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THE IMPACT OF INDIAN GAMING ON EDUCATIONAL ATTAINMENT, POVERTY AMONG NATIVE AMERICAN TRIBES

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**THE IMPACT OF INDIAN GAMING
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AMONG NATIVE AMERICAN TRIBES**

BY

AARON DIAZ

B.A., Criminology, The University of New Mexico, 2006

THESIS

Submitted in Partial Fulfillment of the
Requirements for the Degree of

**Master of Arts
Sociology**

The University of New Mexico
Albuquerque, New Mexico

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ABSTRACT

What is the impact of Indian gaming on educational attainment among Native American tribes? Is there a correlation between Indian gaming and poverty rates? Utilizing a combination of cross-sectional analysis and longitudinal case studies, I examine whether Indian gaming has an impact on educational attainment. I also explore the economic mechanism of how this effect occurs. I analyze the 1990 and 2000 census data in addition to raw data collected from the National Indian Gaming Commission website, which provided the year selected Native American tribes were approved to pursue the establishment of gaming on their reservations. No significance was recorded in the correlation between Indian gaming and the population of 16 to 19 year olds not enrolled in school and not a high school graduate. The cross-sectional analysis of the 2000 census data, along with the data collected from the National Indian Gaming Commission website, also suggests no link exists between Indian gaming and improvements in educational attainment and enrollment. In all the models testing Indian

gaming's influence on education, the number of years a tribe has operated Indian gaming establishments under the approval of the National Indian Gaming Commission did not prove to have any statistically significant effect on educational attainment as tested by the population 16 to 19 years old not enrolled in school and not a high school graduate and therefore falsifies my hypothesis. My model did show that the population 16 to 19 years old not enrolled in school and not a high school graduate was significantly affected by families living below the poverty line, household per capita income, percent of 16 years and older employed, married couple families, and female headed households. It also provided evidence that the percentage of families living below the poverty line is decreasing and median/per capita household incomes are increasing for all 205 Native American tribes studied and even more so for those tribes that have Indian gaming establishments. Because of the bias measure of Indian gaming as determined by the approval of tribal gaming ordinances by the National Indian Gaming Commission, the goal of my case study research is to provide some explanation for a possible link between Indian gaming and education in my quantitative analysis. I will compare three control groups as identified by tribal affiliation. The first control group will consist of two tribes selected on the criteria that they do not have any form of Indian gaming before the year 2000. The operation of a less profitable Indian gaming establishment provides the conditions for the second control group. And the third control group is comprised of two tribes selected on the provisions that it operates highly successful and profitable gaming establishments. I will also examine their successes in educational attainment as measured by the population not enrolled in school and not a high school graduate. Therefore, I purposefully selected five tribes for my longitudinal case studies: The Lumbee, Navajo,

Paiute, Mescalero Apache and Potawatomi tribes. The Lumbee and Navajo tribes did not have any form of Indian gaming during the 1990s and the percentages of their high school graduates and individuals receiving a bachelor's degree were substantially lower and the percent of their population not enrolled in school and not a high school graduate was higher than the Paiute and Potawatomi tribes who have highly successful Indian gaming establishments. The Mescalero Apache tribe is struggling to make profits through Indian gaming and their education measures fall in between these two control groups. These case studies point to other factors that may contribute to educational attainment and school enrollment. Carol J. Ward offers a different perspective on her case study on the Northern Cheyenne Indian students. She believes the problem is more complex than money and found a connection between drop-out rates and community involvement. The contextual elements of the community and reservation did not match the context of the public school which shed some light on the high drop-out rates. The implications for further research include conducting more in-depth case studies to find the processes that might help explain successes or failures in education and compiling a more complete data set detailing the duration of Indian gaming on Native American reservations and testing its impact on education and economic measures.

