Casinos and Campus Crime

by

Thomas Hyclak
Professor of Economics
Lehigh University
621 Taylor Street
Bethlehem PA 18015
tjh7@lehigh.edu

July 9, 2010
Draft – Not for Quotation
Suggestions Welcome

Abstract

Interest in the potential social costs of casino gambling has resulted in a number of studies of the link between casino presence and the incidence of crime in a host community. There is evidence that proximity to a casino increases the likelihood of problem gambling and that individuals with gambling addictions are more likely to commit property and other crimes. However, statistical evidence on the correlation between casino presence and general community crime rates is mixed. This paper extends the analysis to examine whether crime at distinct locations within a community, as reflected in data on property crimes committed on college campuses, is affected by proximity to a casino. Analysis of data on 173 residential colleges and universities in four Midwestern states suggests that robberies and motor vehicle thefts are significantly higher on campuses located within 10 miles of a casino. On the other hand burglaries, which constitute the most prevalent type of campus crime, are not correlated with proximity to a casino in this sample.

The author wishes to thank the Martindale Center and the College of Business and Economics Research Committee for financial support and Sabrina Terrizzi and Matt Saboe for excellent research assistance

Casinos and Campus Crime

Introduction

The spread of gambling casinos across the national landscape in the last 20 years has been accompanied by assessments of the potential social costs associated with this industry. The US Congress commissioned a major study of these issues (National Gambling Impact Study Commission 1999), numerous reports have been prepared for regulatory bodies (see the annotated bibliography prepared by Gardner et. al. 2005) and an academic literature has emerged (Eadington 1999 and Kearney 2005). In particular, considerable scrutiny has been given to the impact of the location of a casino in a community on local crime rates.

The hypothesis of a positive correlation between casinos and crime can be examined from the perspective of routine activities theory, which posits that a criminal act requires the co-location of likely offenders, suitable targets and a relative lack of preventive behavior (Volkwein et. al. 1995). Casino goers, like other tourists, present attractive targets who may be distracted by their gambling activity from effectively guarding against crime. And casino goers may also consist of a disproportionate number of likely offenders (Grinols and Mustard 2006). In this channel of influence, then, increased crime is concentrated among those frequenting the casino itself and is not unlike that experienced in many tourist locales (Miller and Schwartz 1998). The question is whether such criminal activity represents a social cost since fees and taxes on casinos can pay for any required increase in police and judicial resources and individuals should include the risk of becoming a crime victim in their assessment of the private cost of engaging in casino entertainment.

A broader channel linking casinos and community crime results from problem and pathological gambling. There is considerable evidence in the psychology literature that proximity to a casino is positively related to the incidence of problem and pathological gambling in a population (Volberg 2004, Shaffer et. al. 2004 and Welte et. al. 2004). And there is some evidence, largely from surveys of arrestees or individuals being treated for gambling addiction, that a high proportion of problem and pathological gamblers commit crimes to support their gambling habits (Morse and Goss 2007). Thus the presence of a casino might lead to a larger number of likely offenders in a community and contribute to an increase in crime well beyond the population of casino goers in the immediate vicinity of the casino. This seems more likely to involve a social cost since there are third-party victims and crimes may occur in jurisdictions that are not recipients of casino tax payments.

The casino-related crime hypothesis has been tested in a relatively small number of econometric studies published in academic journals. Indirect evidence was provided by Buck et. al. (1991) who found that crime rates in 64 New Jersey municipalities were inversely correlated with distance from Atlantic City but that this effect was statistically significant only for years after casinos opened there. The implication of their results is that the presence of casinos created a crime spillover effect from Atlantic City to neighboring towns.

Two studies focused on the impact of tribal casinos. Evans and Topoleski (2002) examined a sample of counties where Native American tribal lands are located. They found that rates of property crimes, violent crimes, and auto theft plus larceny were higher in casino counties with the effect becoming statistically significant four or more years after the casino opened. And Gazel, Rickman and Thompson. (2001) used a panel data set that included all

Wisconsin counties to examine the impact on crime from the introduction of tribal gaming casinos in 14 counties in 1992. While the overall crime rate was estimated to be 6% higher in casino counties, other things equal, the casino county variable was not statistically significant in separate regressions for larceny, burglary and robbery rates, suggesting that the main casino influence was on motor vehicle theft and violent crimes.

