10.00	8.00	5.00	10.00

Subsequently, respondents were asked, "How many of your friends (not including

relatives) have developed a problem as a result of gambling?" The mean number of

friends reportedly having gambling problems were 1.49 (See Table 4.2).

Table 4.2

Community by Community Summary Statistics for Respondents' Estimates of Number of Friends Who Have Developed Gambling Problems

Statistic	Alton	Biloxi	E. Peoria	Peoria	Sioux City	St. Joseph	St. Louis City	St. Louis County	Total
Mean	1.28	2.32	1.63	1.17	1.94	1.44	1.11	0.93	1.49
N	386	384	95	295	382	391	341	323	2597
Standard Deviation	3.66	7.05	4.50	3.17	5.63	5.74	3.45	4.79	5.04
Median	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Of the 2,597 who responded to this question (163 said they did not know and 8

refused), 1,759 respondents or 67.7% of the sample responded "none." This left 667

respondents or 32.3% who had one or more friends with a gambling problem. Of the

677, 217 or 32.5% had three or more friends with gambling problems. The city by city

comparisons reveal that the highest mean response to number of friends having

gambling problems was Biloxi with a mean response of 2.32. The lowest average

number of friends with gambling problems was reported in St. Louis County as 0.93.

As might be expected, fewer respondents reported relatives with gambling

problems. Of the 2,690 who responded to this question, 2,187 or 81.3% reported no

relatives with gambling problems. The number of respondents reporting three or more

relatives with gambling problems was 127 or 3.3% of the sample. Table 4.3 shows the

city by city comparisons where respondents report on average 0.53 relatives who have

developed a gambling problem. This could be interpreted to mean that approximately

every other respondent has a relative with a gambling problem; however, due to the

skewedness of the distribution this is not the case. In fact, 81.3% of the sample report

knowing of no relatives who have developed a gambling problem. Turning to individual

cities, St. Louis City respondents reported the highest number of 0.72 relatives who

developed gambling problems and St Louis County respondents reported the lowest

with 0.30.

Table 4.3

Community by Community Summary Statistics for Respondents' Estimates of Number of Relatives Who Have Developed Gambling Problems

Statistic	Alton	Biloxi	E. Peoria	Peoria	Sioux City	St. Joseph	St. Louis City	St. Louis County	Total
Mean	0.46	0.67	0.39	0.55	0.61	0.44	0.72	0.30	0.53
N	398	390	98	305	404	408	352	335	2690
Standard Deviation	1.60	3.06	.88	3.15	1.94	1.90	2.81	1.25	2.29
Median	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The next step undertaken in the present analysis was to attempt to ascertain in a

comparative sense the relative predictive power of a number of factors which might be

related to perceptions of problem gambling in the community. To predict what

percentage of the community had a gambling problem, a multiple regression analysis

was done using age, education and gender of the respondent, the respondent's

household income, whether or not the respondent gambled, and agreement with a

number of attitudinal items related to gambling to predict the respondent's perception.

The attitudinal items included, "casinos operate in a law-abiding manner," "casinos

increase crime," "gambling is immoral," "casinos are connected to organized crime," and

"the community made the right choice legalizing gambling."

The results of this analysis appear in Table 4.4. Though the entire model has an adjusted R^2 of only .191 (sig. = .000), a number of the predictor variables are statistically significant. Respondent's age, gender, education and household income have standardized Beta coefficients of -.149, -.176, -.134 and -.138 respectively. All are statistically significant beyond the .001 level. This indicates that respondents who are younger, female, less educated, and have a lower income tend to perceive a greater percentage of the population with gambling problems. Those who agree that casinos are operated in a law-abiding manner are less likely to perceive higher percentages of the population with gambling problems (β = -.076, sig. = .029). Those who gamble themselves tend to perceive a higher percentage of problem gamblers (β = .081, sig. = .012) as do those who agree that casinos increase crime (β = .112, sig. = .002). Those who believe their community made the right choice legalizing casino gambling perceive lower percentages of problem gambling (β = -.111, sig. = .006). Believing that gambling is immoral or that casinos are connected to organized crime is positively related to perceptions of higher percentages of problem gamblers but is not statistically significant. It should be noted that in order to check for community differences dummy variable regression analysis was done controlling for community of residence, but the results yielded no significant effects.

Table 4.4

Multiple Regression Model Predicting Estimates of Percentage of the Community with a Gambling Problem (N=932)

Model	Adjusted R Square	F	B	Standardized Beta	t	Significance
What percentage of the community has a gambling problem?	.191	23.021***	(Constant) 44.777			
Education of Respondent			-1.641	-.134	-4.115	.000
Gender of Respondent			-6.552	-.176	-5.843	.000
Household Income			-1.769	-.138	-4.194	.000
Age of Respondent			-.199	-.149	-4.939	.000
Does respondent gamble?			3.023	.081	2.513	.012
Casinos operate in law-abiding manner			-3.673	-.076	-2.184	.029
Casinos increase crime			4.300	.112	3.096	.002
Gambling is immoral			2.125	.048	1.390	.165
Casinos are connected to organized crime			2.176	.058	1.600	.110
The community made the right choice legalizing casino gambling.			-1.803	-.111	-2.748	.006

The last model to be examined assumes the logic that perceptions at the community level are formulated based on awareness of similar phenomena at the more immediate or personal level. Table 4.5 contains the results of the utilization of the same variables included in the first model with the same dependent variable (perception of problem gambling in the community) with two additional independent variables added. These are numbers of friends and relatives who have developed a gambling problem. The assumption is that perceptions of greater prevalence of gambling problems in the community will increase as a function of familiarity with gambling problems among those with whom one more closely associates. Further, what might be termed the "close to

"home" hypothesis would predict that having relatives with gambling problems will have more effect than having friends with gambling problems, all things being equal.

Table 4.5

Multiple Regression Model Predicting Estimates of Percentage of the Community
with a Gambling Problem including Numbers of Friends and Relatives
with Gambling Problems (N=895)

Model	Adjusted R Square	F	B	Standardized Beta	t	Significance
What percentage of the community has a gambling problem?	.282	30.234***	(Constant) 40.196			
Education of Respondent			-1.354	-.110	-3.469	.001
Gender of Respondent			-6.992	-.187	-6.433	.000
Household Income			-1.799	-.140	-4.393	.000
Age of Respondent			-.184	-.135	-4.640	.000
Does respondent gamble?			2.446	.066	2.105	.036
Casinos operate in law-abiding manner			-2.985	-.061	-1.803	.072
Casinos increase crime			3.325	.085	2.480	.013
Gambling is immoral			1.895	.042	1.269	.205
Casinos are connected to organized crime			1.281	.034	.980	.327
The community made the right choice legalizing casino gambling.			-1.421	-.087	-2.238	.026
Number of friends who have developed a gambling problem			.666	.205	6.816	.000
Number of relatives who have developed a gambling problem			1.289	.158	5.246	.000

The results do indeed turn out as predicted. For this analysis the adjusted R^2 = .282 which is again significant at the .000 level. Education, gender, age and household income of the respondent remain virtually unaffected in both the direction of their predictive power and their levels of significance. The same holds true for whether or not the respondent gambles, the belief that casinos increase crime, and the belief that

the community made the right choice in legalizing casino gambling. The belief that casinos are operated in a law-abiding manner remains negatively related to the estimate of problem gambling but is no longer statistically significant, falling below the .05 level. Beliefs that gambling is immoral and that casinos are connected to organized crime are still positively related to the dependent variable but still do not achieve statistical significance. Number of friends and number of relatives who have developed a gambling problem, as predicted, are positively related to the percentage of the community believed to have a gambling problem. The standardized Beta coefficients for friends and relatives are .205 and .158 respectively. Both are significant beyond the .001 level. In line with the prediction of the importance of closeness of the relationship, the coefficients of .666 for friends and 1.289 for relatives with gambling problems reveal that having a relative with a gambling problem has twice the effect on perception of problem gambling in the community as having a friend with a gambling problem does. Thus, the "close to home" hypothesis is borne out.

Finally in order to check for possible community effects which could be contributing to the results, dummy variables for the various communities were added to the regression model but yielded no significant effects. There was no appreciable increase in the overall explained variance, nor did any of the community variables account for a significant portion of explained variance.

Discussion

As noted above, respondents' estimates of the percentage of citizens in their communities with gambling problems were quite high ($\bar{x} = 16.01$). The mean estimates are considerably greater than the figures given by Volberg (1996), Shaffer et al. (1997),

or those recently released by the National Gambling Impact Study Commission.[36] While it is unlikely that the average respondent would be familiar with the definition of pathological gambler provided by the American Psychiatric Association, the respondents were asked to give an estimate of problem gambling within their community. Although the definitions used by the respondents may differ, the estimates provide insight into their general views of gambling's impact on the individual and the wider community.

It should be noted that 40.9% of the present sample did not know or would not estimate what percentage of their community had gambling problems, of those who would provide an estimate, 55.8% were non-gamblers, while 44.2% were gamblers. In both of the multiple regression models predicting percentage of the community with gambling problems, whether or not the respondent gambled was positively related to the prevalence measure. This is consistent with the logic that those who gamble have a greater familiarity with and likelihood of associating with problem gamblers. At the same time, the finding goes contrary to the notion that those not familiar with the phenomena might have a more distorted image of gambling's consequences.

Next, though the city-by-city comparisons reveal differences between the communities in terms of respondents' estimates of prevalence, these differences do not manifest themselves as significant in the current analysis. Clearly, more elaborate analyses need to be undertaken to understand why these community differences exist and what implications they have for evaluating gambling's impact on communities.

When attempting to predict responses to the query about what percent of the community has a gambling problem, all of the demographic variables contributed

significantly to the explained variance. In separate analyses not reported here, none of the demographic variables are significant when predicting number of friends with gambling problems. However, when predicting number of relatives with gambling problems, the signs are negative and gender, income, and age are significant. This result suggests that when problem gambling occurs "close to home" it has a more salient effect on attitudes and beliefs. In fact the correlation between having relatives with gambling problems and the percentage estimate of problem gamblers in the community is .286 (sig. = .01) while the correlation between friends and percentage estimates is .274 (sig. = .01). Interestingly, the friends and relatives variables are not strongly collinear since their correlation is only .362 (sig. = .01). This relationship was further documented in the final regression model where friends and relatives with gambling problems proved significant predictors of the perception of problem gambling in the community, with relatives being more salient that friends as a predictor.

Responses to the questions examining attitudes related to casino gambling are generally in the predicted direction. That is, if respondents agree with the negative factors associated with gambling, they tend to perceive a higher amount of gambling problems in others. It should also be noted that there is a negative relationship between "Casinos operate in a law-abiding manner" and estimates of problem gambling in the community. It appears that if respondents perceive that casinos are operated in an illegal fashion, they believe the probability of problem gambling developing to be greater. However, 85% of the sample who responded (n = 2,454) agreed with the statement that casinos operate in a law-abiding manner, while only 15% disagreed.

The results of the present study suffer from the lack of data which could be used

for comparison purposes. It is unfortunate that there are not data from comparable non-casino jurisdictions which could be analyzed to provide a deeper understanding of the dynamics at work here.

Conclusion

The present study has been a first step toward understanding the factors that shape perceptions of problem gambling within a community. Data on three indicators of prevalence representing the community, friends, and relatives have been analyzed by background factors, whether or not respondents are gamblers themselves, and attitudes towards gambling's effect on the community. A significant finding was that perceptions of respondents regarding the extent of problem gambling in their communities far exceed the estimates generated by numerous studies using more objective assessment techniques.

The data support the notion that the more direct the impact that problem gambling has on the individual, the greater the effect on the perception of prevalence of problem gambling in the community. At the same time, the holding of negative attitudes about other aspects of casino gambling also is associated with the perception that there is a greater number of problem gamblers in the community. This result follows from cognitive consistency theory in social psychology which states that there is a pressure for cognitive elements, in this case ideas or attitudes, to be in agreement with one another.

The question remains, how accurate are these perceptions? As stated above, the estimates provided by the respondents are considerably higher than those provided by experts in the problem gambling field. It could be argued, however, that what

matters most is not what the actual number of problem gamblers really is, but what people believe the prevalence is. In other words, as the often quoted W.I. Thomas stated, "Situations perceived as real are real in their consequences".[37] Ultimately, people's behavior is determined by what they perceive, and currently the perception is that casinos cause a major problem relative to pathological gambling in new casino jurisdictions.

Suicide and Divorce

To analyze the impact that casino gambling has on the social fabric of a community, suicide and divorce rates in the eight casino communities were compared to the rates in the non-casino control communities.

The data on divorce are from two different sources. Data for the years 1979 through 1988 are from *Vital Statistics of the United States: Deaths, Marriages, and Divorce*. After 1988, the federal government ceased to collect data on divorce from the states. As a result, data from later years, 1989 through 1996, were obtained from Vital Records and Statistics Offices of the various states included in this study. The data on suicide are from the Center for Disease Control. Data for both suicide and divorce are annual and at the county level.

