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Kathryn Lee April 12, 2012

Gambling with Hawaiian Home Land: The Potential Effects of a Casino in Hawaii on Income Differences between Native and Non-Native Populations

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Abstract

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Using data on Native American reservation counties, this paper provides the first empirical study of the proposed casino in Hawaii as outlined in Hawaii House Bill 1227, which would establish a casino on Native Hawaiian Home Land and allocate generated revenue to the Native Hawaiian Home Land trust fund. The results indicate that the number of "Las Vegas-style" casinos decrease the household income gap between native and non-native peoples and the presence of three or more "Las Vegas-style" casinos raise household income for native people. A discussion on cultural issues in Hawaii which will factor into the approval of a gaming venture is detailed in the conclusion.

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I: Introduction

Economic inequality between non-natives and Native Hawaiians in Hawaii has become increasingly prevalent. Asian and white households, now encompassing 64% of Hawaii's population, make an average of $68,333 in household income, about 20% more annually than Native Hawaiian households (American Community Survey, 2010). The percentage of Native Hawaiians in Hawaii living in poverty has consistently been greater than both the Hawaii state and the US poverty level. In 2010, 15.6% of the Native Hawaiian population in Hawaii reported below poverty, significantly higher than the 6.9% measure for all races in Hawaii and 10.5% national measure (American Community Survey, 2010). Even with significant economic development in Hawaii, initially from the agricultural boom of sugar and pineapple plantations in the late 1800s and later, from the commercialization of the islands through the tourism industry, the majority of the Native Hawaiian population falls at the bottom of the socioeconomic ladder. Considerable grants and trust funds for Native Hawaiians in Hawaii, aiding in land ownership and education, were created to promote Native Hawaiian self-sufficiency. Is there an alternative to alleviate Native Hawaiian poverty and bridge the gap in Hawaii's population?

As Hawaii is one of two states in the US where gambling is illegal, the other being Utah, many groups have presented proposals for the legalization of gaming. Proponents of gaming in Hawaii argue that legalized gambling could serve as a second source of revenue, aid in job creation statewide, and support Hawaii's main industry of tourism. In January 2011, the Hawaiian Affairs House Committee proposed a bill that "authorizes the Hawaiian homes commission to allow gaming on Hawaiian Home Lands and designate specific Hawaiian Home Lands parcels for the purposes of establishing casino gaming operations" (Hawaii House Bill 1227, 2011). The casino would operate on land designated to Native Hawaiians through The

Hawaiian Homes Commission Act of 1920, which was created to distribute land to the Native Hawaiian population in Hawaii for activities where "the general welfare and conditions of Native Hawaiians are improved" (Hawaiian Homes Commission Act, 1920). 80% of the tax revenue generated by the casino on monthly gross receipts would be deposited into the Hawaiian Home Lands trust fund, a fund designated to aid in the economic development of the Native Hawaiian community, and would become a major source of funding for the trust. Though Hawaii H.B. 1227 never advanced beyond an initial committee reading, the bill showcases actions being taken to improve the status and overall welfare of Native Hawaiians in Hawaii through a gaming venture.

The purpose of this paper is to quantify the proposed casino outlined in H.B. 1227 and study its potential effects on economic inequality in Hawaii. This paper uses data on Native American reservation counties to theorize these effects. As the proposed casino in H.B. 1227 closely mimics the way in which Native American casinos are established and operated, I utilize county level data for those counties that host Native American reservations to model a casinos effect on household income differences.

This paper provides the first empirical study of the proposed H.B. 1227 and for any tribal casino in Hawaii. Broadly, this study examines an income shock on income and wealth differences across racial groups and fits into literature on income redistribution, economic inequality, and tribal gaming in general. Literature on Native American tribal gaming, some of which is referenced in section II, often focuses on a tribal casinos effect on the Native American population individually or spillover effects on neighboring counties. Rather, this paper focuses on the income differences between racial groups and how the difference changes with a tribal casino.

The results from this study suggest that, controlling for characteristics like educational attainment, employment, and household size as well as inherent differences amongst states, the total number of Class III tribal casinos decreases the household income gap between the Native and non-native population across reservation counties by $504.81. Further, three or more Class III casinos have a positive effect on Native income directly, raising it by approximately $2,500 annually. These results are important to hypothesize effects of a casino in Hawaii and to recommend a course of action and other areas to consider for this gaming venture.

II. Background

A. Why Casinos May Affect Income Differences

Casinos are a source of income redistribution, a transfer of funds that can affect income differences between racial groups. The Indian Gaming Regulatory Act (IGRA) specifies that all revenues produced from Native American gaming establishments be allocated to fund tribal government operation and Native American programming (Indian Gaming Regulatory Act, 1988). About a third of all tribes have Revenue Allocation Programs (RAP) that distributes revenue on a per capita basis to tribal members. A few other tribes, specifically those with Class III establishments, have agreements to make annual payments to state governments to secure exclusive operation rights. As casino revenues are apportioned to tribal governments, effectively redistributing generated funds to the native population, income differences between the natives and non-natives can be affected.

Because no casino has ever operated in Hawaii, data on Native Americans living on reservation counties represents Native Hawaiians for the purposes of quantifying H.B. 1227. While the total population of Native Americans across the United States is much greater than

that of Native Hawaiians, the two groups share similar economic characteristics.[1] Both populations have similar rates of school enrollment, educational attainment, unemployment, and poverty. Median household income for the Native American population is $36,365 and median household income for the Native Hawaiian population is $54,321 (American Community Survey, 2010). This difference is notable but may be explained by the differing concentrations in industries for each group – Native Hawaiians have higher percentages participating in the finance and insurance industry, 6% versus 4%, and professional, scientific, and management services, 11% versus 8% (American Community Survey, 2010). Still, both Native American and Native Hawaiian populations remain at the bottom of the socioeconomic ladder.

Native American reservation county data serves as a good proxy to study the possible implications of a Native Hawaiian casino on the household income gap. The casino outlined in H.B. 1227 would operate similarly to Class III tribal casinos. Furthermore, the proposed casino would operate on designated land for Native Hawaiians. While the state of Hawaii has only five counties across eight islands, Hawaiian Home Lands span multiple counties and are areas where both members of the non-native and native populations reside. Similarly, Native American reservation counties, though more widely dispersed across the United States, often encompass more than just the reservation itself and have both non-natives and Native Americans cohabitating. A Hawaii Gaming Commission, like the National Indian Gaming Commission, would be created to oversee casino practices.

B. History of Native American Gaming

Following the Supreme Court ruling of California vs. Cabazon in 1987 which "removed virtually all existing restrictions of gambling on Indian reservations" (National Indian Gaming

[1] Native Americans and Native Hawaiian are groups as defined by the Census. In this study, Native American encompasses those who designate themselves as 'American Indian and Alaska Native Only' and Native Hawaiians are those who are 'Native Hawaiian and Other Pacific Islanders Only'.