Perhaps the most prominent study was by Grinols and Mustard (2006). Their data set covered all 3,165 US counties from 1977 to 1996. In order to try to estimate the time pattern of the casino impact, they introduced two leads and five lags for a dummy variable indicating the opening of a casino in a county. Extensive controls were included for population density, population characteristics, local per capita income, unemployment insurance and retirement payments and county and period fixed effects. They found that casino counties had significantly higher assault, rape, robbery, burglary and auto theft rates 3 to 5 years after the opening of the casino.

In contrast, two studies found no evidence to support the casino-crime hypothesis. Chang (1996) used time series regression analysis to examine crime rates in Biloxi, Mississippi from 1986 to 1994, before and after the appearance of casinos. He found that crime dropped initially after the casinos started operating and then resumed a growth path similar to that seen in the pre-casino period. Importantly, he adjusted the crime rate data to include the average number of daily casino visitors along with the resident population in the denominator. And Koo, Rosentraub and Horn (2007) found that the presence of a casino located in a county or within 50 miles of a county had no statistically significant impact on county crime rates in Michigan, Indiana, Illinois and Ohio once fixed effects were included in their panel regressions. In addition, Walker (2007) has raised questions about the reliability of studies finding a positive association between casino

presence and local crime rates, focusing on questions of the endogeneity of casino locations and the effect of ignoring the tourist population in determining the exposure to crime (also see the response by Grinols and Mustard 2008).

This paper provides additional empirical information on the impact of casinos on local crime. Instead of using data on the crime rate prevailing in the entire community, which cannot distinguish between crimes limited to the casino's vicinity and those felt throughout the community, I use data on economic crimes committed on the campuses of colleges and universities as an indicator of criminal activity at particular locations within a community. I then test to determine if criminal activity is higher at locations in closer proximity to a casino. My sample includes 173 higher education institutions with residential campuses in four contiguous Midwestern states that have permitted casino gambling since the early to mid 1990s. Campuses in close proximity to a casino appear to experience more robberies and motor vehicle thefts. Burglaries of dorm rooms and offices, however, are not correlated with proximity to a casino in this sample.

Campus Crime

As awareness and concern about crime on college campuses increased in the mid 1980s, Congress was moved to enact legislation requiring colleges and universities to collect, monitor and disseminate crime data. In 1990 Congress passed the Crime Awareness and Campus Security Act and, in the face of criticism about inaccurate recording of crime statistics and inadequate dissemination of the data, replaced that with the Disclosure of Campus Security Policy and Campus Crime Statistics Act (also known as the Clery Act) in 1998. The Clery Act requires colleges to assemble statistics on crimes committed in residence halls and other campus buildings, in off-campus facilities, on adjacent streets and sidewalks and nearby public property

and report these statistics to students and parents and to the U.S. Department of Education (USDE). Note that crimes reported by students that happened in any other place are not included in the campus crime statistics. While there are concerns about the quality and consistency of data collection procedures, as there are with crime statistics compiled by local police departments, USDE has attempted to increase consistency with training programs and inspections (Lipka 2009).

According to data reported on the website[1] of USDE, in 2008 there were 53,125 crimes reported by all institutions of higher learning pursuant to the Clery Act requirements. Almost 60% of those crimes were classified as burglaries while economic crimes (burglary, robbery and motor vehicle theft) accounted for 82.5% of those reported. The total number of crimes reported by U.S. institutions of higher learning rose steadily from 1999 to 2006 before declining slightly in 2007 and 2008. Campuses present potential criminals with relatively high spatial concentrations of high value products and students and faculty may not be highly attuned to the need to guard against property theft from offices, dorm rooms, library carrels, and other places. Therefore an examination of campus crime lends itself to a consideration of the impact of casinos on criminal activity at different points within the surrounding community.