Table 4.6 contains results from comparing per capita divorce rates in casino communities with their respective control communities. In Alton and Peoria, Illinois, and St. Louis City and St. Joseph, Missouri, divorce rates in the casino communities decreased more than in the control communities. Moreover, all of the decreases are statistically significant, with the largest decrease, 39.4%, occurring in Alton, Illinois, the

community where gambling has been in effect the longest.

In the remaining four jurisdictions, divorce rates in the casino communities either increased (East Peoria and Biloxi) or declined less than the control communities (Sioux City and St. Louis County). However, only in East Peoria, Illinois, is the increase (12.3%) statistically significant.

In summary, while we will never know what divorce rates would have been in these communities had gambling not been legalized, the results based on a comparison with control groups suggest that no firm conclusions can be made. In half of the casino communities divorce rates decreased more than their control counterparts, whereas in the other half there was either a smaller decrease or an increase. These results suggest that statements proclaiming that casino gambling increases divorce should be viewed with caution.

However, statements that gambling has no effect must also be made with caution. The results presented here suggest that the cup may be half full or half empty, depending on how gambling is viewed.

Table 4.6: Divorce Per Capita (per 1,000 pop.), Casino and Control Jurisdictions

Jurisdictions	Divorce Per Capita (Pre Casino)	Divorce Per Capita (Post Casino)	Percent Change[a]
Sioux City, IA (Woodbury)	4.7176	4.5195	-4.2 (0.94)
Control	5.2948	4.9293	-6.9
Alton, IL (Madison)	4.4296	2.6859	-39.4*** (3.43)
Control	5.3158	4.7587	-10.5
Peoria, IL (Peoria)	5.3255	3.8034	-28.6** (2.70)
Control	5.8904	5.4885	-6.8
East Peoria, IL (Tazewell)	5.1869	5.8254	12.3*** (3.28)
Control	5.4169	5.0827	-6.2
St. Louis City, MO	3.9511	3.3255	-15.8** (2.83)
Control	5.0177	5.0480	0.6
St. Louis County, MO	4.5828	4.5357	-1.0 (1.17)
Control	3.8793	3.3492	-13.7
St. Joseph, MO	6.3539	5.3207	-16.3* (1.79)
Control	6.3009	6.0498	-4.0
Biloxi, MS	6.4717	7.4639	15.3 (1.16)
Control	6.7103	5.8992	-12.1

[a]Absolute value of the (two sample) t statistic in parentheses. Null hypothesis is that the difference in divorce per capita for casino jurisdictions is equal to divorce per capita for control jurisdictions.
A *, ** and *** represent significance at the 10%, 5%, and 1% level respectively.

Table 4.7 provides results from analyzing per capita suicide rates using similar analysis. Table 4.7 reveals that in six of the eight communities, per capita suicide rates in the casino communities either increased more or decreased less than their control counterparts. These communities are Sioux City, Iowa; Alton and East Peoria, Illinois; St. Louis City and St. Louis County, Missouri; and Biloxi, Mississippi. In the remaining two communities (Peoria, Illinois and St. Joseph, Missouri), the suicide rate decreased more in the casino communities.

The results from Table 4.7 provide stronger, but not absolute, evidence that casino gambling increases suicide. While there is an increase in six of the eight communities, that increase is only statistically significant in two of the six cases (Alton and Biloxi). In addition, while a decrease occurred in only two communities, the decrease was statistically significant in St. Joseph, Missouri.

Based on the findings of the present research, it is difficult to generalize about the effect of casino gambling on suicide and divorce. Casino communities tended to experience a greater decrease in divorce than in the control communities, whereas suicide showed the opposite effect. However, in examining both divorce and suicide, a few communities went against the general trend. What is apparent is that attempting to understand how casino gambling affects divorce and suicide in a community is not a simple matter and the effect of casinos on these phenomena does not lend itself to sweeping generalizations.

Table 4.7: Suicide Per Capita (per 1,000 pop.), Casino and Control Jurisdictions

Jurisdictions	Suicide Per Capita (Pre Casino)	Suicide Per Capita (Post Casino)	Percent Change[a]
Sioux City, IA (Woodbury)	0.1073	0.1112	3.6 (0.10)
Control	0.1160	0.1175	1.3
Alton, IL (Madison)	0.1219	0.1269	4.1* (1.95)
Control	0.1183	0.1030	-12.9
Peoria, IL (Peoria)	0.1208	0.1049	-13.16 (1.21)
Control	0.1066	0.1146	7.5
East Peoria, IL (Tazewell)	0.1026	0.1190	16.0 (1.25)
Control	0.1255	0.1173	-6.5
St. Louis City, MO	0.1404	0.1512	7.7 (0.30)
Control	0.1367	0.1432	4.8
St. Louis County, MO	0.1125	0.1105	-1.8 (0.71)
Control	0.1060	0.0973	-8.2
St. Joseph, MO	0.1373	0.1090	-20.6* (1.74)
Control	0.1186	0.1335	12.6
Biloxi, MS	0.1516	0.1950	28.6* (1.76)
Control	0.1189	0.1269	6.7

[a]Absolute value of the (two sample) t statistic in parentheses. Null hypothesis is that the difference in suicide per capita for casino jurisdictions is equal to suicide per capita for control jurisdictions.
A *, ** and *** represent significance at the 10%, 5%, and 1% level respectively.

Bankruptcy

Bankruptcy is another concern that arises when a community legalizes gambling. The basic argument is that problem gamblers will eventually fall into financial trouble, thereby increasing the likelihood and prevalence of bankruptcy. To determine the effect that casino gambling has on bankruptcy, we examine bankruptcy rates in our casino communities, comparing them with the matched set of control jurisdictions.

County-level data on personal bankruptcy, including Chapter 7 and Chapter 13 filings, were obtained from SMR Research Corporation. Quarterly observations on the total number of bankruptcies in each county are available for the fourth quarter of 1989 through the first quarter of 1998. Many studies that examine bankruptcy, including those listed above, use jurisdiction-level data provided by the U.S. Office of the Courts. These jurisdictions cross several counties and often cross state lines. The data set used for this study is unique in that it is at the county level. This enables us to obtain a clearer picture of how bankruptcy rates in communities (i.e., counties) change with the introduction of casino gambling.

The results from comparing bankruptcy per capita (per 1,000 population) for total, Chapter 7, and Chapter 13 bankruptcy petitions are provided in Tables 4.8 through 4.10. The tables report average bankruptcies per capita for the period prior to the casino opening (Pre Casino) and the period since the casino opened (Post Casino). The final column reports the percentage change in per capita bankruptcies and the t-statistic testing whether the change in the casino communities is statistically different than the change in the control jurisdictions.[38]

Table 4.8 reveals that in seven of the eight communities bankruptcies per capita increased more in the casino communities than in the control communities. Furthermore, in five of those seven counties the increase is statistically significant. This lends support, albeit not unanimous, to the hypothesis that the introduction of casino gambling leads to an increase in bankruptcy. It is interesting to note that the largest increase, 50.3%, occurred in Madison County, Illinois, where a casino has been located (in Alton) since September of 1991, longer than in any of the other jurisdictions. Moreover, Peoria and Tazewell counties, which also show significant increases, have had casinos in operation for the second longest period of time (November, 1991).

Table 4.8: Bankruptcy Per Capita (per 1,000 pop.), Casino and Control Jurisdictions

Jurisdictions	Bankruptcy Per Capita (Pre Casino)	Bankruptcy Per Capita (Post Casino)	Percent Change[a]
Sioux City, IA (Woodbury)	2.6178	3.4718	32.6* (1.85)
Control	2.7285	3.1898	16.9
Alton, IL (Madison)	2.7847	4.1844	50.3*** (2.59)
Control	3.6293	3.9689	9.4
Peoria, IL (Peoria)	3.8791	4.9463	27.5** (2.24)
Control	4.5918	4.8379	5.4
East Peoria, IL (Tazewell)	3.5844	4.3333	20.9** (2.47)
Control	3.0884	3.0674	-0.6
St. Louis City, MO (St. Louis City)	4.1019	6.0950	48.6 (0.18)
Control	5.2946	7.2092	36.2
St. Louis County, MO (St. Louis)	3.2017	4.3322	35.3*** (2.76)
Control	3.3306	3.6720	10.3
St. Joseph, MO (Buchanan)	2.2988	2.9388	27.8 (1.05)
Control	3.1678	3.5955	13.5
Biloxi, MS (Harrison)	5.7029	4.9627	-13.0*** (3.27)
Control	3.4446	3.8423	11.5

[a]Absolute value of the (two sample) t statistic in parentheses. Null hypothesis is that the change in the casino jurisdiction is equal to the change in the control jurisdiction or, equivalently, that the difference in the change in bankruptcies per capita between the casino and control jurisdictions is zero.
A *, ** and *** represent significance at the 10%, 5%, and 1% level respectively.

They are followed by Harrison County, Mississippi (Biloxi--August 1992), Woodbury County, Iowa (Sioux City--January 1993), St. Louis City and County, Missouri (May 1994), and Buchanan County, Missouri (St. Joseph--June 1994). Although more evidence would be required to make any firm conclusions, this does suggest a possible link between bankruptcy and the length of time a casino has been in place.

Harrison County, Mississippi (Biloxi) is the one exception to the increase in bankruptcy. There, bankruptcies have significantly declined since the introduction of casino gambling. This is noteworthy because of all of the jurisdictions examined, Biloxi is the only one that would qualify as a "destination resort". Destination resort casinos attract a greater percentage of their clientele from tourists or visitors, effectively exporting gambling. As a result, the economic benefits--job creation, tax revenue, spinoffs to other businesses--will be greater (Eadington, 1998).[39] In this type of environment, the creation of jobs and income may allow people to meet their financial obligations, outweighing any negative effects created by excessive gambling on the part of some individuals.[40]

Tables 4.9 and 4.10 provide results for Chapter 7 and Chapter 13 filings respectively. The distinction is important because Chapter 13 filings involve debt repayment plans as opposed to the nearly complete forgiveness of all admissible debt in Chapter 7 filings. The costs to society and debtors who regularly pay their debts is therefore greater under Chapter 7. If individuals become insolvent due to problem gambling, incurring debt that is beyond hope of being repaid, we expect the predominant increase to be in Chapter 7 filings.

Tables 4.9 and 4.10 reveal that the most significant increase has occurred with

Chapter 13 filings. In all jurisdictions where there is a statistically significant increase in bankruptcy, there is a corresponding significant increase in Chapter 13 filings. On the other hand, Chapter 7 filings significantly increase in only three counties. In Biloxi, a significant decrease in bankruptcy occurs among Chapter 13 but not Chapter 7 filings. While the overall increase is troubling, the increase in Chapter 13 filings suggests that the proportion involving repayment plans is increasing.

Table 4.9: Chapter 7 Bankruptcy Per Capita (per 1,000 pop.) Casino and Control Jurisdictions

Jurisdictions	Bankruptcy Per Capita (Pre Casino)	Bankruptcy Per Capita (Post Casino)	Percent Change[a]
Sioux City, IA (Woodbury)	2.5265	3.3478	32.5 (1.52)
Control	2.4407	2.9510	20.9
Alton, IL (Madison)	2.0946	2.7108	29.4 (1.24)
Control	2.7385	3.0047	9.7
Peoria, IL (Peoria)	3.3557	4.0119	19.6* (1.81)
Control	2.9188	3.1278	7.2
East Peoria, IL (Tazewell)	3.3170	3.6775	10.9* (1.83)
Control	2.4083	2.3903	-0.7
St. Louis City, MO (St. Louis City)	2.0021	3.0363	51.7 (0.08)
Control	4.0288	5.0430	25.2
St. Louis County, MO (St. Louis)	1.5297	2.1137	38.2*** (2.77)
Control	2.0716	2.2921	10.6
St. Joseph, MO (Buchanan)	2.1562	2.6802	24.3 (1.14)
Control	2.9103	3.2248	10.8
Biloxi, MS (Harrison)	3.6669	3.3939	-7.4 (1.70)
Control	1.3258	1.4872	12.2

[a]Absolute value of the (two sample) t statistic in parentheses. Null hypothesis is that the change in the casino jurisdiction is equal to the change in the control jurisdiction or, equivalently, that the difference in the change in bankruptcies per capita between the casino and control jurisdictions is zero.
A *, ** and *** represent significance at the 10%, 5%, and 1% level respectively.