Commission), reservation casinos began to take root and serve as revenue generating sources for Indian tribes. In 1988, the Indian Gaming Regulatory Act (IGRA) was established, providing a "statutory basis for the operation of gaming by Indian tribes as a means of promoting tribal economic development, self-sufficiency, and strong tribal governments" (25 U.S.C. 2702, 1988) and to ensure that the Indian tribe is the "prime beneficiary of the gaming operation" (25 U.S.C. 2702, 1988).[2] The IGRA defines casinos in three classes:

Class I: Social games with prizes of nominal value;

Class II: Games such as bingo, pull tabs, lotto, punch boards, tip jars, and other games similar to bingo which are played for prizes, including monetary prizes, with card bearing numbers or other designations, and;

Class III: All forms of gaming that are not Class I or Class II, specifically Las Vegas-style gambling of casino games, slots, and card games.

Tribal governments have sole authority over Class I gaming facilities. Similarly, tribal governments regulate Class II casinos but Class II facilities also require the oversight of the National Indian Gaming Commission (NIGC), a governing committee over all gaming established on reservation land. Class III establishments are under regulation by the NIGC and only operate in states that allow gambling elsewhere in that state. Class III gaming facilities must be in accordance with established *tribal-state compacts*, agreements between the Indian tribe and their resident state that govern the conduct of gaming activities.

Components of the IGRA have been historically in conflict with respective state laws. Many tribes began operation of casino facilities before approval of their tribal-state compacts. For tribes in California, a misalignment with California state law and the IGRA halted growth of Indian gaming in the 1990s – California state government looked to "close down lucrative

[2] Section II Part B largely summarizes 25 U.S.C. 27

gambling machines on tribal land and a legal debate flared over the issue" (UC Berkeley Institute of Government Studies, 2010). After decades of negotiation, ultimately leading to an agreement where "four of California's wealthiest tribes were granted exclusivity to new slot machines" (UC Berkeley Institute of Government Studies, 2010), California tribal-state compacts were renewed and solidified in 2008.

There are currently 240 tribes operating 460 gaming establishments in 28 states (National Indian Gaming Commission). Of the 28 states, 24 allow Class III gaming, and 4 states, Alabama, Alaska, Nebraska, and Texas, are limited to Class II establishments only. The tribal gaming industry generated $26.2 billion in gross revenue and 628,000 tribal casino and casino-related jobs in 2009 (National Indian Gaming Association, 2009).

C. How Native Gaming Could Have an Effect

Certain tribes experience immense economic growth with the implementation of casinos. Alesch (1996) argues that "gaming made it possible [for the Oneida Tribe] to reach levels of prosperity" (Alesch, 1996, 1). Since building their casino in 1991, the Oneida Tribe of Indians of Wisconsin has been prosperous in their venture and use casino generated revenue to invest in other property and human capital for the Oneida Tribe (Alesch, 1996, 7). In 1995, 84.7% of the tribe's total income of about $203 million was from gaming, with only 7.4% coming from non-gaming tribal endeavors (Alesch, 1996, 12). Additionally, the Oneida casino has had net positive effects on the state of Wisconsin and "an even bigger net positive effect on the economies where the facilities are located […] a net gain of $400 million from the casino is displayed for areas within 35 miles of the gaming establishment" (Alesch, 1996, 16). For the Oneida Tribe of Indians of Wisconsin, the implementation of a casino has led to higher revenues, further investments, and positive economic effects for Green Bay County.

Not all tribes with gambling facilities experience success like the Oneida Tribe. Most tribes with gambling facilities experience more moderate revenue generation while others even experience losses (National Gambling Impact Study Commission, 1999). The Native American Rights Fund argues that gaming on Indian reservations has not "appreciably lowered the high levels of poverty on Indian lands nationwide [and that] not all tribes – gaming and non-gaming – are much better off" (National American Rights Fund, 2011).

Besides revenue generation, casinos have broader implications on Native American population characteristics. Tribal gaming not only creates jobs within a casino but also promotes job generation in other parts of the tribal community and beyond – about 384,000 jobs have been created in Native American gaming and ancillary facilities and another 19,000 in capital construction of these establishments (National Indian Gaming Association, 2009). However, employment in these facilities is not necessarily dominated by tribal member participation. Vallen, Cothran, and Combrink (1998) find that the percentage of Native American employees in reservation casinos proved to be a function of the size of the tribe with most upper management positions filled by non-native people – Native American employees fill many of the hourly paid positions.

This employment effect could impact income differences between natives and non-natives. Moreover, a change in the income gap could allude to immigration effects. An increase or a decrease in the income gap will result from relative changes between the two populations. With the presence of casinos, high-income native people may return to the reservation which may have additional positive spillovers and decrease the income gap. On the other hand, tribal casinos may attract low-type people, which may yield all around negative effects and increase the income gap.

The number of years a casino has been in operation also plays a role in a casinos effect on Native American income and poverty status. Evans and Topoleski (2002) find that counties with or near casinos experience economic benefits and that after four years of operation, reservations experience increased employment and decreasing poverty rates. Concurrently, bankruptcy, violent crime, auto thefts and larceny increase 10 percent with the opening of casinos. While their results yield mixed social and economic implications, Evans and Topoleski argue that ultimately, the tribes themselves are truly the largest beneficiaries of tribal gaming operations (Evans, Topoleski, 2002, 45).

Evans and Topoleski (2002) note many positive benefits for the tribes that host casinos. My study differs from their study as I focus on the effect of a casino on the income difference between racial groups. If I find that there is no change between the native and non-native income gap, then my study would allude to the fact that both groups are benefitting from the tribal gaming venture.

III. Data and Empirical Methods

A. Difference in Differences Estimation

While I am interested in Hawaii, I will focus on Native American reservation data to determine the effect of a casino on the income gap between the two populations using a difference in differences model specified as:

$$Y_{its}^{Non-Native} - Y_{its}^{Native} = \alpha + \beta(\text{anycasino})_{is} + \gamma_1(\text{dyear1980}) + \gamma_2(\text{dyear1990}) + \gamma_3(\text{dyear2000}) + \delta D_{its} + \phi\vartheta_s + \psi(X_{its}^{Non-Native} - X_{its}^{Native}) + \varepsilon_{its}$$

The dependent variable is the difference between the median household incomes of non-natives and native populations for county *i* at time *t* in state *s*. The explanatory variable *anycasino* equals one if a casino ever exists in a county. *dyear1980, dyear1990,* and *dyear2000* are dummy variables for the decades 1980 (encompassing 1969-1979), 1990 (1979-1989), and

2000 (1989-1999) respectively. A dummy variable for the 2010 decade (1999-2009) exists but is not included in the model: the coefficients on *dyear1980, dyear1990,* and *dyear2000* are in comparison to 2010. ϑ_s denotes state fixed effects, such as state policies and differences in Native American culture, so reservation counties with and without casinos are compared in the same state.