Just a handful of academic studies have reported the results of regression analyses of the determinants of cross-campus variation in reported crimes. All of the existing studies used data reported prior to the enactment of the Clery Act and were published in the criminal justice literature. So in addition to providing a different look at the casino-crime relationship, this paper also gives a fresh examination of the community and institutional factors thought to be associated with campus crime.

[1] www.ed.gov/admins/lead/safety/campus.html

A brief summary of the key results of four early studies of campus crime determinants will be useful in identifying control variables for this effort. Campus crime rates have been found to be positively correlated with campus size, the fraction of students residing on campus, and indicators of student wealth, such as the tuition level and admissions selectivity, (McPheters 1978, Morriss 1993, Sloan 1994 and Volkwein et.al. 1995). Attempts to examine campus security and crime prevention efforts found positive correlations with crime rates, indicating an endogenous response of deterrence efforts to higher crime (McPheters 1978 and Morriss 1993). And some results indicated that community factors had little or no statistical relationship to campus crime rates (Fox and Hellman 1985, Sloan 1994 and Volkwein et.al. 1995).

Data

This paper uses a sample of 173 four-year colleges and universities with residential campuses located in Illinois, Indiana, Iowa and Missouri. These four contiguous states, all located in the Midwest Census Region, had mature and stable casino industries by the turn of the century. A casino first opened in 1991 in Iowa and Illinois, in 1993 in Missouri and in 1995 in Indiana and the number of casinos was unchanged in each state from 2000 to 2006. Our attention then is on the effect of proximity to a casino on campus crime during the three year period from 2003 to 2005 when the number of casinos in the region was constant and each casino had been in operation long enough for any impact on crime to appear[2].

During this period there were 9 commercial casinos in 8 Illinois communities, 10 in 9 Indiana towns, 11 in 10 Missouri communities and 13 in 10 Iowa cities and towns. Of these 43 commercial casinos, 40 began as riverboat operations that later expanded into fixed dockside

[2] Recall that Evans and Topoleski (2002) and Grinols and Mustard (2006) found that the crime effect of a casino became statistically significant only 3-5 years after the casino first started operations in a community.

facilities. In Iowa three other commercial casinos were located at existing horse racing tracks and there were three tribal casinos.

An important feature of this data is that the location decision of casino operators was clearly constrained to river front sites with suitable docking facilities, existing race tracks and tribal lands. In a study of community-wide crime rates, it would clearly be necessary to consider whether the location of a casino is in fact partially determined by existing patterns of criminal activity, especially since casino locations are influenced by local economic development considerations (Walker 2007). For example, Koo, Rosentraub and Horn (2007) demonstrate that crime rates were higher in Indiana casino counties before and after casinos were located in them. In our case it is easier to assume that a constrained choice of a casino site within a community, influenced by infrastructure improvements and private investments made long ago, is independent of criminal activity on a college campus at another location in the same community or its vicinity.

Crimes

The dependent variables for our analyses are the total number of burglaries, robberies and motor vehicle thefts reported by the colleges and universities in my sample aggregated over the years from 2003 to 2005. I use data for a three year window in order to limit the number of zeroes reported and to smooth out the effect of anomalous events on the number of crimes reported in a given year. Data on the number of crimes were taken from information available at http://ope.ed.gov/security/.

Even with data gathered for a three year period, a large number of campuses reported zero incidents of specific crimes during the sample period. In addition the reported numbers of crimes in the data are highly skewed. For burglaries, 29 institutions reported no crimes over the

period from 2003 to 2005, the mean number was 41.6 and the maximum was 397 burglaries at Northwestern University. The data for robberies show 111 schools reporting zero crimes with a mean of 5.16 and a maximum of 122 at the University of Illinois at Chicago. And 80 schools reported zero motor vehicle thefts with the mean number of such crimes at 10.5 and the maximum of 179 at the Kansas City Art Institute. Given the nature of the data on the dependent variables the appropriate multivariate estimation strategy is negative binomial regression (Jacob and Lefgren 2003). Without data on the number of daily visitors or vendors on campus, I assume that the population at risk for burglary, robbery or car theft is proportional to the daily campus population of students plus faculty and staff.