Table 4.10: Chapter 13 Bankruptcy Per Capita (per 1,000 pop.) Casino and Control Jurisdictions

Jurisdictions	Bankruptcy Per Capita (Pre Casino)	Bankruptcy Per Capita (Post Casino)	Percent Change[a]
Sioux City, IA (Woodbury)	0.0913	0.1240	35.8*** (6.06)
Control	0.2861	0.2388	-16.5
Alton, IL (Madison)	0.6901	1.4731	113.5*** (4.95)
Control	0.8872	0.9629	8.5
Peoria, IL (Peoria)	0.5235	0.9344	78.5*** (2.81)
Control	1.6701	1.7084	2.3
East Peoria, IL (Tazewell)	0.2674	0.6558	145.3*** (3.32)
Control	0.6743	0.6763	0.3
St. Louis City, MO (St. Louis City)	2.0998	3.0587	45.7 (0.26)
Control	1.2614	2.1626	71.4
St. Louis County, MO (St. Louis)	1.6707	2.2168	32.7** (2.64)
Control	1.2527	1.3769	9.9
St. Joseph, MO (Buchanan)	0.1426	0.2586	81.3 (0.10)
Control	0.2557	0.3695	44.5
Biloxi, MS (Harrison)	2.0207	1.5645	-22.6*** (6.34)
Control	2.1141	2.3518	11.2

[a]Absolute value of the (two sample) t statistic in parentheses. Null hypothesis is that the change in the casino jurisdiction is equal to the change in the control jurisdiction or, equivalently, that the difference in the change in bankruptcies per capita between the casino and control jurisdictions is zero.
A *, ** and *** represent significance at the 10%, 5%, and 1% level respectively.

The greater increase in Chapter 13 runs counter to our expectations. One explanation for this result is that individuals with gambling problems seek treatment and stop gambling, thereby enabling the individual to repay debts given sufficient time to rebuild finances. Yet another possibility is that bankruptcy courts may not be willing to dismiss gambling debt if it is obtained fraudulently (i.e., the debtor has no intention of paying the creditor). Several decisions reflect the refusal of the court to discharge gambling debts based on fraud (e.g., *Eashai v. Citibank South Dakota* and *Citibank South Dakota v. Ardet*, cited in Depperschmidt and Kratzke, 1997).[41] If an individual expects gambling and other debts not to be discharged, or is uncertain about the probability of their discharge, filing Chapter 13 may be a rational means of "buying time" to repay creditors.[42] Without more detailed information on the individuals and their reason for filing, it is impossible to know for certain why the predominant increase has occurred in Chapter 13 filings.

A means of comparing the overall effect that casinos have on gambling is available through the Wilcoxon Rank Sum Test (RST) under the null that the percentage change in per capita bankruptcy rates for casino and control jurisdictions come from the same probability distribution. In constructing the RST, both the casino and control communities are pooled and ranked in ascending order based on the percentage change in bankruptcies. If the two populations are identical, we would expect the rankings to be randomly distributed between the two samples. However, if casinos lower bankruptcy, the rankings of the casino sample should be relatively small, whereas if casinos increase bankruptcy the rankings should be relatively large.

Table 4.11 contains results from the RST. The rankings of the casino and control

samples are summed and compared to a lower or upper critical value to determine significance (McClave and Dietrich, 1985, p. 792).[43] At the 5% level of significance, the lower value, T_L, equals 49 while the upper value, T_U, equals 87. At the 10% level of significance $T_L = 52$ and $T_U = 84$. With equal sample sizes, the rank sum for either the casino or control communities can be used. So, if the rank sum of the casino counties is greater than or equal to 87 (or less than or equal to 49), we can say with 95% confidence that the probability distributions for casino and control communities are not identical. As seen in Table 4.11, the rank sum for casino counties for both total and Chapter 13 bankruptcy filings is 87, whereas the rank sum for Chapter 7 is 86. The probability distributions between casino and control communities are clearly not identical. Furthermore, given the cluster of large rankings, it appears that casino communities are associated with growing rates of bankruptcy.

Table 4.11: Wilcoxon Rank Sum Test for Percentage Change in Per Capita Bankruptcy Filings

Casino Jurisdictions	Total % Change	Rank	Chapter 7 % Change	Rank	Chapter 13 % Change	Rank
Sioux City, IA (Woodbury)	32.6	12	32.5	14	35.8	9
Alton, IL (Madison)	50.3	16	29.4	13	113.5	15
Peoria, IL (Peoria)	27.5	10	19.6	9	78.5	13
East Peoria, IL (Tazewell)	20.9	9	10.9	7	145.3	16
St. Louis City, MO	48.6	15	51.7	16	45.7	11
St. Louis County, MO	35.3	13	38.2	15	32.7	8
St. Joseph, MO (Buchanan)	27.8	11	24.3	11	81.3	14
Biloxi, MS (Harrison)	-13.0	1	-7.4	1	-22.6	1
Rank Sum		87**		86*		87**

Control Jurisdictions	Total % Change	Rank	Chapter 7 % Change	Rank	Chapter 13 % Change	Rank
Control--Sioux City	16.9	8	20.9	10	-16.5	2
Control--Alton	9.4	4	9.7	4	8.5	5
Control--Peoria	5.4	3	7.2	3	2.3	4
Control--East Peoria	-0.6	2	-0.7	2	0.3	3
Control--St. Louis City	36.2	14	25.2	12	71.4	12
Control--St. Louis County	10.3	5	10.6	5	9.9	6
Control--St. Joseph	13.5	7	10.8	6	44.5	10
Control--Biloxi	11.5	6	12.2	8	11.2	7
Rank Sum		49		50		49

H_o: Percentage change in bankruptcies between casino and control communities have the same probability distribution.
H_a: Probability distribution for percentage change in bankruptcies for casino communities is shifted higher or lower than probability distribution for control communities.
A * and ** and represent significance at the 10% and 5% level respectively.

Finally, the analysis in Tables 4.8 through 4.11 was repeated when the post-casino date is one year later than the actual opening date. This was done to allow for the possibility that some insolvents may have begun the bankruptcy process prior to the opening of the casino, but not completed it until after the casino opened. If a significant number of bankruptcies were filed during this period, our results may be sensitive to the time period chosen to divide pre and post casino observations. Of course, lagging the post-casino period also introduces the possibility of counting post-casino bankruptcies as pre-casino bankruptcies. Nevertheless, it provides a conservative estimate of the impact that casino gambling has on bankruptcies and ensures the robustness of our results.

In general, lagging the post-casino period does not change our conclusions. Total bankruptcies still increase in seven of the eight jurisdictions. The increase is statistically significant in four of the seven cases (the t statistic for Sioux City falls to 1.34, and is no longer statistically significant). The results for Chapter 7 and Chapter 13 are qualitatively identical. Moreover, repeating the RST for total, Chapter 7 and Chapter 13 bankruptcies resulted in rank sums of 84, 80, and 86. With the exception of Chapter 7, these are all significant at the 10% level. Overall, the results reported in Tables 4.8 through 4.11 appear to be robust to the date dividing pre and post casino time periods.

Perhaps the more interesting case for policy makers is Biloxi, Mississippi, where bankruptcy rates significantly declined. Biloxi shows that casino gambling need not inevitably lead to higher bankruptcy rates. More specifically, it supports the theory postulated by Eadington (1998) that the economic benefits associated with casino gambling are likely to be greatest when casinos are built in a destination resort

environment as opposed to an urban setting.[44] Of all of the communities included in this study, Biloxi is the only community with multiple casinos and the only one that would be characterized as a destination that tourists would travel to in order to gamble. In this type of environment, the economic benefits from casino gambling are greater and more likely to exceed the social costs. The creation of jobs and income is likely to be much greater when tourist dollars are infused into an economy as opposed to a recirculation of dollars in an urban environment where the majority of casino customers are from the immediate area.

The findings above do suggest a positive correlation between casino gambling and consumer bankruptcy. Nevertheless, research into this issue is still in its infancy and more is needed. For example, other communities with casino gambling should be examined to see if the results found here generalize. A further investigation between urban and destination resort casinos would also be useful.

Lastly, if communities are going to adopt casino gambling, policies to minimize gambling's impact on bankruptcy should be explored. One policy being considered by states such as Iowa and by the National Gambling Impact Study Commission is the removal of automatic teller machines and credit card cash advance machines from casinos. Opponents of the placement of these machines in casinos argue that they make cash too readily available, causing gamblers, and problem gamblers in particular, to spend more than they originally intended. Proponents argue that the placement of cash machines is merely good business practice and a convenience factor for the large majority of customers without a gambling problem. More analysis of this debate focusing on who withdraws money, how much is withdrawn, what if any problems it

creates, and whether it was a significant factor in rising bankruptcies appears warranted.

Social Capital

Recent attention has been focused on citizen connection to their neighborhood and community. In particular, politicians and academics alike have suggested that strong citizen connection is paramount for the development and promotion of strong morals and values. These "networks of human interactions and social ties" (e.g., social fabric) (Gusfield, 1975, p.xvi), encompasses the organic qualities of community (e.g., mutual trust and shared values).[45] It has been suggested elsewhere that social capital (i.e., networks of shared norms and trust), is essential to a tightly woven social fabric; that is, higher levels of social capital, which is characterized by strong interpersonal connections and high levels of social trust, strengthens the social fabric (see Putnam, 1995; Coleman, 1988).[46]

To assess the influence of gambling on various measures of social capital, OLS regression was employed. More specifically, two models were created. The first model assessed the influence that gambling has on social capital and the second model assessed the influence that gambling behavior had on social capital.

The variables used to measure community processes and characteristics are those identified as valid and reliable indicators in previous studies (Correia, 2000).[47] The first measures, *satisfaction with neighborhood* and *community wellbeing*, assessed whether satisfaction with their neighborhood or the livability of the community had changed since the onset of gambling and ranged from a "worse place to live" to "a better place to live".

With empirical research suggesting that high levels neighboring behavior are related to high levels of a sense of community, *neighborly behavior* was included in the survey (Putnam, 1995a; Unger and Wandersman, 1982).[48] Specifically, this variable measured any changes since the gambling was introduced into the community. This three point Likert scale ranged from "decreased" to "increased".

The concept of social capital entails, to a large degree, the level of trust one holds for their neighbors and government officials. Hence, the measures *trust in neighbors* and *trust in government* were included in these analyses. The responses to these variables ranged from "less" trust to "more" trust since the introduction of casino gambling.

In order to provide a more reliable measure, the above items were combined into a scale measuring social capital. This scaled ranged from low levels of social capital "1" to high levels of social capital "15" (see Table 4.12).

Table 4.12 Variable Coding		
Variable	**Category**	**Values**
Dependent		
Social Cohesion		1-15
Independent		
Gender.	male	1
	female	0
Age	25-34	1
	35-50	2
	51-65	3
	66+	4
Income	>20,000	1
	20,001-36,000	2
	36,001-50,000	3
	50,001-75,000	4
	75,001-100,000	5
	<100,000	6
Education	Grade School	1
	Some high school	2
	High school	3
	Trade/tech school	4
	Associates	5
	Bachelor's	6
	Master's	7
	Doctorate	8
Gambling good		
for community	Yes	1
	No	0
Do you gamble	Yes	1
	No	0
Gambling frequency		
		0-777

Two independent variables were included to assess whether or not individuals who gambled or the frequency of gambling affected an individuals level of social capital. The variable *gambling* was dichotomous, with the responses "yes" and "no". *Frequency of gambling* ranged from "0" times to "777" times in the past year. In addition to the

variables assessing gambling, numerous demographic variables were also included (see Table 4.12).

In order to assess the effects of the independent variables on the measures of social capital and sense of community, separate analyses were conducted for each model. Described below are the results from each of these analyses.

Model 1

Results from model 1 are presented in Table 4.13. The variable, *gambling good for the community*, was highly significant in all eight cities. Specifically, these variables were positively related with increases in the perceptions of the effects of gambling on the community, influencing increases in overall social cohesion. This finding is significant, considering the "common sense" notion of the deleterious effects of gambling. The other gambling-related variable, *do you gamble*, only showed to be significant in three of the cities: Biloxi, St. Louis City, and East Peoria (p≤.05). In all three cases, those who gambled had higher levels of social cohesion. There was no consistency in the effects of the demographic variables across the cities. Gender was only significant in one city (Biloxi, p≤.05), with males having higher levels of social cohesion and income was highly significant in Alton (p≤.01) and Peoria (p≤.000). Both of these findings are consistent with the literature.

Though *level of education* was only significant in Peoria (p≤.05), the direction of the relationship was not expected. Most studies have found that individuals with higher levels of education tend to have higher levels of social cohesion. In this case, however, lower levels of education were indicators of higher levels of social cohesion.

Taken as a whole, the findings in this model suggest that gambling increases levels

of social cohesion, a finding that is not supported by common assertion.