$X_{its}^{Non-Native} - X_{its}^{Native}$ represents the differences between additional county variables. Educational attainment variables, high school (*H.S. gap*) and college (*College gap*), account for the differences between the educational attainment rates of the populations. I include difference in labor force variables, specifically employment rates (*Employment gap*) and labor force participation (*Labor force gap*), as employment status can contribute to income gaps. Lastly, I include difference in household size for large households (*Large household gap*), those of five or more people, to control for potential larger household sizes for the native population versus the non-native population.

D_{its} is the interaction term, determining a casino's presence in county i at time t in state s. Keeping all other previously noted explanatory variables in the model, I test five interaction terms, using a different interaction term per regression: (1) the presence of a casino, (2) the total number of casinos, (3) what decade of operation a casino is in, (4) the total number of Class II casinos, and (5) the total number of Class III casinos. This interaction term is the variable I will focus on most heavily.

B: Data Collection

To determine which counties host tribal casinos, I collect the zip codes of the 460 casinos

from the National Indian Gaming Commission website.[3] Using geographic coordinates of each casino based on its current postal code, a casino's location is placed on a map of county borders for the United States. Tracking county boundaries historically, as many have been redrawn over certain time frames, I aggregate the total number of casinos at a given time with 1980, 1990, 2000, and 2010 Census county level data of counties that contained all or part of a Native American reservation within them: 1980 serves as a base year, where no casinos were supposed to be in operation[4]. As zip codes are formulated for use by the postal office, some of the counties determined from the zip codes do not match with a reservation county. In such cases, the observations are dropped from the data set: approximately 32 data points representing 20 casinos fell in this category.

Because the opening dates of the various casinos nationwide have not been compiled into a single document, I use casino websites such as 500nations.com and wageringresouce.com, state gaming commission documents and Internet search engines to attain the most accurate opening date for each casino. If the opening date cannot be found, I estimate it with the compact approval date as listed by the National Indian Gaming Commission.

Native Americans are the native population and Whites represent the non-native population in my data set, as there is the most data on whites across the majority of counties. I include income at the household, family, and per capita level, poverty status, educational attainment and employment variables for each group in the data set. All income values are scaled to a 2010 measurement using the Consumer Price Index. I also include casino variables,

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[3]Casinos located in gas stations, restaurants, or other such venues were not included as many of them only had a few pull-tabs or bingo stations for use. Alaska casinos were also not included: only one Class II facility of the four casinos recognized by the NIGC was willing to disseminate information.

[4] The Oneida Bingo & Casino facility in Green Bay, Wisconsin and the Seminole Indian Casino: Hollywood in Hollywood, Florida were opened in 1976 and 1979 respectively as Class II facilities and are two observations in my data set where casino operation began in the decade 1980, which encompasses all open dates from 1969 through 1979.

indicating the presence of a casino, what decade of operation the casino is in, and counter variables for the total number of all tribal casinos and total number by Class of casino. Selected summary statistics for the reservation counties are in Table 1**.**

Looking at the mean values of income alone, an income gap exists at all levels, household, family, and per capita, between the two populations. As income is a measure of poverty, the percentage of Native Americans below poverty is much higher than whites. Education attainment levels seem to be surprisingly close but may be due to the wider range for Native Americans across the counties where minimum values are 0% and maximum values are 100%.

Table 2 summarizes the household income gap that exists between white and Native American populations in reservation counties. The difference between mean household income of casino counties and mean household income of non-casino counties is displayed as *Difference*. *Difference* is positive in 1980 and 1990 for both whites and Native Americans, indicating that reservation counties with casinos have higher household income than those without. *Difference* is negative in 2000 and 2010 for both populations but more negative for whites in both decades. *Difference in Differences* is then calculated as *Difference* White – *Difference* Native American.

Looking at income differences at the household level between non-native (white) populations and native (Native American) populations in counties hosting reservations, the difference in differences measure becomes more and more negative starting from 1980 through 2010, indicating that the income gap between white households and Native American households is decreasing. This increasingly negative value is due in large part to white household income in counties with casinos diverging in comparison to counties without casinos. Further, Native American household income for counties with and without casinos seems to converge.

Though results from this study will be taken from Native American population data, the variables used to try to explain racial income differences, specifically education, employment, and household size, are similar for both the Native American and Native Hawaiian population. Tribal casinos for Native Hawaiians would be established very similarly to Native American casinos, making Native American reservation county data the best proxy for my study. For these reasons, Native Americans are useful to study possible effects for the Native Hawaiian population in Hawaii.

IV. Results

Using the difference in differences model specified in Section III and controlling for differences in employment, education attainment, and household size, the results from five regressions, each using a different interaction term, (1) Casino present at given time, (2) Total number of tribal casinos, (3) Total number of Class II casinos, (4) Total number of Class III casinos, and (5) Decade of operation, are detailed in Table 3.

Of the five interaction terms, only (2) Total number of tribal casinos and (3) Total number of Class III casinos are statistically significant at the 10% level and show that the total number of tribal casinos diminishes the household income gap by $415.93 and the total number of Class III facilities diminishes the income gap by $504.81. The decade a casino is in operation is not significant for all four decades but is close to being significant at the 10% level for decade 2 and decade 4. This may be due to the fact that only two casinos, which are Class II, consider their first decade of operation to be 1980 while many more consider 1990 to be their first. Interestingly, the coefficient on the 2^{nd} decade shows a negative coefficient while the 4^{th} a positive, suggesting that the amount of time a casino is in operation affects the relative incomes

of the two populations – initially, a casino can decrease the income gap but this effect is only temporary.

In Table 3, I control for education attainment and employment differences, yielding the effect of tribal casinos on income gaps net of how it changes education and employment levels. Leaving out employment and education variables in the regressions as seen in Table 4 and Table 5**,** I can see the total effect of a casino. With the elimination of employment differences in Table 4 and education differences in Table 5, the variables that were significant in Table 3 are now insignificant but the signs and magnitudes of their point estimates are very similar. This indicates that the total number of casinos and total number of Class III casinos are not highly correlated to employment or educational attainment. The casino variables are now insignificant as the elimination of employment and education variables increase the standard error. These results suggest that the tribal casinos impact on the income gap is not due to changes in the employment gap or education gap.[5]

Because the total number of casinos and the total number of class III casinos are highly correlated, with a correlation coefficient of .964, it appears that the class of casino and further the total number of each class is what significantly impacts the income gap. I look at Class II and Class III facilities separately given the notion that the class of casino is what ultimately impacts the income gap. Using the same strategy as before, I create variables to determine the effects of Class II casinos and Class III casinos separately. For Class II casinos, a variable labeled "Ever had a Class II Casino" equals one if a Class II casino ever exists in a county. I use three different interaction terms, (1) Decade of Operation, (2) Class II present at given time, and (3) Total number of Class II casino, in three separate regressions, which are summarized in Table 6a. This

[5] A limitation of this study is that population counters are not included in the model. Changes in population totals between the two groups over time could help to explain changes in the income gap, alluding to a migration effect.

is replicated for Class III casinos as well. The variable "County ever had a Class III Casino" equals one if a Class III casino ever exists in a county. I use three interaction terms, (1) Decade of Operation (2) Class III present at given time, and (3) Total number of Class III casino in three separate regressions. These results are in Table 6b.