Casino Proximity

Casino proximity is measured by the driving distance in miles from the official address of the college or university to the nearest casino as determined by the business locator application in Google maps. Of the 173 institutions of higher learning in my sample, 70 schools, or 40% of the sample, are located within 10 miles of a casino. I use an indicator variable equal to one for these 70 schools as my measure of proximity to a casino. In large part this is because a 10 mile radius around casinos has been used frequently in studies of the effect of casino proximity on the incidence of problem and pathological gambling (Welte et.al. 2004). On average, these 70 schools are 4.5 miles distant from the nearest casino while the remaining 103 colleges have a mean distance of 35 miles to the nearest casino.

College Characteristics

In addition to the size of the daily campus student, faculty and staff population exposed to potential crimes, I control for three other college characteristics. I control indirectly for the importance of on-campus housing by limiting my sample to higher education institutions that

have residential campuses. I follow the lead of previous studies of campus crime summarized above by including the undergraduate tuition (*Tuition)* and the male fraction of the undergraduate student body (*Percent Male)* as control variables. *Tuition* provides a measure of the potential gains from theft on a specific campus since it is a rough indicator of the average family income of the student body. And *Percent Male* takes into consideration the fact that most crimes are committed by young men (Herrnstein 1995).

The campus population and *Percent Male* are measured for the 2002-2003 academic year, at the beginning of the period for which the number of property crimes is recorded. In order to obtain sufficient tuition data for the full sample of schools I had to use information from the 2005-2006 academic year. The size, gender composition and relative tuition of a college are unlikely to vary much over a span of three years. The source for these college characteristics is the IPEDS Data Center web page run by the National Center for Educational Statistics (http://nces.ed.gov/IPEDS/datacenter/).

Community Characteristics

The literature on the economics of criminal activity provides us with a number of community characteristics that would be expected to influence the incidence of criminal activity at a campus location. Glaeser and Sacerdote (1999) examine the empirical and theoretical evidence for a positive correlation between the population size of a community, as a measure of the degree of urbanization, and the likelihood of criminal activity within that community. Crime is also higher in low income neighborhoods within communities. Wang and Minor (2002) and Ihlanfedlt (2006) argue that this is because the young residents of such areas may lack easy access to job opportunities. And Grogger (1998), Doyle, Ahmed and Horn (1999), Gould, Weinberg and Mustard (2002) and Machin and Meghir (2004) present empirical evidence to

demonstrate that the opportunity cost of criminal activity, measured by the wages available to young men in the local labor market, is negatively correlated with local crime rates.

I use the population of the county (*County Population)* in which a college is located as a control for the impact of community size on campus crime. I also include the percentage of persons over the age of 19 in poverty (*Poverty*) in the census tract in which the college or university is located as an indicator of the propensity to criminal activity of individuals in the neighborhood of the institution. These data are from the 2000 Census. And to control for the opportunity cost of crime for young men, I include a variable measuring the average monthly earnings in 2002 of male workers aged 19 to 21 (*Wage)* in the county in which the institution is located. This data is available at http://lehd.did.census.gov.

In order to control for any increase in police enforcement activity in response to the opening of casinos in these four states and in general to serve as an instrument for policing, I include the growth in county level per capita police spending (*Percent Change Police)* from 1992 (when casinos were newly located in these states) to 2002 (just prior to my observation period for crimes) as an additional community level variable. These data are from the Compendium of Government Finances from the 1992 and 2002 Censuses of Governments.[3] Finally, the regressions control for state fixed effects with dummy variables for campuses in Illinois, Indiana and Iowa.

Results

Table 1 displays means and standard deviations for the variables identified above for the entire sample of colleges and for sub-samples that group colleges by their proximity to the nearest casino. Quite substantial differences are noted for the number of crimes reported on the

[3] The data are available for 1992 at: www.census.gov/prod/2/gov/gc92-4/gc924-5.pdf and for 2002 at: www.census.gov/prod/2005 pubs/gc024x5.pdf.

campuses within 10 miles of a casino versus those reported by schools further away. The mean number of robberies reported for 2003 to 2005 was 3.6 times higher on campuses closer to the nearest casino while the mean number of car thefts was 2.9 times higher on these campuses. In contrast, the average number of burglaries was slightly higher at institutions of higher learning located further away from the nearest casino. These differences in the mean crime counts are especially notable since the mean campus population at risk for campus crime is almost the same for campuses within and beyond 10 miles of the nearest casino.