Table 4.13: Summary of Results for OLS Regression Assessing Impacts of Gambling on Social Cohesion

	City 1 b(t ratio)	City 2 b(t ratio)	City 3 b(t ratio)	City 4 b(t ratio)	City 5 b(t ratio)	City 6 b(t ratio)	City 7 b(t ratio)	City 8
Gender	.100(2.049)*	-	-	-	—	-	—	-
Age	-	-	—	-	—	—	-	-
Income	—	.154(2.862)**	-	—	—	—	.286(4.032)***	-
Education	-.090(-1.679)	—	—	—	—	—	-.142(-2.070)*	-
Gambling good for community	.505(9.739)***	.503(9.167)***	.398(7.144)***	.350(6.023)***	.255(3.671)***	.403(3.176)**	.339(5.105)***	.364(5.225)***
Do you gamble	.102(1.979)*	—	-	-	.124(2.233)*	.122(2.097)*	—	-
N								
R^2	.336	.332	.201	.156	.129	.196	.235	.160

Missing data are excluded from these analyses.
*p<.05, **p<.01, ***p<.000

Model 2

Findings in the second model, *gambling behavior*, are similar to those in the previous model. Results are provided in Table 4.14. The variable *gambling good for the community*, was highly significant across all eight cities. This lends support to the above finding that perceptions of the effects of gambling may not be has harmful as previously thought. Similarly, *frequency of gambling*, was significant only in Biloxi ($p \leq .05$). The lack of significance in the other cities may suggest that increases in gambling may not affect levels of social cohesion.

As found in the previous model, the effects of the demographic variables were inconsistent. Specifically, *gender* was found to be significant in Alton and Peoria ($p \leq .05$), *income* was significant in Biloxi ($p \leq .05$), Alton ($p \leq .05$), and Peoria ($p \leq .000$). Lastly, in East Peoria, *levels of education* had a positive influence on social cohesion ($p \leq .05$), while in Peoria, the relationship was negative ($p \leq .01$).

The most notable variable in these two models is the significance of the variable, *gambling is good for the community*. Across all the cities, this variable showed to be highly significant, suggesting that citizen perception is that gambling increases the level of social cohesion.

Discussion

Politicians and various segments of American society have recently focused their attention on legalized gambling. More specifically, claims have been made that legalized gambling is detrimental to both the individual and the community where it exists. The present research addresses the effect which legalized gambling has on levels of social capital and sense of community.

Table 4.14: Summary of Results for OLS Regression Assessing Impacts of Gambling Behavior on Social Cohesion

	City 1 b(t ratio)	City 2 b(t ratio)	City 3 b(t ratio)	City 4 b(t ratio)	City 5 b(t ratio)	City 6 b(t ratio)	City 7 b(t ratio)	City 8
Gender	—	.188(2.118)*	-	-	-	-	.162(1.717)*	—
Age	-	-	—	-	—	—	-	-
Income	.180(2.31)*	.212(2.318)*	-	—	—	—	.555(5.059)***	-
Education	—	—	—	—	—	.406(2.071)*	-.399(-3.603)**	-
Gambling good for community	.408(6.360)***	.383(4.547)***	.358(4.480)***	.350(4.273)***	.261(2.665)***	.779(4.349)**	.246(2.754)**	.378(3.426)**
Frequency of gambling	.129(2.034)*	—	-	-	-	—	-	
N								
R^2	.219	.199	.120	.099	.164	.314	.359	.083

Missing data are excluded from these analyses.
*p<.05, **p<.01, ***p<.000

Before possible conclusions are discussed, it is important to note a few limitations of this research. First, this study is cross-sectional, which limits our ability to assess the causal relationship between gambling and increases or decreases in social capital and sense of community. Secondly, since very few studies have been conducted on this topic, it is possible that some important variables were inadvertently omitted from the present analysis—a potential shortcoming that future research on social capital may possibly uncover. Nevertheless, the preceding analysis provides a fair assemblage of information that increases our understanding of the relationship between legalized gambling, social capital and sense of community.

Though few studies have been conducted on the impact that legalized gambling has on an individual's connection to his/her community, findings from this research tend to contradict previous studies and common assumptions. Primarily, though many contend that legalized gambling tears at the fabric of our communities, our data do not support that assertion. In fact, overwhelmingly, the findings suggest that those individuals that felt that gambling was good for their community, also felt that it increased social cohesion. More specifically, the perception of the respondents was that legalized gambling has increased one's trust in their neighbors, their social interaction with their neighbors, their satisfaction in their neighborhood, their trust in local government, and lastly, the overall well-being of their community.

All of these indicators are important determinates of one's attachment to her community as well as one's level of social capital. Though this finding makes sense for those who gamble, it is less so for those who do not gamble. A possible explanation for this may be that on a daily basis, individuals may not give particular attention to

gambling. That is, gambling may not predominate their daily lives, therefore, they do not consider it a negative influence in their community.

Taken as a whole, this study highlights the importance of basing public policy on social science research. While many politicians and citizen groups have argued that legalized gambling is detrimental to our communities, our research suggests that this may not be the case. In fact, it may be that legalized gambling, though viewed by many as detrimental, has a positive effect on our attachment to our communities.

Quality of Life

Using the survey data described above, we also examine the impact that casinos have on quality of life. In particular, five questions are examined in this analysis relative to how casinos affect quality of life in new casino communities. They are the following:

> *"What effect do you think the presence of casinos has had on the amount of crime in your community? Would you say casino gambling has caused an increase, decrease, or has had no effect at all?"*

> *"Since the introduction of casinos in your community, has the fear of crime, increased, decreased or stayed about the same?"*

> *"Since the introduction of casinos in your community, has the standard of living, increased, decreased or stayed about the same?"*

> *"Since the introduction of casino gambling, is your community a better place to live, a worse place to live, or is it about the same?"*

> *"With regard to the quality of family life, do you think casino gambling has caused a large increase, a moderate increase, a small increase, no change at all, or a small decrease, moderate decrease, or a large decrease?"*

Results

Given the five indicators of various facets of the multidimensional concept, quality of life, the first step was to assess whether the respondents varied in their responses to these questions. A cursory review of the frequency distributions of responses indicated that there was sufficient variation to investigate all of these indicators separately. For example, 31.8% of the respondents perceived an increase in crime since the advent of casinos, while 1.8% perceived a decrease and 66.5% felt there was no effect. Regarding fear of crime, 24.9% perceived an increase, 4.3% perceived a decrease and 70.8% felt fear of crime remained about the same. For standard of living, 25.3% felt there was an increase after the advent of casinos, 5.6% perceived there was a decrease and 69.2% felt the standard of living was about the same. For the question of whether the community was a better or worse place to live, 17.5% felt it was better, 13.3% felt it was worse and 69.2% believed it remained about the same. In all four instances the majority of respondents felt that casinos made no difference. At the same time, there were clearly those who felt there was a difference. The question assessing perceptions of changes if any in quality of life revealed more subtle differences due to a greater sensitivity of the response categories where increases or decreases were graded in terms of large, moderate or small increases or decrease. These responses are summarized in the column totals in Table 4.19.

Due to the differences in communities and their reliance on casinos as contributors to their economies and life styles it is logical to check for community differences in impacts that casinos might have had on quality of life. Tables 4.15-4.19

present the results of cross-tabular analysis between the quality of life indicators and the respective casino jurisdictions.

The results indicating perceived increase or decrease in crime since the advent of casinos in the various jurisdictions is presented in Table 4.15. The Chi Square statistic of 175.59 (p < .001) indicates that indeed there are significant differences by community in the perceptions of changes in crime prevalence. The greatest increase was seen in Biloxi where 54.1% of the respondents perceived an increase in crime. The second highest increase was for Sioux City were 39.6% of the respondents felt there was an increase. The remaining communities perceived increases of 21.8% for Alton to 34.9% for East Peoria. Interestingly it was also Biloxi where the greatest decrease was felt (3.9%). Alton respondents perceived a 3.6% decrease and the remaining communities show considerably smaller perceived decreases. As indicated previously, most respondents perceived no effect at all.

The results in Table 4.16 show respondents perceptions of an increase or decrease in fear of crime in the community. The results again show significant differences between communities (χ^2 = 101.74, p < .001). Here, as for perceived prevalence of crime, more Biloxi respondents perceive an increase in fear of crime than any other jurisdiction (38.6%). Sioux City is again second highest with 31.1% perceiving an increase. The greatest decrease is also perceived in Biloxi (7.6%), with the second highest decrease being in St. Louis County (6.1%). More so than for perceived prevalence of crime, the respondents tended to perceive fear of crime to not be affected by casino presence.

Table 4.15
Numbers and Percentages of Respondents From the Various Communities
That Perceived Differences in The Amount of Crime Since
The Introduction of Casinos

Jurisdiction	Since the introduction of casinos in your community, has the amount of crime.....			Total
	Decreased	No Effect at all	Increased	
Biloxi	15 3.9%	160 42.0%	206 54.1%	381 100.0%
Alton	13 3.6%	266 74.5%	78 21.8%	357 100.0%
St. Joseph	3 .8%	293 76.9%	85 22.3%	381 100.0%
Sioux City	2 .5%	218 59.9%	144 39.6%	364 100.0%
St. Louis City	2 .6%	232 74.6%	77 24.8%	311 100.0%
St. Louis County	5 1.7%	223 73.6%	75 24.8%	303 100.0%
East Peoria	1 1.2%	53 63.9%	29 34.9%	83 100.0%
Peoria	3 1.0%	194 67.8%	89 31.1%	286 100.0%
Total	44 1.8%	1639 66.5%	783 31.8%	2466 100.0%

$\chi^2 = 175.59 \; p < .001$

Table 4.16
Numbers and Percentages of Respondents From the Various Communities
That Perceived Differences in The Fear of Crime Since
The Introduction of Casinos

Jurisdiction	Since the introduction of casinos in your community, has fear of crime.....			Total
	Decreased	Stayed About the Same	Increased	
Biloxi	29 7.6%	206 53.8%	148 38.6%	383 100.0%
Alton	15 3.9%	273 70.9%	97 25.2%	385 100.0%
St. Joseph	16 4.0%	308 76.4%	79 19.6%	403 100.0%
Sioux City	8 2.0%	262 66.8%	122 31.1%	392 100.0%
St. Louis City	18 5.3%	268 78.4%	56 16.4%	342 100.0%
St. Louis County	20 6.1%	248 75.6%	60 18.3%	328 100.0%
East Peoria	1 1.0%	75 77.3%	21 21.6%	97 100.0%
Peoria	7 2.3%	221 73.9%	71 23.7%	299 100.0%
Total	114 4.3%	1861 70.8%	654 24.9%	2629 100.0%

$\chi^2 = 101.74$ p < .001

Table 4.17 presents the results for perceived increase or decrease in the standard of living since the advent of casinos. Again, differences between communities are statistically significant (x^2 = 823.52, p < .001). Here, far and away, the greatest perceived increase occurred in Biloxi where 81.5% of the respondents reported an increase. The second highest increase was 23.6% of the respondents from Alton. Decreases in perceived standard of living tend to be few, varying from a high of 7.2% for respondents from St. Joseph to 3.8% for Biloxi. Clearly Biloxi stands out as being substantially different from all of the other communities on this measure of quality of life.

Community comparisons for whether the community is a better or worse place to live since the introduction of casinos appear in Table 4.18. Here the findings are also statistically significant with the Chi Square being x^2 = 669.48 (p < .001). Biloxi again stands out with 54.8% of respondents reporting that it is now a better place to live. Next came Alton, where 30.7% responded that it is a better place to live, followed by Peoria, where 20.2% said it is a better place to live. Respondents saying that their communities were now worse places to live varied from a high of 19.5% for Biloxi to a low of 9.3% for both Alton and St. Louis City. Again Biloxi differs considerably from the other communities.

The next step is to analyze the differences, if any, which may exist between communities regarding perceived quality of family life. The results bearing on this question appear in Table 4.19. The Chi Square results x^2 = 132.58 (p < .001) again reveal significant difference between the communities. Once more, Biloxi stands out as being the most impacted of all communities as a result of the advent of casinos.

Combining the small, medium and large increase columns, 45.3% of Biloxi respondents reported an increase in quality of family life. The next largest combined increase is for Sioux City where 32.1% reported increases. The largest reported decreases were also from Sioux City where 32.0% indicated a decrease in the quality of family life. Close behind were St. Louis County with 31.3%, Peoria with 29.9% and East Peoria with 29.4% reported decreases. Biloxi had the second lowest percentage of respondents reporting a decrease in quality of family life, with 21.5%.