For the regressions specified on Class II casinos in Table 6a, "Class II present at given time" and "Total number of Class II" are both statistically insignificant. This result is not surprising as the number of Class II casinos is insignificant at the aggregated level in the previous regressions in Table 3. The third decade of operation of a Class II casino "Decade 3 of Operation" is statistically significant at the 10% level, indicating that over a time frame of thirty years in operation, a Class II facility decreases the income gap between native and non-native populations. This result may be skewed as only five Class II facilities have reached a third decade of operation as a Class II facility – many casinos that begin as Class II facilities become Class III with the approval of tribal-state compacts.

For the regressions specified on Class III casinos in Table 6b, "Class III present at given time" is significant at the 10% level and "Total number of Class III casino" is significant at the 5% level. Unlike Class II facilities, the amount of time a Class III facility is in operation does not seem to have as convincing effects, only showing significance at the 20% level for "Decade 1 of Operation" and at the 15% level for "Decade 2 of Operation".

Looking only at those variables that were statistically significant in Table 6b, the negative coefficients on "Total number of Class III casino" and "Class III present at given time" represent a decrease in the income gap holding all other differences between the racial groups constant. A decrease in the income gap could result from changes in household income for non-natives only, changes in household income for Natives only, or changes for both. To understand reasons

behind this decrease, I run regressions on Native American and white household income separately, focusing on the casino variables that showed significance. Table 7 outlines these regressions on the native and non-native populations separately.

The total number of casinos and the presence of a Class III casino (*Class III present at a given time*) are not significant even at the 10% level on Native American household income or white household income in reservation counties. The total number of Class III casinos is significant at the 5% for Native American household income only – with more Class III facilities, Native American household income is higher by $678.66 a year on average.

To investigate how many Class III casinos are needed to have an effect on household income for Native Americans**,** I group the presence of three or more Class III casinos in one variable as only 11% of counties had more than three casinos – 70% of counties had one casino and 19% had two. Results in Table 8 reveal that only one or two Class III casinos (*One Class III and Two Class III)* do not have a significant impact. However, three or more Class III casinos yield a statistically significant outcome, raising Native American household income by $2,522.44 annually. Though only significant at the 15% level, "Three or more Class III casinos" decreases White household income by $2,228.04. The magnitude and opposite signs of these two point estimates perhaps encompass income redistribution from one population to another, showing that casino revenue generation is done on a local scale.

V. Conclusion

This paper aims to theorize the potential impact of a casino in Hawaii on economic inequality between native and non-native populations by using data on Native American reservation counties. In a similar way that the Indian Gaming Regulatory Act looks to assist the Native American population, Hawaii House Bill 1227 targets the Native Hawaiian population in

hopes of helping them reach economic prosperity through a gaming venture.

The results from this study show that for the household income gap between the non-native population and the native population, the total number of casinos and the total number of Class III casinos, on average, decrease the income gap by $415.93 and $504.81 respectively. This decrease in the household income gap appears to result from the number of Class III casinos effect on Native American household income alone, which raises it on average $678.66 annually. The presence of three or more Class III casinos yields an even greater positive effect, as the coefficient on "Three or More Class III" in Table 8 is 2,522.44. A similar opposite value for non-native income for "Three or More Class III" alludes to casino revenue as a local level income transfer.

If approved and structured correctly, the establishment of the casinos outlined in Hawaii H.B. 1227 could help to improve the income gap between Native Hawaiians and other races in Hawaii as well as raise household income for the Native Hawaiian population. Class III casino gaming operations, especially the presence of three or more in a given area, may generate the necessary revenue to sustain the Hawaiian Home Land trust fund and assist the Native Hawaiian population in reaching new levels of prosperity. Though not a perfect match, the studies in this paper using Native American tribal reservation county data provide the most accurate proxy to quantify H.B. 1227.

While this paper comments on the effect of a casino on household incomes for racial populations individually as well as marginal differences between them, it does not investigate social implications of casinos, such as crime rates and gambling addictions. Many prior studies on Native American reservations attribute negative externalities or "social ills" with the opening of casinos. Additionally, the establishment of a casino targeting Native Hawaiians could have an

impact on population characteristics. The Native Hawaiian population currently has higher concentrations of workers in the finance and insurance industry as well as the professional, scientific, and management industry than the Native American population. Could a casino on Hawaiian Home Lands alter this industry concentration, shifting it towards the gaming industry? Studies on the social effects of casinos as well as industry and occupation shifts can provide further insight.

One of the main reasons the legalization of gambling in Hawaii has been in debate is the potential effect a casino could have on Hawaii's island culture. The presence of a casino will bring further development and commercialization to areas outside tourist-centered regions. If H.B. 1227 is passed, casinos will be located on designated Hawaiian Home Lands, which are mostly located in rural areas of the islands, ones not yet touched by the tourism industry. Communities throughout the state have rallied to insulate rural areas from large-scale development that dominates certain tourist areas. The implementation of a casino on Hawaiian Home Land will also be met with resistance from the Native Hawaiian community. The development and operation of a casino takes away land from Native Hawaiians already looking to take hold of it: over 40,000 applicants are waiting to receive land for agricultural, residential, and pastoral purposes (Department of Hawaiian Home Lands, 2010). To engender support for Hawaii H.B. 1227, clarification on how the Hawaiian Home Land trust fund will disseminate funds, be it to individuals or to overall development, as well as further economic and social impact reports on Hawaii's community are needed.

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Table 1: Selected Summary Statistics

Variable	N	Mean	Std. Dev.	Min	Max
W Household Income	1836	$ 44,137.74	$ 12,031.48	0	$ 115,688.10
NA Household Income	1792	$ 32,655.52	$ 14,875.74	0	$ 250,257.20
W Family Income	1836	$ 52,846.76	$ 13,761.25	0	$ 134,482.30
NA Family Income	1783	$ 36,385.43	$ 17,545.12	0	$ 250,257.20
W Per Capita Income	1836	$ 21,865.34	$ 6,254.04	0	$ 64,237.26
NA Per Capita Income	1799	$ 13,416.14	$ 7,600.19	0	$ 176,280.00
Percent W Below Poverty	1374	9.45%	4.23%	0.00%	29.81%
Percent NA Below Poverty	1354	21.49%	15.72%	0.00%	100.00%
Percent W High School Degree	1832	34.46%	6.27%	7.45%	56.61%
Percent NA High School Degree	1779	33.26%	12.78%	0.00%	100.00%
Percent W College Degree	1832	25.94%	7.67%	7.28%	54.96%
Percent NA College Degree	1779	25.32%	14.22%	0.00%	100.00%
Percent W Employed	1832	93.80%	3.01%	63.44%	100.00%
Percent NA Employed	1778	84.51%	10.69%	0.00%	100.00%
Percent W Not in Labor Force	1832	38.99%	7.60%	3.24%	69.70%
Percent NA Not in Labor Force	1786	41.80%	12.23%	0.00%	100.00%