Tests for differences in means between the two sub-samples indicate statistically significant differences in the numbers of robberies and motor vehicle theft. The t statistics are 2.78 for robberies and 2.75 for car thefts, both of which are significant at the .01 level. The t statistic for the difference in the mean number of campus burglaries is 1.22, which is significant at just the .11 level. When looked at from the perspective of potential crime attributable to casino activity, the difference between robberies and motor vehicle theft versus burglaries seems to make sense. Burglaries require access to dorms and other buildings and many colleges have taken steps to make it more difficult for outsiders to gain such access (Fisher 1995). Those targeting the college population for crimes to support gambling behavior might indeed find it easier to carry out robberies and car thefts on campus. Burglaries constitute the largest category of campus crimes so these results seem to square with the limited evidence suggesting that students rather than outsiders are the predominant perpetrators of campus crime (Siegel and Raymond 1992)

Table 2 presents coefficient and robust standard error estimates from negative binomial regressions on the count data for campus robberies, car thefts and burglaries over the period from 2003 to 2005. The first regression in each category estimates the effects of proximity

to a casino on campus crime, controlling only for the logarithm of the daily campus population (students, faculty and staff). The number of all three types of crime increases with the campus population, with the coefficients suggesting an elasticity of about .5 for each type of crime. So in this sample crime does not increase in a proportionate manner with the population at risk. This might be the result of economies of scale in crime prevention programs, such as education, lighting, call boxes, etc., as well as in campus policing.

The coefficient estimates for the dummy variable identifying campuses within 10 miles of a casino parallel the analysis of mean differences discussed above. Robberies and car thefts are significantly higher on campuses in close proximity to a casino but burglaries are independent of proximity in this sample. These coefficient estimates suggest a large impact, with the count of robberies almost 170% higher and that of car thefts about 130% higher on campuses close to casinos. However, these differences are sharply lower than the mean differences since these regressions control for the campus population. The *alpha* coefficients measure the degree of dispersion in the data and, since the estimates are substantially greater than their standard errors in all three regressions, they indicate that negative binomial regression is the appropriate estimator for this data.

The second regression for each crime category includes the complete set of community and institutional controls. The effect of including these additional variables is to reduce the estimated coefficients on casino proximity in the robbery and car theft regressions, indicating now that both of these campus crimes are about 70% higher at locations within 10 miles of a casino relative to locations further away. In addition the estimated coefficient on casino proximity is now statistically significant at the .12 level in the robbery regression. Clearly adding the community and campus control variables reduces the mean differences in crimes between the

two groups of institutions. However, those colleges and universities located closer to a casino had substantially higher numbers of robberies and car thefts, even after introducing these controls. Burglaries remain unaffected by campus location *vis-à-vis* a casino.

The coefficient estimates for the control variables provide some interesting insights into the correlates of campus crime in my sample. There are more robberies and car thefts on campuses situated in more populous counties, although the elasticity of crime with respect to county population evaluated at the means is just .18 for car thefts and .20 for robberies. All three types of campus crime are positively correlated with the percentage of people in poverty in the census tract in which the college is located. The elasticity of crime at the means with respect to *Poverty* ranges from .35 for burglaries to .39 for car thefts to .70 for robberies. Clearly college students in this sample on urban campuses and/or in poverty neighborhoods faced a higher risk of crime.

The monthly wage of young men is negatively correlated with the number of all three crimes, suggesting that an increase in the opportunity cost of criminal activity has a deterrent effect. However, the standard errors on these coefficients are quite high, perhaps because there is little variation in this variable in this sample. While this means we need to read the results for this variable with a grain of salt, it is interesting to note the very high crime elasticities, around 2.0 at the means, with respect to the wage of young men in the local labor market in this sample.