Table 4.17
Numbers and Percentages of Respondents From the Various Communities
That Perceived Differences in The Standard of Living Since
The Introduction of Casinos

Jurisdiction	Since the introduction of casinos in your community, has the standard of living.....			Total
	Decreased	Stayed About the Same	Increased	
Biloxi	15 3.8%	58 14.7%	322 81.5%	395 100.0%
Alton	23 6.0%	271 70.4%	91 23.6%	385 100.0%
St. Joseph	29 7.2%	330 82.3%	42 10.5%	401 100.0%
Sioux City	26 6.5%	300 75.2%	73 18.3%	399 100.0%
St. Louis City	17 4.9	300 86.7%	29 8.4%	346 100.0%
St. Louis County	13 4.0%	274 83.5%	41 12.5%	328 100.0%
East Peoria	5 5.2%	71 74.0%	20 20.8%	96 100.0%
Peoria	20 6.7%	228 76.3%	51 17.1%	299 100.0%
Total	148 5.6%	1832 69.2%	669 25.3%	2649 100.0%

$\chi^2 = 823.51$ p < .001

Table 4.18
Numbers and Percentages of Respondents From the Various Communities
That Perceived Differences in The Community as A Place to Live Since
The Introduction of Casinos

Jurisdiction	Since the introduction of casinos in your community, is your community.....			Total
	A Worse Place to Live	Stayed About the Same	A Better Place to Live	
Biloxi	77 19.5%	101 25.6%	216 54.8%	394 100.0%
Alton	37 9.3%	239 60.1%	122 30.7%	398 100.0%
St. Joseph	42 10.1%	344 82.5%	31 7.4%	417 100.0%
Sioux City	71 17.6%	302 74.9%	30 7.4%	403 100.0%
St. Louis City	33 9.3%	308 86.8%	14 3.9%	355 100.0%
St. Louis County	42 12.4%	283 83.5%	14 4.1%	339 100.0%
East Peoria	11 11.1%	68 68.7%	20 20.2%	99 100.0%
Peoria	48 15.5%	233 75.4%	28 9.1%	309 100.0%
Total	361 13.3%	1878 69.2%	475 17.5%	2714 100.0%

$\chi^2 = 669.48$ p < .001

Table 4.19
Quality of Family Life Estimates for Respondents From The Various Communities

Jurisdiction	With Regard to the Quality of Family Life, Do You Think Casino Gambling Has Causes a				
	Large Decrease	Moderate Decrease	Small Decrease	No Change At All	Small Increase
Biloxi	18 4.9%	32 8.7%	29 7.9%	123 33.3%	48 13.0%
Alton	17 4.7%	39 10.8%	44 12.2%	181 50.0%	37 10.2%
St. Joseph	17 4.3%	26 6.6%	39 9.9%	206 52.3%	40 10.2%
Sioux City	31 7.9%	38 9.7%	80 20.4%	118 30.0%	58 14.8%
St. Louis City	23 6.7%	27 7.8%	35 10.2%	155 45.1%	40 11.6%
E. Peoria	6 6.3%	10 10.5%	12 12.6%	41 43.2%	9 9.5%
Peoria	11 3.7%	35 11.9%	42 14.3	130 44.2%	35 11.9%
St. Louis County	14 4.5%	26 8.4%	57 18.4%	154 49.7%	22 7.1%
Total	137 5.3%	233 9.1%	338 13.2%	1108 43.3%	289 11.3%

$\chi^2 = 132.58 \quad p < .001$

Discussion

First of all, for the prevalence of crime, fear of crime, standard of living, and whether the community is a better or worse place to live measures, the overall consensus was that casinos had no effect at all. There were, however, significant numbers of respondents who perceived there were differences, one way or the other. Those who perceived changes tended to perceive an increase in crime and fear of crime. This, in spite of the fact that for many crimes, according to police statistics, there either was no statistically significant increase or there was, in fact, a significant decrease (Stitt, et al., forthcoming).[49] Whether citizens who perceive an increase explicitly blame casinos for the increase they perceive cannot be determined given the wording of the questions. Regardless, there are, no doubt, those who do. Finally, relative to the crime indicators, the likely reason for Biloxi to stand out as having the greatest increase in prevalence and fear of crime is that it has seen the greatest increase according to official statistics (Stitt, et al., forthcoming).[50] This is likely due to the tremendous number of tourists attracted to Biloxi as it has become a major gambling resort. Whether crime increases are directly related to casinos or whether they are a tourist effect has yet to be determined.

For the other quality of life indicators, standard of living and the kind of place the community is to live, there tended to be considerable more agreement that the community stayed about the same, with the exception of Biloxi. However, for a significant number of respondents from each community the standard of living was seen to have improved. This was likely due to the economic benefits that casinos brought to

communities in terms of creating new jobs, contributing tax dollars to community coffers, and strengthening the economies in numerous ways. The same applied to whether or not the community was a better place to live. Here also, some of the economic benefits of casinos likely contributed to this belief. At the same time, items like economic redevelopment and strengthening of the communities infrastructure from tax revenue probably contributed significantly to this perception. For both of these indicators Biloxi, Alton and East Peoria ranked first, second and third in terms of perceived improvement. That fact that Biloxi residents perceive so much greater improvement is likely due to the fact that Biloxi has risen from being a Gulf Coast town with minor tourist appeal to a major tourist attraction bringing in millions of dollars a year and achieving a level of prosperity never imagined. Alton and East Peoria residents are probably more positively effected by the casino presence given there small size and the fact that their single casinos create a larger relative impact than that felt in the larger communities.

Impacts of casinos on quality of family life are harder to interpret. Overall there is less consensus that casinos have no effect. In fact, overall the respondents are fairly evenly divided between decreases and increases in quality of family life. Again, Biloxi stands out as seemingly benefitted most in the area of improvement of quality of family life. Sioux City stands out as being the community most polarized in its citizens' perceptions of casino effects on quality of life. The only reason the researchers can give to account for this polarization is gleaned from interviews done with community leaders where a number suggested significant controversy existed when the community debated bringing casinos in and that there was significant opposition on moral grounds (Giacopassi, et al., 1999).[51] Thus, what may exist is two groups, those who oppose

casinos for traditional, moral and family related reasons and those who see the benefits that casinos have brought which have directly or indirectly impacted families in a positive way.

Community Satisfaction

Four questions are examined to determine community satisfaction with casino gambling in their communities. They are the following:

"In balance, casinos are good for a community (agree, disagree, don't know)."

"Since the introduction of casino gambling, is your community, a better place to live, a worse place to live, or is it about the same?"

"The community made the right choice when it legalized casino gambling (strongly disagree, somewhat disagree, somewhat agree, strongly agree)."

"What kind of effects, if any, did you expect casino gambling to have on your community (negative effect, no effect at all, positive effect)?"

Results

Responses to the question, "In balance, casinos are good for a community (agree, disagree, don't know)" appear in Table 4.20. Here we see that overall respondents were divided in their assessment of whether casinos were good for communities with 1,229 or 49.3% of respondents disagreeing and 1,265 or 50.7% agreeing that casinos were good for a community. Additionally, of the total sample of 2,768, 254 or 9.2 % indicated that they didn't know and 20 or 0.7% refused to answer.

However, when comparisons are made between jurisdictions, significant differences are found. The Chi Square statistic for the between community comparison

Table 4.20
Whether or Not Casinos are Good for a Community by Jurisdiction

In balance, casinos are good for a community.	CITY								
	BILOXI	ALTON	ST. JOSEPH	SIOUX CITY	ST. LOUIS CITY	EAST PEORIA	PEORIA	ST. LOUIS COUNTY	TOTAL
DISAGREE	97 25.9%	159 43.7%	175 45.6%	237 62.5%	177 55.5%	61 65.6%	157 53.6%	166 57.6%	1229 49.3%
AGREE	277 74.1%	205 56.3%	209 54.4%	142 37.5%	142 44.5%	32 34.4%	136 46.4%	122 42.4%	1265 50.7%
Total[1]	374 100.0%	364 100.0%	384 100.0%	379 100.0%	319 100.0%	93 100.0%	293 100.0%	288 100.0%	2494 100.0%

[1] Only those responses for those who choose to answer the question are included in the table. The total number of respondents was 2768. Of those 254 or 9.2% said they did not know and 20 or 0.7% refused to answer.

$X^2 = 139.89$ $p < .001$

is 139.89 (p < .001). Residents of Biloxi seem to strongly favor casinos as being good

for a community with 74.1% agreeing and 25.9% disagreeing. At the other extreme,

residents of East Peoria and Sioux City tended to feel the opposite, with 65.6% and

62.5% respectively believing that casinos are not good for a community, while 34.4%

and 37.5% agree that casinos are good. The other communities do not show the

degrees of difference that these three do, but overall, five of the eight communities'

respondents feel casinos are not good for a community if a simple majority is the

criterion used.

Next, the results for between community comparisons for the question, "Since

the introduction of casino gambling, is your community a better place to live, a worse

place to live, or is it about the same?," appear in Table 4.21. Here, we find that overall

475 or 17.5% of the respondents felt the community was a worse place to live, while

361 or 13.3% felt it was a better place to live. A substantial majority, 1,878 or 69.2%,

believed it was about the same. Of the total sample of 2,768, 47 or 1.7 % indicated that

they didn't know and 7 or 0.3% refused to answer.

As was the case for the question regarding whether or not casinos are good for

communities, the responses indicating whether it is a better or worse place to live reveal

significant differences between communities. Here the Chi Square statistic for the

between community comparison is 669.48 (p < .001). Some community respondents

indicate strong agreement that their community is about the same since the advent of

casino gambling, such as St. Louis City (86.8%), St. Louis County (83.5%) and St.

Joseph (82.5%). However, 54.8% of Biloxi respondents indicated their community is a

worse place to live since casinos arrived. Alton and East Peoria both have a

considerable minority of respondents, 30.7% and 20.2% respectively, who feel the same. Interestingly, it is also Biloxi where the greatest number of respondents, 19.5%, believe the community is a better place to live. Sioux City has 17.6% of its respondents who think the community is a better place to live. These figures not withstanding, six of eight of the communities have about 75% or better of their respondents perceiving no change.

Responses to the question, "The community made the right choice when it legalized casino gambling (strongly disagree, somewhat disagree, somewhat agree, strongly agree)" appear in Table 4.22. For this question, 97 or 3.5% of the respondents didn't know and 10 or 0.4% refused to answer. Of the total 2,661 respondents who answered the question, 662 or 24.9% strongly agreed, 824 or 31.0% somewhat agreed, 425 or 16.0% somewhat disagreed, and 750 or 28.2% strongly disagreed. Clearly this indicates there is little agreement on this issue. When the agrees and disagrees are combined, 55.8% agree and 44.2% disagree. Again, as the between community comparisons show, there are significant differences between communities (Chi Square = 213.66, p < .001).

Table 4.21

Since The Introduction of Casinos Into Your Community, Is It a Worse,
About The Same, or A Better Place to Live by Jurisdiction

Since the introduction of casino gambling, is you community,	CITY								
	BILOXI	ALTON	ST. JOSEPH	SIOUX CITY	ST. LOUIS CITY	EAST PEORIA	PEORIA	ST. LOUIS COUNTY	TOTAL
A Worse Place to Live?	216 54.8%	122 30.7%	31 7.4	30 7.4%	14 3.9%	20 20.2%	28 9.1%	14 4.1%	475 17.5%
Is It About The Same?	101 25.6%	239 60.1%	344 82.5%	302 74.9%	308 86.8%	68 68.7%	233 75.4%	283 83.5%	1878 69.2%
A Better Place To Live?	77 19.5%	37 9.3%	37 9.3%	71 17.6%	33 9.3%	11 11.1%	42 12.4%	42 12.4%	361 13.3%
Total[1]	394 100.0%	398 100.0%	417 100.0%	403 100.0%	355 100.0%	99 100.0%	309 100.0%	339 100.0%	2714 100.0%

[1] Only those responses for those who choose to answer the question are included in the table. The total number of respondents was 2768. Of those 47 or 1.7% said they did not know and 7 or 0.3% refused to answer.

X^2=669.48   p < .001

Table 4.22

Agreement/Disagreement with the Statement: The Community Made The Right Choice
When It Legalized Casino Gambling

The Community made the right choice when it legalized casino gambling	CITY								
	BILOXI	ALTON	ST. JOSEPH	SIOUX CITY	ST. LOUIS CITY	EAST PEORIA	PEORIA	ST. LOUIS COUNTY	TOTAL
Strongly Disagree	72 18.4%	101 26.0%	105 25.7%	135 33.8%	109 31.6%	34 35.8%	94 31.1%	100 30.1%	750 28.2%
Somewhat Disagree	26 6.6%	65 16.8%	54 13.2%	89 22.3%	53 15.4%	24 25.3%	50 16.6%	64 19.3%	425 16.0%
Somewhat Agree	98 25.1%	121 31.2%	141 34.6%	124 31.0%	111 32.2%	19 20.0%	108 35.8%	102 30.7%	824 31.0%
Strongly Agree	195 49.9%	101 26.0%	108 26.5%	52 13.0%	72 20.9%	18 18.9%	50 16.6%	66 19.9%	662 24.9%
Total[1]	391 100.0%	388 100.0%	408 100.0%	400 100.0%	345 100.0%	95 100.0%	302 100.0%	332 100.0%	2661 100.0%

[1] Only those responses for those who choose to answer the question are included in the table. The total number of respondents was 2768. Of those 97 or 3.5% said they did not know and 10 or 0.4% refused to answer.

$X^2 = 213.66 \quad p < .001$

Examining the between community differences, the strongest support for the community making the right decision to legalize casinos is evidenced in Biloxi, where 49.9% strongly agree and 25.1% somewhat agree, yielding 75% in the agree category. The next most strongly agreeing community was St. Joseph where a combined 61.1% agreed. To a lesser extent Alton, St. Louis City, and Peoria tended to agree with 57.2%, 53.1% and 52.4%, respectively. St. Louis County was evenly divided with 50.6% in the agree categories and 49.4% in the disagree categories. However, more respondents strongly disagreed (30.1%) than strongly agreed (19.9%). Two communities disagreed that the community made the right decision as East Peoria had a combined 61.1% who disagreed and Sioux City had 56.2% who disagreed. Clearly few communities have attained a consensus regarding the appropriateness of casino legalization.