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CHAPTER 1

INTRODUCTION

Educating Native Americans has long been a struggle for the Federal Government, for tribal leaders, and even more so for the children striving to understand a foreign curriculum. Native Americans are the least educated population in the United States today, and they are also the poorest. Within ten years, as census data indicate, there has been progress within Indian Country regarding education. According to the 1990 & 2000 Census, the percentage of high school graduates 25 years and over collectively increased 10.60% between 1990 and 2000. The percentage of individuals receiving a bachelor's degree or higher also increased 23.24% for this population within the ten-year span. Families living below the poverty level decreased an average of 21.23% between 1990 and 2000. And in 2000, the percentage of the population 16 to 19 years not enrolled in school and not a high school graduate stood at 16.17%. The timing of these occurrences is consistent with the Indian Gaming Regulatory Act of 1988, which allowed federally recognized Indian tribes to open and operate gaming industries. What has contributed to this increase in educational attainment among American Indians during the 1990s? How have federal and state policies contributed to the current state of Indian education? What is the impact of Indian gaming on educational attainment among Native American tribes? Is there a correlation between Indian gaming and poverty rates? If so, which mechanism is more significant in increasing educational attainment? Do tribes with gaming revenues spend more on educational programs and scholarships or is the relationship between gaming and education guided by increases in family income?

The purpose of this study is to explore the relationship between the introduction of Indian gaming and its effect on education and to unpack the associated mechanisms if a relationship exists. I use the term Native American, Indian, indigenous and tribes interchangeably to refer to the original inhabitants of the Americas. My hypothesis is that the introduction of Indian gaming in reservations increases educational attainment as measured by the enrollment of 16-19 year olds. My second hypothesis is that Indian gaming increases economic stability as measured in terms of poverty rates. The findings of my study did not support my hypothesis, therefore, educational attainment and economic stability were not impacted by Indian gaming. My findings did show that the population 16 to 19 years old not enrolled in school and not a high school graduate was significantly affected by families living below the poverty line, household per capita income, percent of 16 years and older employed, married couple families, and female headed households. It also provided evidence that the percentage of families living below the poverty line is decreasing and median/per capita household incomes are increasing for all 205 Native American tribes studied and even more so for those tribes that have Indian gaming establishments.

Chapter 2, *Historical Context for Native American Education*, provides a history of Native Americans' first encounters with formal education and their struggle to expand and exploit the resources available to them. Starting with the Indian Removal Act, this chapter focuses on the path taken by Native Americans in education. Chapter 3, *Review of Related Literature: Gaming, Education & Poverty*, discusses several studies that have examined my hypothesis about the relationship between Indian gaming and education. I also describe the mechanisms shaping these dynamics. The literature has its limitations

due to the lack of research on this subject. The fourth chapter, *Research Design*, describes my statistical plan examining the direct effect of Indian gaming on education, as well as the indirect effect of Indian gaming on education through economic measures. Chapter 5 describes the *Results* of my statistical analysis and case studies. Finally, Chapter 6, *Discussion*, summarizes the findings of my study and identifies the limitations and implications for future research.

CHAPTER 2

HISTORICAL CONTEXT

Native Americans were first to inhabit what we today call the United States of America. Native Americans prospered through adversity and became known as survivors in both past and present tense; they “built a national identity with their distinctive cultural traits: Mother Earth, spiritually, love and respect for nature and the environment” (Hanson, 1997:204). And though there are many differences among the many Native American tribes, they hold one thing in common – the struggle to hold on to their heritage and sovereignty while facing adversity in American society.

Native Americans take great pride in their culture and protect its origins. “Linguists estimate that at first contact with Europeans, as many as 300 distinct languages were spoken by people Indigenous to what is now the United States” (Lomawaima and McCarty, 2002:296). This amount of language diversity is phenomenal considering the proximity of the tribes. It is important to understand the differences between the cultures of the many Native American tribes. Although Native Americans share the experience of colonization and resistance, they differ in customs, culture, language and beliefs. Native Americans participation in tribal traditions also varies.