Note: W represents White/non-Native; NA represents American Indian/Native. White and American Indian as defined by the Census Bureau.
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data. U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 2: Difference in Mean Household Income

Counties	1980		1990		2000		2010	
	W	NA	W	NA	W	NA	W	NA
Casino	47,407.33	35,428.81	42,799.42	31,710.40	45,370.29	36,064.54	46,361.07	35,644.43
	(2250.69)	(9889.26)	(2476.95)	(2935.36)	(753.54)	(804.86)	(597.41)	(744.08)
No Casino	39,281.64	27,262.49	42,212.16	29,907.80	47,116.25	36,475.19	48,351.41	35,833.14
	(580.84)	(720.92)	(605.43)	(810.42)	(753.54)	(761.21)	(732.38)	(972.68)
Difference	8,125.69	8,166.32	587.26	1,802.59	-1,745.95	-410.65	-1,990.34	-188.71
	(8467.84)	(10169.22)	(2736.60)	(3643.28)	(1123.74)	(1306.52)	(1005.13)	(1296.23)
Difference in Differences	-40.63		-1215.33		-1335.30		-1801.63	

Note: Values in parentheses are standard errors.
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 3: Regression Results for Tribal Casino Explanatory Variables

VARIABLES	(1) Income gap	(2) Income gap	(3) Income gap	(4) Income gap	(5) Income gap
County ever had a casino	485.217	392.775	73.500	395.195	498.642
	(671.441)	(697.065)	(737.506)	(692.484)	(652.459)
(1)Casino present at given time	-777.667				
	(660.764)				
(2)Total # of tribal casinos		-415.930*			
		(240.650)			
(3)Total # of Class II			311.721		
			(708.247)		
(4)Total # of Class III				-504.814*	
				(274.671)	
(5)Decade 1 of operation					-496.820
					(637.935)
(5)Decade 2 of operation					-1,620.604
					(1,066.808)
(5)Decade 3 of operation					1,008.950
					(2,299.854)
(5)Decade 4 of operation					2,368.046
					(1,459.435)
Decade 1980	-6,975.708***	-6,954.298***	-6,616.647***	-6,985.063***	-7,064.354***
	(1,132.011)	(1,075.086)	(983.357)	(1,076.468)	(1,204.895)
Decade 1990	-4,997.193***	-4,988.306***	-4,691.868***	-5,030.583***	-5,094.136***
	(919.014)	(877.826)	(816.490)	(885.928)	(998.680)
Decade 2000	-3,451.151***	-3,481.730***	-3,345.440***	-3,499.834***	-3,581.039***
	(540.224)	(544.452)	(537.815)	(549.300)	(605.761)
H.S. gap	-9,645.565***	-9,654.832***	-9,584.434***	-9,680.001***	-9,624.645***
	(3,237.140)	(3,219.446)	(3,232.778)	(3,221.815)	(3,248.272)
College gap	-3,807.131	-3,749.611	-3,791.333	-3,799.459	-3,893.539
	(4,625.395)	(4,622.342)	(4,632.253)	(4,614.565)	(4,627.415)
Employment gap	19,324.715***	19,335.590***	19,289.484***	19,342.745***	19,287.383***
	(4,015.852)	(4,025.350)	(4,023.887)	(4,033.541)	(4,012.455)
Labor force gap	-15,604.91***	-15,559.99***	-15,656.00***	-15,583.57***	-15,636.95***
	(3,655.592)	(3,658.582)	(3,691.461)	(3,662.593)	(3,663.922)
Large household gap	0.060	0.067*	0.058	0.068*	0.060
	(0.038)	(0.039)	(0.038)	(0.040)	(0.037)
Constant	9,499.572***	9,494.973***	9,327.106***	9,517.674***	9,582.119***
	(963.221)	(941.653)	(924.784)	(939.403)	(1,016.884)
Observations	1,764	1,764	1,764	1,764	1,764
R-squared	0.250	0.251	0.250	0.251	0.251
F(10, 37)	32.14	35.87	26.16	39.09	
F(13, 37)					49.35

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 4: Regression Results Without Employment Explanatory Variables

VARIABLES	(1) Income gap	(2) Income gap	(3) Income gap	(4) Income gap	(5) Income gap
County ever had a casino	509.731	456.787	522.100	158.770	437.689
	(719.032)	(740.797)	(703.825)	(771.535)	(726.316)
Casino present at given time	-726.045				
	(706.308)				
Total # of tribal casinos		-436.930			
		(275.076)			
Decade 1 of Operation			-448.189		
			(642.100)		
Decade 2 of Operation			-1,558.047		
			(1,119.996)		
Decade 3 of Operation			980.578		
			(2,783.068)		
Decade 4 of Operation			3,040.123*		
			(1,692.504)		
Total # of Class II				3.604	
				(838.958)	
Total # of Class III					-492.154
					(298.611)
Decade 1980	-6,772.299***	-6,789.088***	-6,859.350***	-6,458.900***	-6,795.201***
	(1,291.783)	(1,233.256)	(1,365.231)	(1,135.348)	(1,248.138)
Decade 1990	-4,481.308***	-4,505.460***	-4,577.953***	-4,208.575***	-4,525.261***
	(983.645)	(931.062)	(1,065.538)	(867.741)	(951.985)
Decade 2000	-3,530.834***	-3,573.743***	-3,658.845***	-3,437.899***	-3,581.858***
	(528.343)	(526.247)	(599.405)	(516.503)	(533.396)
H.S. gap	-6,034.945	-6,057.071	-6,015.455	-5,975.635	-6,073.167
	(3,674.594)	(3,655.138)	(3,676.145)	(3,666.453)	(3,653.040)
College gap	173.754	217.385	95.297	218.754	174.361
	(4,641.687)	(4,649.295)	(4,645.724)	(4,661.210)	(4,634.643)
Large household gap	0.044	0.052	0.045	0.043	0.052
	(0.038)	(0.039)	(0.037)	(0.038)	(0.039)
Constant	11,560.518***	11,574.658***	11,640.097***	11,404.156***	11,585.853***
	(796.165)	(759.531)	(874.285)	(735.584)	(767.740)
Observations	1,770	1,770	1,770	1,770	1,770
R-squared	0.196	0.196	0.196	0.195	0.196
F(8, 37)	9.438	10.20		8.814	10.18
F(11, 37)			13.48		

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 5: Regression Results Without Education Explanatory Variables