Finally, the question of whether or not people's expectations were met regarding the effects that casinos might have on communities is examined. Here community by community comparisons will not be presented. What is examined is a cross-tabular analysis comparing expected effects with whether or not the community made the right decision to legalize gambling. These results appear in Table 4.23. First, it should be noted that overall 44.3% of the respondents expected a positive effect, 33.7% expected a negative effect, and 22.0% expected no effect at all. Clearly those who expected a negative effect believed that the community made the wrong choice, since 76.7% of those expecting a negative effect answered in the disagree categories. Conversely, of those expecting a positive effect, 77.9% believe the community made the right choice.

In the middle category, of those who expected no effect, 60.9% believe the community made the right choice as opposed to 39.1% who think the community made the wrong choice. To determine the extent to which beliefs and attitudes might have changed we can look at the results for those who expected a negative effect, but believe the community made the right choice, versus those who expected a positive effect and believe the community made the wrong choice. The results are virtually identical, in that 22.2% of those who expected negative effects believe the community made the right choice, while 22.0% who expected positive effects believe the community made the wrong choice. These results clearly reflect the division of opinion regarding the effects that casinos have had on these new casino jurisdictions.

Table 4.23

Agreement/Disagreement With The Statement: The Community
Made The Right Choice When It Legalized Casino Gambling By
What Effects, If Any Did You Expect Casino Gambling
To Have On Your Community?

What kind of effects, if any did you expect casino gambling to have on your community?	The community made the right choice when it legalized casino gambling				
	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree	Total
Negative Effect	502 57.2%	171 19.5%	139 15.8%	65 7.4%	877 100.0%
No Effect At All	101 18.1%	117 21.0%	226 40.5%	114 20.4%	558 100.0%
Positive Effect	132 11.3%	125 10.7%	434 37.2%	475 40.7%	1166 100.0%
Total	735 28.3%	413 15.9%	799 30.7%	654 25.1%	2601 100.0%

$X^2 = 759.23$ $p < .001$

Discussion

The findings based on the four questions analyzed here indicate that community satisfaction with casino gambling is far from unanimous. This was first evidenced in that 49.3% of those responding disagreed with the statement that "In balance, casinos are good for a community." This left the a mere 50.7% majority who agreed. This overall agreement is largely due to the fact that Biloxi respondents so substantially agreed that casinos are good for a community. However, it should be pointed out that for five of the eight communities more respondents disagreed with this statement than agreed. Whether the community became a better or worse place to live yielded a significant majority of respondents who felt the community was virtually unchanged (69.2%). Responses to whether or not the community made the right choice in legalizing casino gambling revealed that 55.8% agreed to some extent, while 45.2% disagreed. While this indicates greater support for casinos than the first question, it seems to further validate the idea that satisfaction is not strongly felt, nor is dissatisfaction. Finally, that most persons' preconceptions regarding likely negative and positive effects were born out and that virtually equal percentages of respondents seem to have had their expectations invalidated indicates there are clearly positive and negative effects that have occurred, but in some cases not in the expected directions. From the totality of results across communities it is apparent that community satisfaction with casinos is indeed mixed.

The analysis between communities clearly indicates that there are significant differences between communities in terms of community level satisfaction with casino

gambling. An amazing finding is that residents of Biloxi vastly agree that casinos are good for a community (74.1% agree), while 54.8% believe that community is a worse place to live since casinos have been introduced, and 75% agree that the community made the right choice in legalizing casino gambling. None of the other communities as strongly agreed that casinos are good for a community, or as strongly felt that their community was a worse place to live since the introduction of casinos, or so overwhelmingly agreed that their community made the right choice in legalizing casinos. This would seem to indicate that Biloxi is experiencing effects attributed to casinos that other communities are not, presumably in both positive and negative directions. What is known is that Biloxi has the highest concentration of casinos, with nine, and that Biloxi has been transformed into a major resort attraction as a result of casino presence. As a result, the level of economic prosperity in Biloxi is probably at an all time high, with many new jobs and other opportunities. In fact, as reported elsewhere, 81.5% of the Biloxi respondents indicated that the standard of living had increased since casinos were introduced in their community (Nichols, Stitt, and Giacopassi, 2000).[52] At the same time we can speculate that traffic congestion and drains on community services are also at an all time high. Also, as reported elsewhere (Stitt, Giacopassi and Nichols, 2000), the crimes of robbery, simple assault, forgery, fraud, credit card fraud, embezzlement, prostitution, drug violations, public disorder and DUIs have significantly increased, even taking into account the tourist (population at risk) numbers.[53] Community perceptions of an increase in crime was also recognized by Biloxi respondents, where 54.1% believe that crime had increased since the advent of casinos (Nichols, Stitt, and Giacopassi, 2000). Additionally, 38.6% of the respondents believed

that fear of crime had increased since casinos arrived. Both of these represent the greatest magnitude of perceived increases in these measures of all of the jurisdictions. Thus, Biloxi seems to have seen both the greatest positive and negative impacts resulting from casino gambling.

As Biloxi stands out as a community strongly impacted by casino presence and favorably inclined toward the overall effects on the community, there are two communities which seem to indicate dissatisfaction. These are Sioux City and East Peoria. As mentioned above, 61.1% of East Peoria respondents and 56.2% of Sioux City respondents felt the community did not make the right decision in legalizing casino gambling. Also, 65.6% of East Peoria respondents and 62.5% of Sioux City respondents disagreed with the statement that on balance casinos are good for a community. As reported elsewhere, Sioux City "stands out as being the most polarized in its citizens' perceptions of casino effects on quality of life" (Nichols, Stitt, and Giacopassi, 2000). This may be due to significant opposition to casinos that existed on moral grounds. As also reported there, 32% of the Sioux City and 29.4% of East Peoria respondents felt there was some decrease in the quality of family life as a result of casino gambling. Additionally, community members from East Peoria were third highest of all community groups to perceive an increase in crime and fear of crime. Finally, East Peoria is the smallest of the communities analyzed and therefore, likely to have felt the presence of its one riverboat casino most strongly in both positive and negative ways.

Conclusion

Clearly, community satisfaction with casino gambling is mixed. The structures and dynamics of each community seem to come into play in very complex ways to determine what effects casinos will have. The one thing that is apparent, both from this analysis and others reported elsewhere, is that satisfaction is a multi-dimensional factor. From other analyses the authors have found strong support for the economic boosts that casinos bring to communities. This was most notable when members of the research team queried community leaders with regard to impacts of casinos on their communities (Giacopassi, Nichols, and Stitt, 1999).[54] A next step to further understand the factors contributing to community satisfaction/dissatisfaction with casinos might be to further analyze economic variables impacted by casino presence. At the same time, there seems to be significant reason to believe that since all segments of the community are not affected uniformly by economic, social and other factors which disrupt day-to-day life (i.e., traffic congestion, crime, etc.), this is likely to be an extremely complex issue that will take many additional studies to resolve as the results may depend on a variety of individual and community-specific variables.

Chapter 5

Conclusions and Implications

The findings of the research project suggest that when casinos are introduced into a community, the impact of the casino varies by community. For example, in comparing the before and after crime rates utilizing the population at risk (the more conservative measure to gauge a possible casino effect), the data reveal few consistent trends in crime. In three communities, there were many more crimes that significantly increased than decreased. In three other jurisdictions, there were many more crimes that significantly decreased than increased. In one city, the overwhelming majority of crimes showed no change. As with the crime data, for almost every variable studied, there were substantial differences and few consistencies among the new casino jurisdictions.

This finding in itself is important. If only one community was intensively studied comparing variables before and after the introduction of the casino, there would be a high likelihood of finding significant changes along a number of important individual, family, or community dimensions. The conclusions, based on the study of one community, might be assumed to be generalizable to other casino communities. However, when studying a total of eight jurisdictions, it becomes clear that not all communities experience the same "casino effect." In fact, it appears there is no single casino effect, but one that varies depending on a number of as yet unspecified conditions possibly idiosyncratic to each community studied.

Among the factors that need to be considered when attempting to explain a casino's impact on a community are the nature of the economic and population base of

a community; the awareness and willingness of community residents to accept changes in the traditional patterns of community interaction; the nature of the political and civic leadership as well as that of the casino management and their planning regarding how the casino will interface with other important segments of the community; the number, size and location of the casino(s); whether the casino is designed to primarily attract tourists or local residents; the adequacy of regulatory oversight; the adequacy of the community's infrastructure to meet the added requirements imposed by a casino's presence; the tax considerations of casino revenue (how important is the tax revenue to a community and how will it be spent); and the planning of law enforcement officials to prepare for potential problems associated with the introduction of a casino into a community. This list is not meant to be exhaustive, but rather suggestive of the complexity of the casino-community relationship.

Special emphasis in this research project was placed on studying law enforcement and crime in the new casino jurisdictions because much of the controversy surrounding casinos concerns their impact on crime. Our findings indicate that there is no general increase in serious crime across casino communities. However, citizens in the casino communities tend to have an increased fear of crime and tend to believe that crime has, in fact, increased. This suggests that law enforcement officials need to do a better job of reporting crime trends to the citizens to alleviate unfounded fears or, where crime has increased, to seek additional resources.

Our data and our interviews with police chiefs also provide the basis for some policy recommendations. The police departments need to prepare for changes in the way they operate. Crime patterns may change as the casino and its environs have the

potential to become a new hot spot within the community. Different types of crimes (casino-related scams, bank robberies, counterfeiting) may appear where previously, especially in small communities, they were unknown. Police need to be aware that drug related offenses increased in every jurisdiction analyzed and, almost without exception, traffic flow and traffic related problems became a concern within casino communities.

Several chiefs stressed that preparedness was a key to avoiding future problems. Consequently, police need to prepare for these changes and, once casinos are approved, seek increased funding for additional officers to meet the increased scope of services they will be asked to provide. Consistent with this view, a component of police training might focus on tourists and casino-related crimes. Communication needs to be established with other casino communities, especially in the region, to alert each other to crime trends that a community is experiencing that may migrate to the other casino communities. Good communication and a good working relationship should also be established with the casino security staffs, but policies need to be developed to insure the relationship established with the casinos embodies the highest professional and ethical standards.

Policy makers should be aware of the complexity of the casino-community relationship and the fact that there are both costs and benefits associated with allowing a casino into a community. By providing employment and increased tax revenue, casinos can have a beneficial impact on a community's economy, and this appears especially important in small communities that have experienced difficult economic circumstances. It also is evident that some individuals will suffer from problems associated with casino gambling (problem gambling), and this can lead to many

secondary effects (crime, bankruptcy). The casino can also be disruptive to the traditional patterns of community life. Inevitably, some citizens will view the changes as positive; others will view the changes as negative.

The findings of the present research provide ammunition for each side of the casino debate. Clearly, some communities receive substantial economic benefits from a casino's presence without suffering severe social consequences. Alternately, other communities have experienced an increase in various types of social problems (crime, suicide, bankruptcy) accompanying the introduction of a casino into the community. The reality is one that others have noted: casinos appear neither as good for a community as supporters had hoped nor as bad for a community as opponents had feared. How the costs and benefits are evaluated may depend on the community's expectations, preparation, and moral stance of the populace toward casino gambling.

Finally, although the present research was conceptualized as being both an extensive and intensive analysis of new casino jurisdictions, several limitations must be noted. The casino communities selected cannot be viewed as representative of all or even all new casino jurisdictions. Most of the new casino jurisdictions included in this research had a single casino. The findings for Biloxi, a community with a high concentration of casinos, frequently differed, both positively and negatively, from the single casino communities. Also, the jurisdictions studied are exclusively in the south and midwest, and do not include any Native American casinos. The temporal dimension is necessarily limited: all of the casino communities studied have had casino gambling for fewer than ten years. The problems studied may be objectively exacerbated or ameliorated as communities have a greater duration of experience with

casinos within their communities. The subjective evaluation of the acceptability of casino gambling by citizens is also subject to change as macro-currents affect the economic and cultural landscape of the nation.

Other potential problems should be pointed out. For example, legal casinos may well reduce illegal wagering and the social consequences of such activity. However, due to lack of relevant data, this substitution effect cannot be examined presently. Further, since probably much of the crime associated with illicit gambling is unreported, the impact of casinos may be more positive than the numbers suggest from this effect alone. Also, some large proportion of the crime expected to increase as a result of casinos such as embezzlement might be handled within the firm. Reported crime statistics might be even less satisfactory than in some other circumstances.