In the course of their trials, Native Americans witnessed a steady decline in population due to several factors. Most notorious was the spread of disease that severely reduced their numbers. “European-borne diseases sparked *virgin soil* epidemics that spread quickly throughout the Americas. Diseases common in Europe and Africa – smallpox, cholera, typhus, diphtheria, and influenza for instance – were unknown to

Native Americans living in the western hemisphere at this time” (Snipp, 1992:354).

Other causes of population decline were the enduring effects of reservation life.

The *Indian Removal Act*, which was signed by President Andrew Jackson in 1830, mandated that all Native American tribes be removed from the Eastern United States and placed on reservations to the West. This Act resulted in the deaths of an estimated 4,000 Cherokees during their plight. In the Cherokee language, the event is called Nunna dual Isunyi – *the Trail Where We Cried*. With the removal of Native Americans from their homelands to reservations, the new government sought to assimilate and alter Native American thinking into one that matched their own.

The 1887 Dawes Act resulted in 90 million acres of lost treaty land. The Act was created to distribute privately owned allotments of tribal lands to individual members – 160 acres to family heads, 80 acres to single adults. Assimilation was again a centerpiece in the Dawes Act which sought out traditional tribal life in exchange for independency and an American way of life. Often record keeping was inaccurate and heirs of original land owners were denied ownership and the land was sold at bargain prices to non-Native buyers. The 1887 Dawes Act also marked the federal identification policy which included blood quantum laws to define membership in Native American tribes and to calculate the degree of racial inheritance.

In 1978, the Bureau of Indian Affairs created a regulatory process for recognizing Native American tribes. The process for recognition is a difficult process that can take decades to complete. It requires a petitioning tribe to satisfy mandatory criteria that entails “anthropological, historical, and genealogical research and presentation of evidence, including historical and continuous American Indian identity in a distinct

community” (NCAI, 2006:1). The majority of petitioners fail to meet the strict standards set forth.

The history behind the attempts to educate Native American children is long and tedious. The establishment of missionaries and boarding schools to assimilate and educate the children of Native American tribes was an extension of the colonization and forced assimilation of Native American communities. Due to its forceful nature, children found it difficult to succeed while being torn away from their families. Not only did Native Americans lose their children to boarding schools and missionaries – they confronted the fact that part of their culture was also being lost. Through many treaties, “Indians were separated from their land and, subject to the success of the government’s educational programs, and through these educational programs, Indians were also separated from their culture” (Chiago, 1981:21). Eliminating tribal culture and forcing assimilation were the primary goals in the process of educating Native American children.

Missionary Schools

Missionary schools were the first to introduce formal education to the Native American population. Their primary objective was to “civilize them or teach them the ways of the white man” (Beatty, MacGregor and McCaskill, 1941:359). Beginning in 1568, missionary schools were being established in Florida and continually spread throughout the United States. The failure of the early missionaries to successfully teach Native American students the new society’s culture resulted in the rapid establishment of boarding schools. Boarding schools differed from missionaries in force and separatism. While missionaries primarily kept Native American children closer to home, the boarding

schools objective was to build structures for the purpose of assimilating Native American youth. The curriculum was equivalent to that of missionary schools, and its goal remained the same: “change them by educating, Christianizing, and *civilizing* them” (Whiteman, 1986:28).

Boarding Schools

The boarding school era provides a clearer picture of the attempts by the government “to remove Indians from their tribal and family members, religion, language, and homeland by placing them in distant schools to learn non-Indian ways. The results generated by the boarding school era included “breakdown of tribal culture, alienation of Indian parents from the education of their children, and emotional, psychological, and mental anguish” (Deyhle and Swisher, 1997:114).

The enduring quest to educate Native American children during this time, by way of boarding schools, did not change until the government transferred responsibility for Indian education to the Bureau of Indian Affairs (BIA). The BIA was created by the War Department in 1824 and later handed over to the Department of Interior in 1849. Treaty Processes, such as the Indian Removal Act, contributed to the shift of responsibility to the BIA.