VARIABLES	(1) Income gap	(2) Income gap	(3) Income gap	(4) Income gap	(5) Income gap
County ever had a casino	534.518	502.086	544.689	214.498	508.920
	(688.776)	(695.016)	(672.034)	(747.852)	(685.416)
Casino present at given time	-577.079				
	(699.390)				
Total # of tribal casinos		-363.225			
		(241.799)			
Decade 1 of Operation			-333.710		
			(671.619)		
Decade 2 of Operation			-1,358.245		
			(1,094.843)		
Decade 3 of Operation			1,315.214		
			(2,457.547)		
Decade 4 of Operation			2,389.599		
			(1,844.531)		
Total # of Class II				343.951	
				(777.125)	
Total # of Class III					-449.214
					(274.739)
Decade 1980	-7,563.652***	-7,588.895***	-7,638.469***	-7,285.768***	-7,622.887***
	(1,288.077)	(1,197.461)	(1,356.833)	(1,089.446)	(1,202.819)
Decade 1990	-5,350.157***	-5,380.748***	-5,431.727***	-5,117.186***	-5,423.524***
	(998.776)	(934.953)	(1,075.684)	(857.945)	(946.660)
Decade 2000	-3,705.228***	-3,744.854***	-3,814.656***	-3,622.550***	-3,762.731***
	(549.925)	(550.820)	(616.834)	(534.219)	(557.294)
Employment gap	18,305.201***	18,317.068***	18,270.202***	18,291.213***	18,327.044***
	(4,241.629)	(4,247.757)	(4,244.128)	(4,242.981)	(4,254.282)
Labor force gap	-14,140.119***	-14,110.822***	-14,152.210***	-14,198.585***	-14,125.412***
	(3,758.923)	(3,767.255)	(3,765.245)	(3,792.773)	(3,767.771)
Large household gap	0.067*	0.073*	0.068*	0.066*	0.075*
	(0.037)	(0.038)	(0.036)	(0.037)	(0.038)
Constant	9,720.436***	9,738.212***	9,790.617***	9,587.361***	9,760.302***
	(1,034.818)	(1,005.245)	(1,086.470)	(978.545)	(1,007.499)
Observations	1,768	1,768	1,768	1,768	1,768
R-squared	0.241	0.242	0.242	0.241	0.242
F(8, 37)	38.29	42.80		27.99	44.14
F(11, 37)			47.19		

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 6a: Class II Variable Effect on Income Gap

VARIABLES	(1) Income gap	(2) Income gap	(3) Income gap
County ever had a Class II Casino	155.363	351.937	422.021
	(769.275)	(751.940)	(775.140)
(1) Decade 1 of Operation	752.712		
	(927.979)		
(1) Decade 2 of Operation	690.533		
	(1,986.316)		
(1) Decade 3 of Operation	-3,381.560*		
	(1,902.452)		
(2) Class II present at given time		205.944	
		(1,045.945)	
(3) Total # of Class II			33.405
			(798.456)
Decade 1980	-6,615.989***	-6,624.773***	-6,634.970***
	(1,025.165)	(1,005.846)	(997.393)
Decade 1990	-4,706.491***	-4,698.536***	-4,703.789***
	(831.926)	(821.491)	(817.968)
Decade 2000	-3,377.876***	-3,349.108***	-3,352.199***
	(541.914)	(537.884)	(538.057)
H.S. gap	-9,578.870***	-9,589.473***	-9,588.541***
	(3,234.665)	(3,227.709)	(3,225.412)
College gap	-3,839.896	-3,838.485	-3,832.411
	(4,656.018)	(4,654.934)	(4,654.667)
Employment gap	19,278.108***	19,283.265***	19,284.487***
	(4,064.408)	(4,042.083)	(4,041.713)
Labor Force gap	-15,668.301***	-15,666.939***	-15,659.305***
	(3,654.206)	(3,693.417)	(3,688.286)
Large household gap	0.058	0.058	0.058
	(0.038)	(0.038)	(0.038)
Constant	9,345.433***	9,336.184***	9,340.248***
	(790.400)	(780.851)	(777.375)
Observations	1,764	1,764	1,764
R-squared	0.251	0.250	0.250
F(12, 37)	26.94		
F(10, 37)		25.42	25.20

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 6b: Class III Variable Effect on Income Gap

VARIABLES	(1) Income gap	(2) Income gap	(3) Income gap
County ever had a Class III Casino	886.933	870.424	676.239
	(642.979)	(660.615)	(717.247)
(1) Decade 1 of Operation	-923.407		
	(656.261)		
(1) Decade 2 of Operation	-2,031.560		
	(1,309.066)		
(1) Decade 3 of Operation	2,028.952		
	(3,311.377)		
(2) Class III present at given time		-1,229.591*	
		(692.541)	
(3) Total # of Class III			-577.649**
			(258.751)
Decade 1980	-7,254.933***	-7,150.909***	-7,043.716***
	(1,177.921)	(1,115.606)	(1,061.257)
Decade 1990	-5,281.504***	-5,171.007***	-5,077.374***
	(981.561)	(913.096)	(872.469)
Decade 2000	-3,666.344***	-3,500.851***	-3,518.495***
	(621.975)	(538.435)	(543.664)
H.S. gap	-9,597.779***	-9,620.303***	-9,639.637***
	(3,240.011)	(3,230.840)	(3,223.455)
College gap	-3,876.139	-3,795.148	-3,718.546
	(4,637.490)	(4,618.784)	(4,615.003)
Employment gap	19,301.092***	19,319.603***	19,341.338***
	(4,028.484)	(4,029.207)	(4,040.194)
Labor Force gap	-15,656.013***	-15,650.552***	-15,600.823***
	(3,692.787)	(3,649.400)	(3,646.057)
Large household gap	0.060	0.059	0.069*
	(0.038)	(0.038)	(0.039)
Constant	9,611.754***	9,516.254***	9,460.292***
	(1,004.665)	(958.024)	(936.211)
Observations	1,764	1,764	1,764
R-squared	0.252	0.251	0.251
F(12, 37)	37.94		
F(10, 37)		32.75	36.00

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 7: Class III Casino Variable Effect on Household Income for NA and W

VARIABLES	(1) NA income	(2) W income	(3) NA income	(4) W income	(5) NA income	(6) W income
County ever had a casino	250.394	1,178.189	211.272	1,126.116	257.855	989.094
	(999.227)	(708.967)	(979.010)	(681.484)	(1,036.555)	(796.534)
Total # of tribal casino	510.191	-418.611				
	(361.685)	(293.753)				
Total # of Class III			678.661**	-409.699		
			(331.473)	(359.141)		
Class III present at given time					840.235	-214.647
					(1,021.665)	(862.989)
Constant	5,036.328	-44,691.98**	5,022.799	-44,858.77**	5,050.040	-45,455.02**
	(5,066.903)	(17,068.138)	(5,101.244)	(17,166.276)	(5,050.605)	(17,124.230)
Observations	1,765	1,832	1,765	1,832	1,765	1,832
R-squared	0.237	0.668	0.238	0.667	0.237	0.667
F(9, 37)	47.28	82.83	46.28	82.27	28.76	84.01

Notes: NA is Native American/native and W is White/non-native.
Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 8: Class III Casino Counter Effect on Household Income for NA and W