The growth rate in per capita police spending in the county in which the campus is located had a negative effect on the number of robberies, statistically significant at the .07 level, and the number of car thefts, significant at the .12 level. It appears that colleges in communities that increased resources devoted to policing at a faster pace, benefitted from reduce crime on these two dimensions.

The college tuition level is positively correlated with the number of all three types of crime with the coefficient on this variable significant at the .05 level for robberies and car theft and at the .10 level for burglaries. Evaluated at the means, the elasticity of robberies and car thefts with respect to tuition level is quite high at around .80 in this sample. While this is consistent with the interpretation that higher tuitions reflect higher incomes which means more lucrative opportunities for property crime, more direct measures of student wealth and possessions held on campus would give us a clearer test of this hypothesis.

Previous studies of campus crime have generally found a positive relationship between the male fraction of the student body and crime, interpreting this outcome as indicative of the greater propensity toward criminal behavior among young men. In my sample, however, *Percent Male* is negatively correlated with robberies and motor vehicle thefts, albeit at low levels of statistical significance. If we think of male students as potentially more effective at resisting crime as well as more likely to engage in it that might help explain both the negative signs and lack of statistical significance in the results reported in Table 2.

Conclusion

Concern over the social costs of casino gambling has motivated careful examination of the impact of casinos on crime in their host communities. The limited number of academic studies of this issue support the conclusion that a mature casino located in a community for at least 3-5 years is correlated with a higher local crime rate. However, a few studies fail to uncover a statistically significant relationship between a local casino and local crimes rates and the existing evidence cannot distinguish between crimes concentrated among casino goers and those more widely spread in the community.

This paper looks at the link between proximity to a casino and property crimes committed on college campuses as a way of determining if casino related crime indeed spreads beyond the vicinity of the casino itself. I find some evidence that fails to reject the casino-crime hypothesis. In my sample, the number of robberies and motor vehicle thefts over the 2003-2005 period is substantially higher on college campuses located in closer proximity (within ten miles) of a casino. Campus burglaries, however, appear to be independent of campus location relative to a casino. While the introduction of control variables in a multiple regression format, using a negative binomial regression estimator to account for the large number of zeroes and highly skewed data, reduces the estimated effect of casino proximity in my sample, it is still the case that the counts of robberies and car thefts are estimated to be about 70% higher on campuses closer to casinos, controlling for other correlates of campus crime.

Campus crime is also closely correlated with several college and community characteristics. As we might expect, crime counts are considerably higher on campuses located in high poverty neighborhoods and more urbanized locations. In this regard criminal activity on college campuses is not much different from the general locus of crime in urban areas. Unlike businesses and higher income residents, however, colleges are not very mobile in the face of high local criminal activity. The significant systematic links between crime measures and several variables in the relatively small sample used here suggests that the crime data generated by Clery Act reporting are useful indicators of criminal activity. Further research into the determinants of campus crime counts may yield valuable insights into criminal activity at specific well-defined locations within communities.

Bibliography

Buck, Andrew J., Joseph Deutsch, Simon Hakim, Uriel Spiegel and J. Weinblatt (1991), "A Von Thunen Model of Crime, Casinos and Property Values in New Jersey," Urban Studies, 28(5), 673-686.

Chang, S. (1996), "Impact of Casinos on Crime: The Case of Biloxi, Mississippi," Journal of Criminal Justice, 24(5), 431-436.

Doyle, Joanne M., Ehsan Ahmed and Robert N. Horn (1999), "The Effects of Labor markets and Income Inequality on Crime: Evidence from Panel Data," Southern Economic Journal, 65(4), 717-738.

Eadington, William R. (1999), "The Economics of Casino Gambling," The Journal of Economic Perspectives, 13(3), 173-192.

Evans, William N. and Julie H. Topoleski (2002), "The Social and Economic Impact of Native American Casinos," NBER Working Paper 9198.

Fisher, Bonnie S. (1995), "Crime and Fear on Campus," Annals of the American Academy of Political and Social Science, 539, 85-101.