The Bureau of Indian Affairs (BIA) is an agency of the federal government charged with the administration and management of 55.7 million acres of land held in trust by the United States for Native Americans. As mandated by the treaties signed by the U.S. federal government and specific Native American tribes, the BIA also provides education services to all Native American youth. In the 1870s, the Bureau of Indian Affairs started building its form of boarding schools using abandoned army posts and

barracks as their institutions. The schools operated in rigid military fashion and emphasized the most rudimentary forms of vocational training. If “Indian families refused to send their children to school the government retaliated by withholding food and other services” (Ivie, 1980:270). These cruel methods paid little dividend for the Bureau of Indian Affairs: Native Americans continued to resist forced assimilation and did not succeed in formal education.

Despite its deteriorating effects, the government continued to believe that education was Native Americans only salvation. They did not anticipate the remedying of problems caused by the underachievement of many Native American students within the coming years. In fact they did not confront the problem until 1928 and not again until the late 1960s and early 1970s. The most influential studies during this era include the 1928 Meriam Report, the 1966 Coleman Report and the 1969 Kennedy Report.

Meriam Report

The Meriam survey team was highly critical of the federal boarding school system. The survey team “recommended that the federal government institute more relevant curriculum that recognized the cultural and language variances of Indian children” (Whiteman, 1986:29). In addition to inadequate education, poor health, poverty and insufficient government services were among the top issues described in the report. More importantly, it demanded a change in federal policy to protect Native Americans traditions and cultures.

Coleman Report

In 1964 Congress held the U.S. Commissioner of Education responsible for researching the lack of educational opportunities of individuals by reason of *race, color,*

religion, or national origin. These studies resulted in the 1966 Coleman Report, which highlighted low test scores found among minority students compared to Anglo-American students. The Coleman Report stated that: “Schools in different school districts differ in their relation to the various racial and ethnic groups. And, the average white student’s achievement seems to be less affected by the strengths and weaknesses of his school’s facilities, curriculum, and teachers than is the average minority student’s” (Coombs, 1970:9). Their mission was to create an environment conducive to learning for all students.

Kennedy Report

The most compelling and in-depth study specifically dealing with the problems of educating Native American youth was conducted in 1969 by the Kennedy team. Their findings provided several astonishing details regarding the state of Indian Education in America during this era. The following are highlights of that report:

1. Approximately 16,000 Indian children are not in school.
2. Dropout rates of Indian children are twice the national average.
3. The level of formal education is half the national average.
4. Indian children, more than any other group, believe themselves to be *below average* in intelligence.
5. Indian children in the twelfth grade have the poorest self concept of all minority groups tested.
6. The average Indian income is \$1,500.
7. Indian unemployment is ten times the national average (Chiago, 1981:23).

In response to this report, which was titled *Indian Education: a National Tragedy – a National Challenge*, Congress passed the Indian Education Act in 1972. The Act was designed to deal with the unique circumstances of educating Native American youth and to create educational programs specifically designed for the individualistic needs of each tribe. Several other Acts and provisions were also introduced to aid in the development of Indian education such as Title I, Johnson-O’Malley, and the Indian Self-Determination and Education Assistance Act.

Title I provides financial assistance to schools that have a high rate of impoverished children, such as those of Native American families. The main purpose of this title is to ensure that all children have a fair, equal, and significant opportunity to receive a high-quality education and reach, at a minimum, proficiency on challenging State academic achievement standards and state academic assessments.

The Johnson-O’Malley Act of 1934 was amended in 1958 to address the unique cultural needs of many Native American families and provide assistance for educating Native American children. It provides supplementary financial assistance to meet the unique and specialized educational needs of Indian children. Johnson-O'Malley funds are not to take the place of federal, state or local funds.

Lastly, the Indian Self-Determination and Education Assistance Act was signed into law in 1975 and permitted tribes to contract with the federal government to improve tribal operation programs. This allowed the tribes to have greater control in decisions regarding their own welfare rather than allocating the decision making to state and federal governments. Today, over half of all tribal projects, such as educational programs, schools, elderly centers and economic enterprises, are self-determined.