VARIABLES	(1) NA income	(2) W income	(3) NA income	(4) W income	(5) NA income	(6) W income
County ever had a casino	592.810	845.197	577.589	875.640	519.709	965.262
	(944.068)	(855.008)	(960.497)	(692.752)	(933.419)	(715.759)
One Class III	47.008	180.603				
	(827.669)	(818.827)				
Two Class III			372.447	345.711		
			(1,712.085)	(1,735.416)		
Three or More Class III					2,552.438*	-2,228.039
					(1,457.907)	(1,413.356)
Constant	5,196.462	-45,462.220**	5,179.880	-45,615.777**	5,185.141	-44,980.433**
	(5,036.758)	(17,115.417)	(5,049.035)	(17,189.226)	(5,085.265)	(17,089.776)
Observations	1,765	1,832	1,765	1,832	1,765	1,832
R-squared	0.237	0.667	0.237	0.667	0.237	0.668
F(9, 37)	23.31	87.49	22.62	83.13	36.36	89.37

Notes: NA is Native American/native and W is White/non-native.
Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 9: Full Regression Results from Table 7

VARIABLES	(1) NA income	(2) W income	(3) NA income	(4) W income	(5) NA income	(6) W income
County ever had a casino	250.394	1,178.189	211.272	1,126.116	257.855	989.094
	(999.227)	(708.967)	(979.010)	(681.484)	(1,036.555)	(796.534)
Decade 1980	-5,658.399***	-702.158	-5,588.951***	-677.235	-5,702.396***	-484.055
	(1,515.789)	(1,609.245)	(1,507.005)	(1,620.119)	(1,531.317)	(1,582.778)
Decade 1990	-3,333.301**	-3,207.614***	-3,245.806**	-3,190.006***	-3,362.307**	-3,004.134***
	(1,259.314)	(859.810)	(1,237.823)	(871.669)	(1,269.080)	(881.344)
Decade 2000	921.697	-1,402.716**	962.526	-1,393.446**	864.792	-1,302.052**
	(630.309)	(601.514)	(615.796)	(597.482)	(605.123)	(583.571)
Total # of tribal casinos	510.191	-418.611				
	(361.685)	(293.753)				
Total # of Class III			678.661**	-409.699		
			(331.473)	(359.141)		
Class III present at given time					840.235	-214.647
					(1,021.665)	(862.989)
Percent NA High School Degree	140.382		126.782		155.585	
	(2,794.743)		(2,799.546)		(2,815.333)	
Percent NA College Degree	8,484.571		8,419.779		8,454.764	
	(5,626.417)		(5,618.330)		(5,622.007)	
Percent NA Employed	32,163.763***		32,146.282***		32,179.138***	
	(6,338.602)		(6,353.498)		(6,324.916)	
Percent NA Large Households	0.281		0.248		0.361	
	(0.559)		(0.540)		(0.573)	
Percent W High School Degree		-14,347.300		-14,365.558		-14,108.994
		(10,108.524)		(10,097.912)		(10,059.154)
Percent W College Degree		47,162.649***		47,088.963***		47,181.706***
		(11,450.891)		(11,427.645)		(11,312.998)
Percent W Employed		87,168.670***		87,363.325***		87,766.178***
		(15,173.560)		(15,226.751)		(15,210.527)
Percent W Large Households		0.256***		0.256***		0.248***
		(0.061)		(0.062)		(0.063)
Constant	5,036.328	-44,691.977**	5,022.799	-44,858.774**	5,050.040	-45,455.020**
	(5,066.903)	(17,068.138)	(5,101.244)	(17,166.276)	(5,050.605)	(17,124.230)
Observations	1,765	1,832	1,765	1,832	1,765	1,832
R-squared	0.237	0.668	0.238	0.667	0.237	0.667
F(9, 37)	47.28	82.83	46.28	82.27	28.76	84.01

Notes: NA is Native American/native and W is White/non-native.
Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Table 10: Full Regression Results from Table 8

VARIABLES	(1) NA income	(2) W income	(3) NA income	(4) W income	(5) NA income	(6) W income
County ever had a casino	592.810	845.197	577.589	875.640	519.709	965.262
	(944.068)	(855.008)	(960.497)	(692.752)	(933.419)	(715.759)
Decade 1980	-6,023.177***	-351.334	-6,004.233***	-380.383	-5,897.034***	-531.584
	(1,428.338)	(1,482.573)	(1,414.735)	(1,570.620)	(1,463.366)	(1,550.670)
Decade 1990	-3,667.207***	-2,879.263***	-3,648.437***	-2,897.917***	-3,541.449***	-3,051.427***
	(1,177.808)	(749.882)	(1,122.215)	(782.020)	(1,179.384)	(776.228)
Decade 2000	763.554	-1,265.581**	771.672	-1,266.766**	851.419	-1,353.762**
	(607.544)	(538.683)	(606.839)	(549.108)	(619.843)	(556.675)
Percent NA High School Degree	191.392		198.873		136.780	
	(2,809.345)		(2,784.541)		(2,775.538)	
Percent NA College Degree	8,543.937		8,542.854		8,506.072	
	(5,627.447)		(5,622.464)		(5,620.269)	
Percent NA Employed	32,168.425***		32,171.463***		32,119.422***	
	(6,309.344)		(6,313.921)		(6,328.726)	
Percent NA Large Households	0.376		0.380		0.295	
	(0.578)		(0.566)		(0.559)	
Percent W High School Degree		-14,057.854		-13,984.119		-14,297.299
		(10,151.487)		(10,204.609)		(10,128.658)
Percent W College Degree		47,203.922***		47,145.279***		47,095.909***
		(11,295.999)		(11,264.416)		(11,360.343)
Percent W Employed		87,672.642***		87,838.027***		87,385.554***
		(15,156.321)		(15,242.385)		(15,182.954)
Percent W Large Households		0.249***		0.248***		0.255***
		(0.062)		(0.062)		(0.061)
One Class III	47.008	180.603				
	(827.669)	(818.827)				
Two Class III			372.447	345.711		
			(1,712.085)	(1,735.416)		
Three or More Class III					2,552.438*	-2,228.039
					(1,457.907)	(1,413.356)
Constant	5,196.462	-45,462.220**	5,179.880	-45,615.777**	5,185.141	-44,980.433**
	(5,036.758)	(17,115.417)	(5,049.035)	(17,189.226)	(5,085.265)	(17,089.776)
Observations	1,765	1,832	1,765	1,832	1,765	1,832
R-squared	0.237	0.667	0.237	0.667	0.237	0.668
F(9, 37)	23.31	87.49	22.62	83.13	36.36	89.37

Notes: NA is Native American/native and W is White/non-native.
Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10
Sources: Minnesota Population Center, 1980 Sample Based Data and 1990 Sample Based Data.
U.S. Census Bureau, 2000 Decennial Census and 2010 American Community Survey.