Another factor which might be considered is that the impact of casinos may depend upon what type of clientele the casinos draw. What percentage are locals, day-trippers, or overnight tourists. Unfortunately good data on this is not available. Another related concern is what is the appropriate geographical area over which to assess the casino impacts. Clearly this is related to the type of clientele. For example, crime, divorce and bankruptcy might be expected to increase beyond the city or county limits if casino patrons travel some distance to gamble. This is an area where further research would be beneficial to understand casino impacts.

Next, it would provide valuable insights were crime statistics for the casino themselves available. Unfortunately such data are not available and where they are their validity is questionable since casinos may handle on-site violations informally where possible and not report them to authorities. Additionally, data on crimes

committed near casinos environs might be beneficial in accounting for the perception that casinos generate crime. Unfortunately the collection of such data was also beyond the scope and possibility of the present study.

This research indicates that there are few consistencies between communities when comparing the before and after rates for new casino jurisdictions. It is possible that the numbers (as crime and tourism statistics) are so imprecise as to result in these inconsistencies. It is equally plausible that the effects of casinos in a community are quite varied, depending on a multitude of variables beyond the scope of the present research. Based on the differential impact that casinos have on these communities, it is apparent that simple analyses and broad generalizations are not sufficient to capture the complexity of what occurs in communities when legalized casino gambling is introduced.

Appendices

Appendix A
Project Questionnaire and Codebook

SPSS Variable Name	Description of Field or Question	Record Location	Field Size	Codes
csid	Case ID	1/1	5	10000-99999
ctyn	City of Residence	1/20	1	1 – Biloxi 2 – Alton 3 – St. Joseph 4 – Sioux City 5 – St. Louis City 6 – E. Peoria 7 – Peoria 8 – St. Louis County
q1	How many miles do you live from the nearest casino?	1/23	1	0 – UNDER 5 MILES 1 – 5 TO 10 MILES 2 – 11 TO 15 MILES 3 – 16 TO 20 MILES 4 – 21 TO 25 MILES 5 – 26 TO 30 MILES 6 – 31 TO 50 MILES 7 – MORE THAN 50 MILES 8 – DON'T KNOW 9 – REFUSED
q2	How many miles do you work from the nearest casino?	1/24	1	0 – UNDER 5 MILES 1 – 5 TO 10 MILES 2 – 11 TO 15 MILES 3 – 16 TO 20 MILES 4 – 21 TO 25 MILES 5 – 26 TO 30 MILES 6 – 31 TO 50 MILES 7 – MORE THAN 50 MILES x – RESPONDENT DOES NOT WORK 8 – DON'T KNOW 9 – REFUSED
q3	Have you ever worked in a casino?	1/25	1	1 – YES 2 – NO 8 – DON'T KNOW 9 – REFUSED
q4	Have any of your family members ever worked in a casino?	1/26	1	1 – YES 2 – NO 8 – DON'T KNOW 9 – REFUSED

q5	What effect do you think the presence of casinos have had on the amount of crime in your community? Would you say casino gambling has caused an:	1/27	1	1 – Increase [go to q6] 2 – Decrease, or [go to q7] 3 – No effect at all 8 – DON'T KNOW 9 – REFUSED ===> [go to c7]
q6	On a scale of one to ten, with one being a minor increase and ten being a major increase, how would you rate the increase of crime in your community due to casino gambling?	1/28	3	001-010 – ENTER NUMBER ON A SCALE OF 1 TO 10 088 – DON'T KNOW 099 – REFUSED
q7	On a scale of one to ten, with one being a minor decrease and ten being a major decrease, how would you rate the decrease of crime in your community due to casino gambling?	1/31	3	001-010 – ENTER NUMBER ON A SCALE OF 1 TO 10 088 – DON'T KNOW 099 – REFUSED
c7	check	1/34	3	
q8	Do you gamble at casinos in your community?	1/37	1	1 – YES [go to q8a] 2 – NO 8 – DON'T KNOW 9 – REFUSED ===> [go to q12b]
q8a	Did you gamble in casinos prior to them coming to your community?	1/38	1	1 – YES [go to q8b] 2 – NO 8 – DON'T KNOW 9 – REFUSED ===> [go to q9]
q8b	Before casino gambling was implemented in your community, where did you usually go to casinos? Would you say:	1/39	1	1 – Indian casinos 2 – Riverboat casinos in other communities 3 – Casinos in Nevada 4 – Casinos in Atlantic City, or 5 – Some other location (SPECIFY – End with ///) [specify] 8 – DON'T KNOW 9 – REFUSED
q8c	Has your gambling increased as a result of having a casino in your community?	1/40	1	1 – YES 2 – NO 8 – DON'T KNOW 9 – REFUSED
q9	In the last year, how many times did you visit the casinos in your community to gamble?	1/41	3	001-777 – ENTER NUMBER OF TIMES 888 – DON'T KNOW 999 – REFUSED

q10	How much time do you spend gambling when you visit the casinos in your community?	1/44	1	0 – LESS THAN 15 MINUTES 1 – LESS THAN 30 MINUTES 2 – LESS THAN AN HOUR 3 – LESS THAN 2 HOURS 4 – LESS THAN 3 HOURS 5 – LESS THAN 5 HOURS 6 – LESS THAN 10 HOURS 7 – MORE THAN 10 HOURS 8 – DON'T KNOW 9 – REFUSED
q10a	On a typical visit to a casino, how much do you spend?	1/45	2	01 – LESS THAN $10 02 – LESS THAN $20 03 – LESS THAN $50 04 – LESS THAN $100 05 – LESS THAN $200 06 – LESS THAN $300 07 – LESS THAN $400 08 – LESS THAN $500 09 – $500 OR MORE 88 – DON'T KNOW 99 – REFUSED
q11	Gambling involves winning and losing. What is the most you would lose before you would quit?	1/47	5	00001-09999 – ENTER DOLLAR FIGURE ROUNDED TO THE NEAREST DOLLAR 10000 – $10,000 OR MORE 88888 – DON'T KNOW 99999 – REFUSED
q11a	How often do you drink while you gamble? Would you say: (Q-BY-Q: BY DRINK WE MEAN HAVING ONE OR MORE ALCOHOLIC BEVERAGES.)	1/52	1	1 – Always 2 – Nearly Always 3 – Sometimes 4 – Seldom, or 5 – Never 8 – DON'T KNOW 9 – REFUSED
q11b	Have you ever lost more than you could afford to?	1/53	1	1 – YES 2 – NO 8 – DON'T KNOW 9 – REFUSED
q11c	Have you ever had to get additional money (from friends, credit cards, ATM machines, and so forth) for gambling while at a casino?	1/54	1	1 – YES 2 – NO 8 – DON'T KNOW 9 –REFUSED

q12a	Money spent on gambling could be spent on other things. How would you spend the money you currently spend in casinos; if you did not gamble?	1/55	1	SPECIFY (END WITH ///) ===> [specify] [go to q13]
q12b	The money people spend on gambling could be spent on other things. How do you think the money people spend on gambling WOULD be spent if they did not gamble. [allow 1]	1/56	1	SPECIFY (END WITH ///)
q13	Of the people in your community, what percentage do you estimate have gambling problems?	1/57	3	000-100 – ENTER THE PERCENTAGE OF PROBLE-MATIC GAMBLERS 888 – DON'T KNOW 999 – REFUSED
q14	I am going to read you some statements. Please tell me if you agree or disagree with each statement. The first statement is: Almost everyone who frequently gambles in casinos loses.	1/60	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 – REFUSED
q15	Gambling is about the only way a working person can get a large amount of money.	1/61	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 – REFUSED
q16	Casinos are operated in a law-abiding manner.	1/62	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 – REFUSED
q17	Casinos inevitably bring an increase in crime.	1/63	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 – REFUSED
q18	Gambling is as much an addiction as drugs.	1/64	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 –REFUSED
q19	In balance, casinos are good for a community.	1/65	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 – REFUSED
q20	Gambling is immoral.	1/66	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 – REFUSED
q21	Gambling takes advantage of the poor.	1/67	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 – REFUSED

q22	The casino industry has connections with organized crime.	1/68	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 – REFUSED
q23	Gambling takes advantage of the people with no self-control.	1/69	1	1 – Agree, or 2 – Disagree 8 – DON'T KNOW 9 – REFUSED
q24	Since the introduction of casino gambling, is your community:	1/70	1	1 – A better place to live? 2 – A worse place to live? Or 3 – Is it about the same? 8 – DON'T KNOW 9 – REFUSED

q25	How many of your friends (not including relatives) have developed a problem as a result of gambling?	1/71	2	01-75 – ENTER
				       NUMBER OF
				       FRIENDS
				76 – 76 OR MORE
				00 – NONE
				88 – DON'T KNOW
				99 – REFUSED

q26	How many of your relatives have developed a problem as a result of gambling?	1/73	2	01-75 – ENTER
				       NUMBER OF
				       RELATIVES
				76 – 76 OR MORE
				00 – NONE
				88 – DON'T KNOW
				99 – REFUSED

q27	Since the introduction of casinos in your community, has the standard of living:	1/75	1	1 – Increased 2 – Decreased, or 3 – Stayed about the same 8 – DON'T KNOW 9 – REFUSED
q28	(Since the introduction of casinos in your community, has the) Quality of education for the community's children:	1/76	1	1 – Increased 2 – Decreased, or 3 – Stayed about the same 8 – DON'T KNOW 9 – REFUSED
q29	Unemployment Rate:	1/77	1	1 – Increased 2 – Decreased, or 3 – Stayed about the same 8 – DON'T KNOW 9 – REFUSED
q30	Fear of crime:	1/78	1	1 – Increased 2 – Decreased, or 3 – Stayed about the same 8 – DON'T KNOW 9 – REFUSED

q31	Overall level of business prosperity increased, decreased, or stayed about the same? (Q-BY-Q: BY BUSINESS PROSPERITY WE MEAN BUSINESS ACTIVITY.)	1/79	1	1 – Increased 2 – Decreased, or 3 – Stayed about the same 8 – DON'T KNOW 9 – REFUSED
q32	Level of juvenile delinquency:	1/80	1	1 – Increased 2 –Decreased, or 3 – Stayed about the same 8 – DON'T KNOW 9 – REFUSED
q33	I am going to read you some more statements. Please tell me if you Strongly Agree, Somewhat Agree, Somewhat Disagree, or Strongly Disagree with each statement. People who gamble in casinos are just throwing their money away. Do you:	2/1	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q34	Casinos take more out of the community than they contribute economically. Do you:	2/2	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q35	The community made the right choice when it legalized casino gambling. Do you:	2/3	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q37	The people who gamble in the casinos are those who can least afford to do so. Do you:	2/4	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q38	There has been an increase in tourism as the result of casinos opening in your community. Do you:	2/5	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q39	Casinos are good corporate citizens who help deal with community problems. Do you:	2/6	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED

q40	Now I would like you to remember back to the time prior to the arrival of casinos in your community. What kind of effects, if any, did you expect casino gambling to have on your community? Would you say you expected a: (Q BY Q: BY "EFFECT" WE MEAN IMPACT OR CHANGE)	2/7	1	1 – Positive effect 2 – Negative effect, or 3 – No effect at all 8 – DON'T KNOW 9 – REFUSED
q41	Do you perceive the presence of casinos to be a divisive force in your community? (Q-BY-Q: BY DIVISIVE WE MEAN CAUSING DISAGREEMENTS OR CONFLICT.)	2/8	1	1 – YES 2 – NO 8 – DON'T KNOW 9 – REFUSED
q42	Since the introduction of casino gambling, do you trust your Neighbors:	2/9	1	1 – More 2 – Less, or 3 – About the same 8 – DON'T KNOW 9 – REFUSED
q43	Since the introduction of casino gambling, has the extent to which Residents rely on police to solve problems as opposed to dealing with situations informally:	2/10	1	1 – Increased 2 – Decreased, or 3 – Stayed about the same 8 – DON'T KNOW 9 – REFUSED
q44	Since the introduction of casino gambling, has the extent to which neighbors get together socially with each other:	2/11	1	1 – Increased 2 – Decreased, or 3 – Stayed about the same 8 – DON'T KNOW 9 – REFUSED
q45	Since the introduction of casino gambling, has the satisfaction you have with your neighborhood as a place to live:	2/12	1	1 – Increased 2 – Decreased, or 3 – Stayed about the same 8 – DON'T KNOW 9 – REFUSED
q46	Since the introduction of casino gambling, do you trust the local Government:	2/13	1	1 – More 2 – Less, or 3 – About the same 8 – DON'T KNOW 9 – REFUSED
q47	Compared to other businesses in the community, how much influence do casinos have over government and policy issues? Would you say:	2/14	1	1 – More 2 – Less, or 3 – About the same 8 – DON'T KNOW 9 – REFUSED
q48	Now I am going to ask your opinion about possible disruptive effects of casino gambling in your community. With regard to peoples homes being broken into and things being stolen, do you think casino gambling has caused a:	2/15	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED

q49	With regard to being robbed, meaning being threatened with bodily harm. do you think casino gambling has caused a:	2/16	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q50	With regard to people being physically assaulted, do you think casino gambling has caused a:	2/17	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q51	With regard to drunk drivers on the road, do you think casino gambling has caused a:	2/18	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q52	With regard to people drinking in public, do you think casino gambling has caused a:	2/19	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q53	With regard to groups of teenagers or other groups of people hanging out and harassing people. do you think casino gambling has caused a:	2/20	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q54b	With regard to the level of illegal drug use in your community, do you think casino gambling has caused a:	2/21	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED

q55	With regard to child abuse and neglect, do you think casino gambling has caused a:	2/22	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q56	With regard to vandalism, do you think casino gambling has caused: (Q-BY-Q: BY VANDALISM WE MEAN PEOPLE BREAKING WINDOWS, WRITING ON WALLS, AND SO FORTH.)	2/23	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
m	With regard to the demand for police services, do you think casino gambling has caused a:	2/24	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q58	With regard to the physical decay of the city, do you think casino gambling has caused a: (Q-BY-Q: EXAMPLES OF PHYSICAL DECAY INCLUDES ABANDONED CARS, RUN DOWN BUILDINGS, AND SO FORTH.	2/25	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q59	With regard to victimization of the elderly, do you think casino gambling has caused a:	2/26	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q60	With regard to domestic abuse, do you think casino gambling has caused a:	2/27	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED

q61	With regard to garbage or litter in the streets and sidewalks, do you think casino gambling has caused a:	2/28	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q62	With regard to prostitution, do you think casino gambling has caused a:	2/29	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q63	With regard to homelessness, do you think casino gambling has caused a:	2/30	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q64	With regard to divorce, do you think casino gambling has caused a:	2/31	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q65	With regard to suicide, do you think casino gambling has caused a:	2/32	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q66	With regard to bankruptcy, do you think casino gambling has caused a:	2/33	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED

q67	With regard to the quality of family life, do you think casino gambling has caused a:	2/34	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q68	With regard to the need for housing for lower income families, do you think casino gambling has caused a:	2/35	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 -- No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q69	With regard to traffic congestion, do you think casino gambling has caused a:	2/36	1	1 – Large Increase 2 – Moderate Increase 3 – Small Increase 4 – No change at all, or 5 – Small Decrease 6 – Moderate Decrease 7 – Large Decrease 8 – DON'T KNOW 9 – REFUSED
q70	Finally, I am going to read you a few more statements. Please tell me whether you Strongly Agree, Somewhat Agree, Somewhat Disagree, or Strongly Disagree with each statement. The first statement is: The existence of casino gambling in your community has resulted in good-paying jobs.	2/37	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q71	The existence of casino gambling in your community has resulted in jobs with good benefits.	2/38	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q73	The existence of casino gambling in your community has resulted in bringing in revenue from outside the community.	2/39	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q74	The existence of casino gambling in your community has resulted in more tax revenue.	2/40	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED

q75	The existence of casino gambling in your community has resulted in improved municipal services.	2/41	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q76	The existence of casino gambling in your community has resulted in increased property values.	2/42	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q77	The existence of casino gambling in your community has resulted in lower taxes.	2/43	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q78	The existence of casino gambling in your community has resulted in the closure of existing businesses.	2/44	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q79	The existence of casino gambling in your community has resulted in the ability to attract new industries.	2/45	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q80	The existence of casino gambling in your community has resulted in additional contributions to charitable causes.	2/46	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED
q81	The existence of casino gambling in your community has rejuvenated the local economy.	2/47	1	1 – Strongly Agree 2 – Somewhat Agree 3 – Somewhat Disagree, or 4 – Strongly Disagree 8 – DON'T KNOW 9 – REFUSED

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educ	Now I have just a few more demographic questions. What is the highest level of education you have completed? (READ ONLY IF NECESSARY)	2/48	1	1 – Grade School 2 – Some high school 3 – High school graduate / GED 4 – Trade or technical school 5 – Some college (Associate Degree) 6 – College graduate (BS or BA) 7 – Master's degree 8 – Doctorate / Post-Doctorate degree 9 – REFUSED
gend	ENTER GENDER	2/49	1	1 – MALE 2 – FEMALE
incm	What is your (gross) annual household income from all sources?	2/50	1	1 – Less than $20,000 2 – $20,000 to less than $36,000 3 – $36,000 to less than $50,000 4 – $50,000 to less than $75,000 5 – $75,000 to less than $100,000, or 6 – Over $100,000 8 – DON'T KNOW 9 – REFUSED
chrh	What church or denomination, if any, do you most closely identify with? (Q BY Q: IF RESPONDENT ANSWERS "CHRISTIAN," PLEASE SAY "COULD YOU BE MORE SPECIFIC.") (Q BY Q: IF RESPONDENT REPLIES WITH A SPECIFIC CHURCH NAME SUCH AS "CHURCH OF THE GOOD SHEPHERD" VERIFY THAT IT IS A CATHOLIC OR SOME OTHER DENOMINATION)	2/51	2	01-50 – SELECT FROM LIST 66 – ATHEIST 77 – AGNOSTIC 88 – NONE 00 – OTHER (SPECIFY -- End With ///) [specify] 99 – REFUSED
age	And, what is your age?	2/53	3	025-100 – ENTER RESPONDENT'S AGE 888 – DON'T KNOW 999 – REFUSED

Appendix B

Telephone Survey Methodology

SAMPLE SELECTION

The sample frame was generated as a stratified random digit dial sample of telephone numbers provided by Survey Sampling, Inc. (SSI), a well known commercial sampling firm. The sample frame is randomly pre-screened for businesses and non-working numbers since only households meeting specific criteria were eligible for inclusion (discussed below).

The sample frame was generated using all prefixes associated with each of the stratum that represent the targeted geographic locations to be surveyed. These strata are as follows: (1) Alton, IL; (2) Biloxi, MS; (3) East Peoria, IL; (4) Peoria, IL; (5) Sioux City, IA; (6) St. Joseph, MO; (7) St. Louis City, MO; and (8) St. Louis County, MO. The St. Louis County stratum includes the following cities: (1) Afton; (2) Bridgeton; (3) Chesterfield; (4) Clayton; (5) Creve Cour; (6) Eureka; (7) Fenton; (8) Ferguson; (9) Florissant; (10) Hazelwood; (11) Ladue; (12) Kirkwood; (13) Manchester; (14) Riverview; (15) Valley Park; (16) Overland; and (17) Webster Groves.

ELIGIBILITY CRITERIA & RESPONDENT SELECTION PROCESS

In order to be eligible for inclusion in the telephone survey, household respondents had to meet three separate criteria for eligibility. Specific "screening" questions were asked to establish whether each randomly selected household met all three eligibility criteria in order to qualify for participation in the full telephone survey.

The first eligibility criterion is that each randomly selected household had to be located in one of the eight (8) geographic strata described above, a process which resulted in the exclusion of many households due to the method by which many telephone companies assign telephone numbers. That is, two telephone numbers with the same prefix were often located in different cities, resulting in the exclusion of many households which were reached by telephone, yet which failed to pass through the geographic screening question. Households with the same telephone prefixes -- which common sense would lead one to think would be located in the same geographic area -- but which frequently were not, had to be eliminated as ineligible when the household was not located in one of the eight eligible geographic regions.

The second eligibility criterion required that the respondent randomly selected from within the randomly selected household be at least 25 years of age in order to be eligible to participate in this survey[1].

The third criterion for eligibility was based on the participant's length of residency in the specific qualifying geographic stratum in which he/she currently lived. This length of residency requirement ranged between eight (8) and ten (10) years, based on the specific geographic stratum being sampled.

Random selection from within the randomly selected household occurred only when more than one resident of the household met the three baseline requirements for eligibility. When more than one household resident met all three of the eligibility requirements, a KISH table was used to determine the one eligible respondent to be interviewed to represent the randomly selected household. Respondent selection with the KISH table is based on the enumeration (listing) of all eligible residents in the household. The list of eligible residents, including designation of age and gender, is cross referenced

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[1] In those instances in which more than one respondent in the household met all three eligibility criteria.

against the last digit of the telephone number to determine which person must be interviewed to ensure random selection of potential respondents within each household.

The multiple selection criteria utilized as eligibility criteria, combined with the use of household enumeration for households with multiple eligible respondents resulted in a sampling protocol that was designed to locate respondents who qualify as a "low incidence" sample, akin at times to "finding a needle in a haystack."

CALLING PROTOCOL

Data collection began late in October of 1998 and was completed in June 1999. Numbers were called over the course of a minimum of a five week period at different times of the day, including morning, afternoon, and evening week day calls, with the same being true for the weekends (Saturday and Sunday). A maximum of 23 call attempts per number were made before any telephone number was no longer pursued, or until the household could be determined to be a non-eligible household number (business, disconnected, no eligible respondents, language problem, fax/computer modem line, group quarters, respondent impairment, etc). In addition, multiple soft refusal conversion attempts were made to households in which the potential participants had initially been hesitant to participate. A minimum of 4 days was allowed to elapse before a subsequent call attempt was made in attempting to convert soft refusals to completed interviews.

Appendix C
Procedures for Obtaining Control Jurisdictions

To analyze the impact that casino gambling has on various crime and quality of life issues, we compare the eight casino communities with a selection of "control" communities. Control communities were chosen based on their similarity to the casino communities over fifteen demographic, economic, and social variables.[55] The fifteen variables chosen are: percent of the population aged 15 to 34; total population; median household income; unemployment rate; percent black; percent Hispanic; percent Indian, Aleut, or Eskimo; percent below poverty for the population where poverty status is known; percent of the population not graduating high school; percent of occupied housing units that are renter-occupied; percent of total housing units in structures with 3 or more units; net migration; percent urban; average number of persons per square mile; and a GINI coefficient of income inequality. All data are taken from the U.S. Census Bureau's USA Counties 1996 CD-ROM and all variables are normalized by converting them to a Z-score relative to the U.S. county average.

The selection of control communities is based on k-means cluster analysis (Hartigan and Wong, 1979) and uses programs developed by Judson (1998).[56] The idea is to rank control communities on their proximity to casinos communities applying the following metric:

$$d(y,x) = (\sum_{j=1}^{k} (y_j - x_j)^q)^{1/q} \tag{1}$$

where y_j is the jth variable for the potential control community and x_j is the same variable for the casino community. In the present study, q in equation (1) equals 2, the usual Euclidian distance. Summing across all k variables, the control communities can be ranked in ascending order of distance from the casino communities.

Given the ranking of control communities, we chose those that were a minimum of fifty miles from a casino and had the lowest score, d(y,x), from equation (1). The top five matching control communities, their score, d(y,x), and corresponding casino communities are provided in Table C1.

Table C1: Casino Communities and Control Jurisdictions

Casino Community (County)	Control Jurisdictions	d(y,x)[a]
Sioux City, Iowa (Woodbury)	Chemung, New York	1.060
	Black Hawk, Iowa	1.060
	Garfield, Oklahoma	1.080
	Daviess, Kentucky	1.120
	Ohio, West Virginia	1.330
Alton, Illinois (Madison)	Trumbull, Ohio	0.876
	Stark, Ohio	0.882
	Clark, Ohio	0.905
	Richland, Ohio	0.999
	Winnebago, Illinois	1.010
Peoria, Illinois (Peoria)	Sebastian, Arkansas	1.220
	Winnebago, Illinois	1.230
	Macon, Illinois	1.240
	Hamilton, Tennessee	1.340
	Lackawanna, Pennsylvania	1.420
East Peoria, Illinois (Tazewell)	Sheboygan, Wisconsin	0.793
	Rock, Wisconsin	0.806
	Clark, Ohio	0.883
	Miami, Ohio	0.916
	Licking, Ohio	0.967
St. Louis County, Missouri (St. Louis)	Monroe, New York	2.120
	Allegheny, Pennsylvania	2.420
	Erie, New York	2.500
	Salt Lake City, Utah	2.630
	Montgomery, Ohio	2.820
St. Louis City, Missouri[b] (St. Louis City)	Richmond City, Virginia	2.870
	Norfolk City, Virginia	3.560
	Portsmouth City, Virginia	3.820
	Newport News, Virginia	4.400
	Roanoke, Virginia	4.540
St. Joseph, Missouri (Buchanan)	Daviess, Kentucky	0.846
	Sebastian, Arkansas	0.850
	Jasper, Missouri	1.080
	Lackawanna, Pennsylvania	1.120
	Garfield, Oklahoma	1.250
Biloxi, Mississippi (Harrison)	Escambia, Florida	1.050
	Wichita, Texas	1.460
	New Hanover, North Carolina	1.520
	Mclennan, Texas	1.530
	Tuscaloosa, Alabama	1.590

[a]Distance Metric. See equation (1) in text for definition.
[b]St. Louis City is an independent city that is counted as a county equivalent for data collection purposes.

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40. While anecdotal, two of the authors spoke with a credit counselor in Biloxi who indicated that the presence of casinos had made her job easier by providing people with income, allowing them to pay their bills.

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