“During the last half decade the Indian Education Act, the Indian Self-Determination and Education Assistance Act, the revised Johnson-O’Malley regulations, and the improved administration of Title I have created a statutory and administrative framework which makes it possible for Indian communities to shape educational programs in a more flexible, relevant, and responsive manner” (Rosenfelt, 1976:223). The determination to improve Indian education was recognized by the federal government but continually failed in the struggle to educate indigenous youth.

Native American students and their elders, compared to the general population of the country, place last behind every major category of educational attainment. This holds true with respect to enrollment in school, achievement as measured by standardized tests, number of years of schooling, school completion, college enrollment, and college graduation (Coombs, 1970:19). Standardized testing has also been proven to be difficult for Native American children to grasp.

The already grim state of Indian education faced another blow when Reagan’s *New Federalism* diminished the support for BIA operations in the 1980s. Economic development contributions were reduced to twenty-five percent, leaving the tribes accountable for the remaining seventy-five percent (Vinje, 1996:431). This not only affected general tribal projects, but also decreased the amount of spending on improving educational programs. Tribal leaders across America were confronted with the task of providing for their people with very few resources; however they did recognize their most important and powerful attribute – sovereignty.

On April 28, 1988, Congress passed the *Hawkins-Stafford Elementary and Secondary School Improvement* amendments which “reaffirmed the federal government’s

special duty to the Indian tribes to assure the availability of the best educational opportunities, a duty that must be fulfilled in a manner consistent with Indian self-determination” (Lomawaima and McCarty, 2002:294). The Indian Self-Determination and Education Assistance Act allowed tribal governments to use their right of sovereignty to manage their own education. Yet, in 1991 a research report titled *The Indian: America’s Unfinished Business* stated that schools were still failing at their jobs to educate Native American youth. Despite several governmental attempts to improve Indian education, Native Americans still are overwhelmingly on the lower end of academic achievement and higher end of absenteeism, drop-out rates, and inadequate facilities.

The No Child Left Behind Act (NCLB) of 2001 increased the standards of accountability for states, school districts and schools. The basic premise of the NCLB is that high expectations, goal oriented accountability for students by race, English Language Learner Status, Free Lunch Status and Special Education Status will result in success for all students. Title VII of the No Child Left Behind Act proclaims that the government will work with Indian tribes, educational agencies, and other entities *toward the goal of ensuring that programs that serve Indian children are of the highest quality and provide for not only the basic elementary and secondary educational needs, but also the unique educational and culturally related academic needs of these children* (U.S. Department of Education). The success of Native American and minority students does not depend on implementing new policy; its success is riding on investing in educational programs that work.

The latest governmental attempt at increasing the academic proficiency of Native American students is the privatization of federal Indian schools proposed by former President George W. Bush. “The privatization scheme proposes to eliminate the government as a competitor in the education market, promote efficient use of education funds, remit control to Indian tribes, and improve Indian student achievement” (Privatization of Federal Indian Schools, 2003:1457). However, many Native American tribes detest the idea of privatizing their schools. According to the National Congress of American Indians (NCAI), “the proposal abrogates the federal trust obligation explicitly acknowledged in the No Child Left Behind Act. Second, privatization conflicts with the self-determination laws firmly established in the 1970s” (Privatization of Federal Indian Schools, 2003:1460). For now attempts to privatize Native American schools have halted due to resistance from not only tribes, but from teachers and Congress as well.

At the turn of the century, more than 1.4 million Native Americans were living within the United States representing 481 identifiable tribes. Nearly one-half of all Native Americans have only an elementary school education, or less, and only one-fourth have managed to graduate from high school. Not surprisingly, only 3.5% of all Indian men and 2.5% of all Indian women have four years or more of college (Butterfield, 1983:51). And, of the 500,000 Native American students in U.S. schools in 1995, it was predicting 60% would drop-out before graduating. The numbers are shocking. Although difficult for many Native Americans to understand and accept, it is essential to emphasize the importance of understanding the social forces shaping the education of Native American students. Waiting for federal and state governments to find a solution would

be a mistake – Native Americans need to educate themselves now to continue their fight for recognition and sovereignty.