Figure 1. Native American Casino Counties: 1969-1979

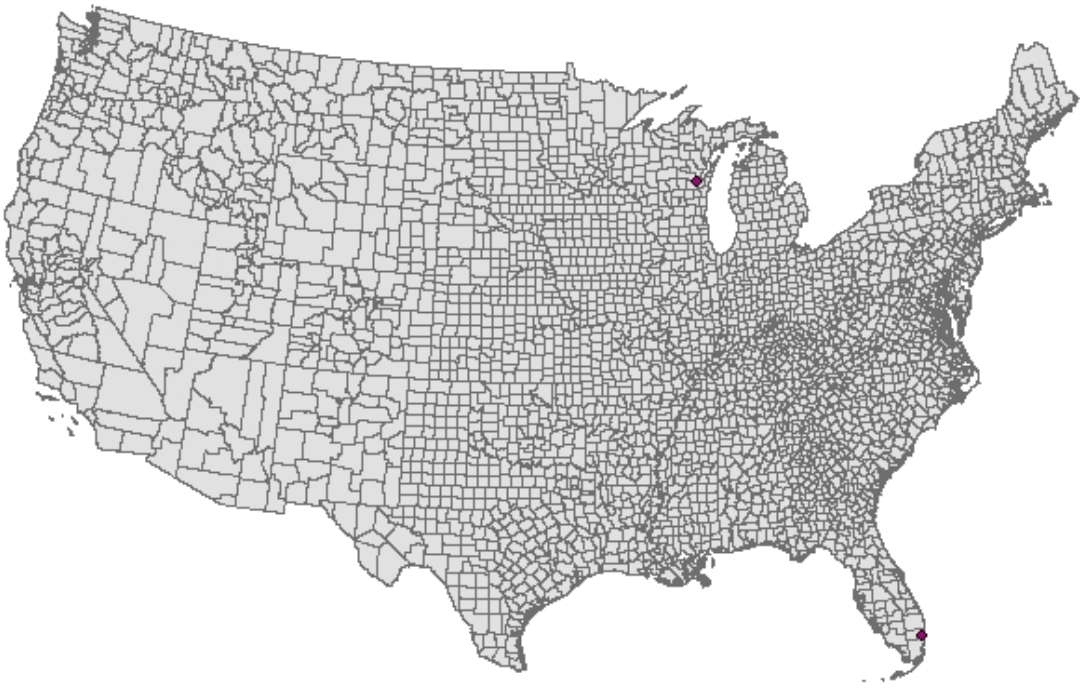

Figure 2. Native American Casino Counties: 1979-1989

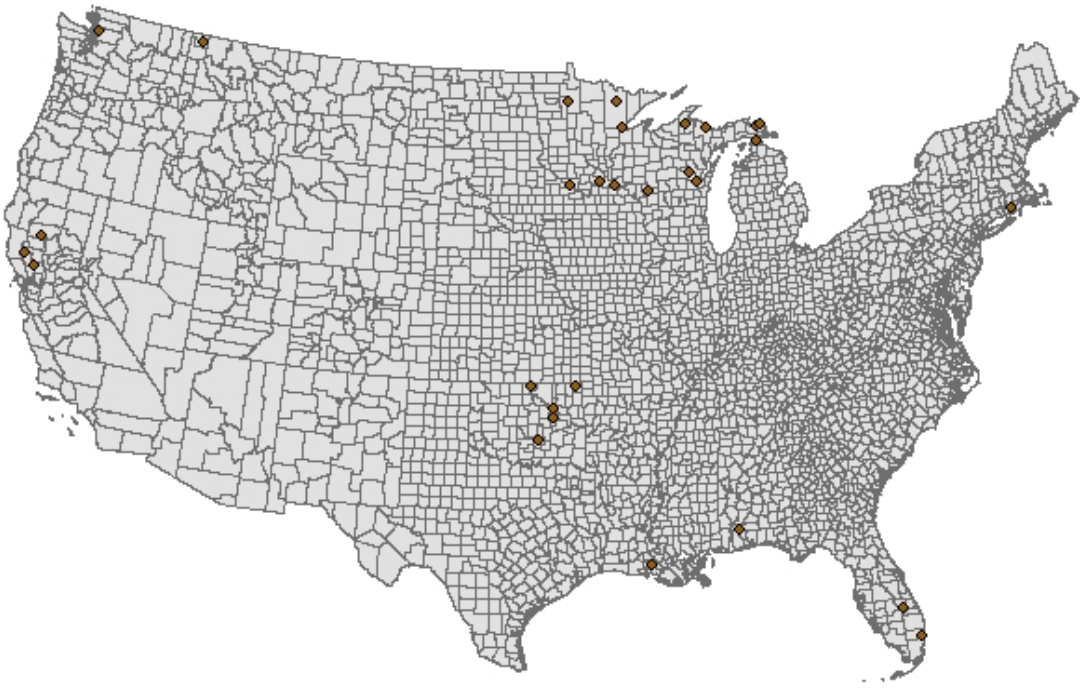

Figure 3. Native American Casino Counties: 1989-1999

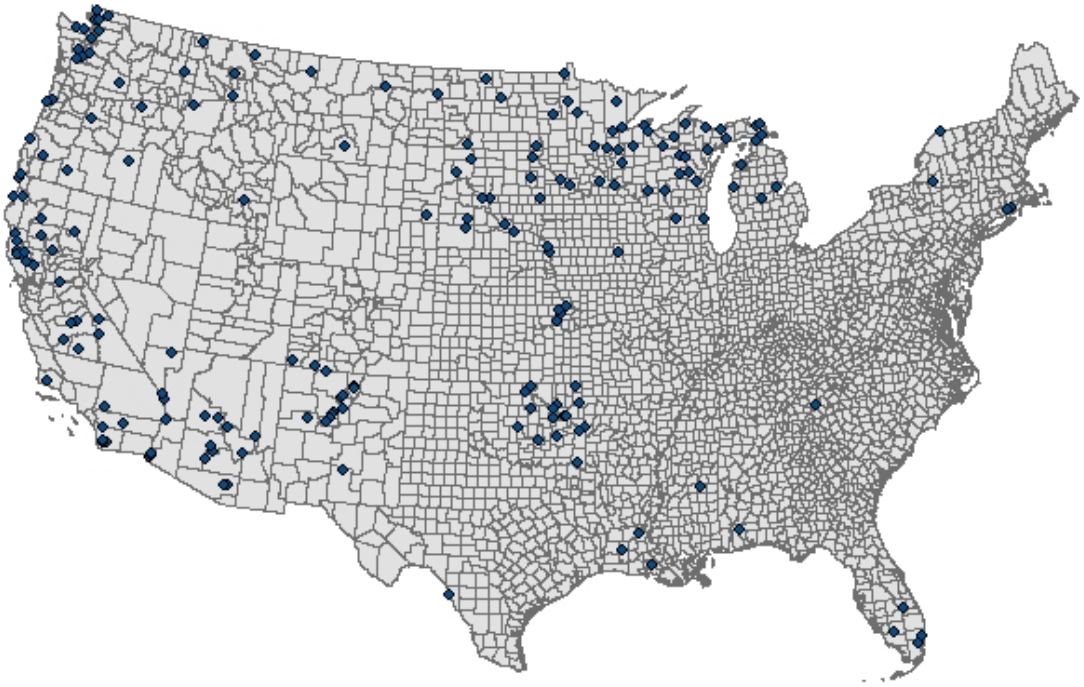

Figure 4. Native American Casino Counties: 1999-2009