Fox, James Alan and Daryl A. Hellman (1985), "Location and Other Correlates of Campus Crime," Journal of Criminal Justice, 13(5), 429-44.

Gardner, Leigh, Joseph P. Kalt and Katherine A. Spilde (2005), Annotated Bibliography: The Social and Economic Impacts of Indian and Other Gaming. The Harvard Project on American Indian Economic Development.

Gazel, Ricardo C., Dan S. Rickman and William N. Thompson (2001), "Casino Gambling and Crime: A Panel Study of Wisconsin Counties," Managerial and Decision Economics 22(1/3), 65-75.

Glaeser, Edward L. and Bruce Sacerdote (1999), "Why is There More Crime in Cities?" Journal of Political Economy, 107(6), S225-S258.

Grinols, Earl L. and David B. Mustard (2006), "Casinos, Crime, and Community Costs," The Review of Economics and Statistics, 88(1), 28-45.

Grinols, Earl L. and David B. Mustard (2008), "Correctly Critiquing Casino-Crime Causality," Econ Journal Watch, 5(1), 21-31.

Grogger, Jeff (1998), "Market Wages and Youth Crime," Journal of Labor Economics," 16(4), 756-791.

Gould, Eric D., Bruce A. Weinberg and David B. Mustard (2002), "Crime Rates and Local Labor Market Opportunities in the United States: 1979-1997," The Review of Economics and Statistics, 84(1), 45-61.

Ihlanfeldt, Keith R. (2006), "Neighborhood Crime and Young Males' Job Opportunity," Journal of Law and Economics, 44, 249-283.

Jacob, Brian A. and Lars Lefgren (2003), "Are Idle Hands the Devil's Workshop? Incapacitation, Concentration, and Juvenile Crime," The American Economic Review, 93(5), 1560-1577.

Kearney, Melissa Schettini (2005), "The Economic Winners and Losers of Legalized Gambling," National Tax Journal, 58(2), 281-302.

Koo, Jun, Mark S. Rosentraub and Abigail Horn (2007), "Rolling the Dice? Casinos, Tax Revenues, and the Social Costs of Gaming," Journal of Urban Affairs, 29(4), 367-381.

Lipka, Sara (2009), "In Campus-Crime Reports, There's Little Safety in the Numbers," The Chronicle of Higher Education, 55(21), A1.

Machin, Stephen and Costas Meghir, (2004), "Crime and Economic Incentives," The Journal of Human Resources, 39(4), 958-979.

McMillen, Daniel P. (2008), "Testing for Monocentricity," in Richard j. Arnott and Daniel P. McMillen (eds.) A Companion to Urban Economics, Blackwell Publishing, 128-140.

McPheters, Lee R. (1978), "Econometric Analysis of Factors Influencing Crime on the Campus," Journal of Criminal Justice, 6(1), 47-52.

Miller, William J. and Martin D. Schwartz (1998), "Casino Gambling and Street Crime," Annals of the American Academy of Political and Social Science, 556, 124-137.

Morriss, Susan B. (1993), "The Influence of Campus Characteristics on College Crime Rates," Thirty-Third Annual Forum of the Association for Institutional Research.

Morse, Edward A. and Ernest P. Goss (2007), Governing Fortune: Casino Gambling in America. Ann Arbor: The University of Michigan Press.

National Gambling Impact Study Commission (1990), National Gambling Impact Study Commission Final Report, Washington: U.S. Government Printing Office.

Shaffer, H. J., R.A. LaBrie and D. LaPlante (2004), "Laying the Foundation for Quantifying Regional Exposure to Social Phenomena: Considering the Case of Legalized Gambling as a Public Health Toxin," Psychology of Addictive Behaviors, 18, 40-48.

Siegel, D.G. and C.H. Raymond (1992), “An Ecological Approach to Violent Crime on Campus,” Journal of Security Administration, 15(2), 19-29.

Sloan, John J. (1994), “The Correlates of Campus Crime: An Analysis of Reported Crimes on College and University Campuses,” Journal of Criminal Justice, 22(1), 51-61.

Walker, Douglas M. (2008), “Do Casinos Really Cause Crime?” Econ Journal Watch, 5(1), 4-20.

Wang, Fahui and W. William Minor (2002), “Employment Access and Crime Patterns in Cleveland,” Annals of the Association of American Geographers, 92(3), 435-450.

Welte,J, W. Wieczorek, G.M. Barnes, M. Tidwell and J.H. Hoffman (2004), “The Relationship of Ecological and Geographic Factors to Gambling Behavior and Pathology, “ Journal of Gambling Studies, 20, 405-23.

Volberg, R.A. (2004), “Fifteen Years of Problem Gambling Prevalence Research: What Do We Know? Where Do We Go?” eGambling: The Electronic Journal of Gambling Issues, 18 http://www.camh.net/egambling/issue10?ejgi_10_volberg.html.

Volkwein, J. Fredericks, Bruce P. Szelest and Alan J. Lizotte (1995), “The Relationship of Campus Crime to Campus and Student Characteristics,” Research in Higher Education, 36(6), 647-670.

Table 1: Means and Standard Deviations

Variable	Full Sample N = 173	Within 10 Miles of a Casino N = 70	Beyond 10 Miles N = 103
Burglaries	41.61 60.18	34.81 44.54	46.23 68.64
Robberies	5.16 15.52	9.07 21.52	2.50 8.68
Car Thefts	10.48 27.25	17.27 39.04	5.87 12.98
Casino Proximity	.4046 .4922		
Log Campus Population	7.88 1.36	7.97 1.36	7.81 1.35
County Population *(tens of thousands)*	79.00 159.4	136.46 195.76	39.94 114.51
Poverty	17.76 16.98	15.39 12.09	19.38 19.52
Wage *($ Hundreds)*	11.80 1.48	12.15 0.94	11.56 1.73
Percent Change Police	71.51 32.44	67.84 27.18	74.00 35.49
Tuition ($ Thousands)	15.30 8.41	16.02 7.90	14.80 8.74
Percent Male	43.31 14.39	39.94 12.59	45.60 15.12
Illinois	.3352 .4734	.4000 .4934	.2912 .4565
Indiana	.1965 .3985	.0857 .2819	.2718 .4470
Iowa	.1907 .3940	.1857 .3917	.1942 .3975

Table 2: Negative Binomial Regression Estimates, Campus Crimes 2003-2005

	Robberies		**Car Thefts**		**Burglaries**	
Constant	**-3.39** **(1.27)**	-.614 (2.74)	**-2.38** **(1.08)**	.147 (2.33)	-.690 (.780)	-.688 (1.35)
Log Campus Population	**.482** **(.146)**	**.390** **(.128)**	**.477** **(.116)**	**.507** **(.107)**	**.525** **(.093)**	**.494** **(.092)**
Casino Proximity	**1.70** **(.464)**	.705 (.449)	**1.32** **(.431)**	**.739** **(.369)**	-.085 (.222)	-.067 (.189)
County Population		**.002** **(.001)**		**.002** **(.0008)**		-.0007 (.0006)
Poverty		**.039** **(.014)**		**.022** **(.009)**		**.019** **(.005)**
Wage		-.149 (.182)	.	-.181 (.159)		-.041 (.062)
Percent Change Police		-.011 (.006)		-.007 (.004)		-.0006 (.0025)
Tuition		**.051** **(.025)**		**.055** **(.019)**		.023 (.014)
Percent Male		-.008 (.012)		-.014 (.012)		.002 (.007)
State Dummies	No	Yes	No	Yes	No	Yes
alpha	**6.41** **(1.83)**	**4.76** **(0.87)**	**4.12** **(0.62)**	**2.90** **(0.41)**	**1.60** **(0.22)**	**1.46** **(0.19)**
Log Pseudo-likelihood	-315.6	-304.2	-449.7	-432.2	-757.3	-749.3
Wald Chi^2	**31.66**	**77.37**	**25.77**	**96.79**	**36.47**	**126.43**

These results are estimated using the nbreg routine in STATA with a mean dispersion assumption. There are 173 observations. Robust standard errors are in parentheses. Bold indicates significant at the .05 level or better.