The challenges are evident and tribal leaders are working hard to expand the educational opportunities to their people and improve the chance to succeed for generations to come. Previous policies of the federal government toward educating Native Americans have been to assimilate. Starting with poor funding and ending with poverty, these mechanisms helped produce insufficient educational proficiency among the Native American population. The identity of Native Americans is as strong today as ever and yet the problem of education continues.

The federal government has since closed most BIA funded schools, shifting the responsibility of educating 85% of Native American children to public education (Deyhle and Swisher, 1997:116). It is clear that more Native American students will be attending public schools. There is potential for the disappearance of Indian schools altogether, with exception of those reservations that are secluded and remote which makes it difficult for their children to attend public schools. Against this backdrop it is important to examine what if any changes in educational attainment (as measured by enrollment) have taken place in education and poverty since the signing of the Indian Gaming Regulatory Act of 1988.

The graph in Table 1 describes my sample of 205 Native American tribes¹: 158 with Indian gaming and 47 without; it also illustrates the percentage difference of the population 16 to 19 years old not enrolled in school and not a high school graduate in 2000. The table also displays the differences in percentages of the population that are high school graduates or have a bachelor's degree or higher (25 years and over), median household income, household per capita income, labor force participation (16 years and over), and families living below the poverty level between 1990 and 2000.

In analyzing education, the percent of individuals 16 to 19 years old not enrolled in school and not a high school graduate averaged 16.5% for tribes with Indian gaming operations and 14.6% for tribes without in 2000. Between 1990 and 2000, the percentage

¹ 158 Tribes: Abenaki, Jicarilla Apache, Mescalero Apache, Oklahoma Apache, San Carlos Apache, White Mountain Apache, Northern Apache, Arikara, Assiniboine, Blackfeet, Caddo, Morongo Cahuilla, Catawba, Chehalis, Chemehuevi, Eastern Cherokee, Echota Cherokee, Western Cherokee, Shawnee Cherokee, Northern Cherokee, Southern Cherokee, Arapaho Cherokee, Chickahominy, Chickasaw, Chinook, Bad River Chippewa, Bay Mills Chippewa, Bois Forte Chippewa, Fond du Lac Chippewa, Keweenaw Chippewa, Lac Courte Oreilles Chippewa, Lac du Flambeau Chippewa, Leech Lake Chippewa, Mille Lacs Chippewa, Minnesota Chippewa, Red Cliff Chippewa, Red Lake Chippewa, Saginaw Chippewa, St. Croix Chippewa, Sault Ste. Marie Chippewa, Turtle Mountain Chippewa, White Earth Chippewa, Chitimacha, Mississippi Choctaw, Mowa Band Choctaw, Oklahoma Choctaw, Chumash, Coeur D'Alene, Coharie, Colorado River, Colville, Comanche, Coos, Coquilles, Costanoan, Alabama Coushatta, Cowlitz, Cree, Poarch Creek, Crow, Cupeno, Lenni-Lanape Delaware, Ramapough Mountain Delaware, Diequeno, Garieleno, Grande Ronde, Gros Ventres, Haliwa-Saponi, Hidatsa, Hoopa, Iowa, Cayuga Iroquois, Mohawk Iroquois, Oneida Iroquois, Onondaga Iroquois, Seneca Iroquois, Seneca Nation Iroquois, Seneca-Cayuga Iroquois, Wyandotte Iroquois, Juaneno, Kalispel, Karuk, Kaw, Kickapoo, Oklahoma Kiowa, Klamath, Kootenai, Pala Band Luiseno, Lumbee, Lummi, Maidu, Makah, Maliseet, Mandan, Mattaponi, Menominee, Oklahoma Miami, Micmac, Mission Indians, Me-Wuk, Modoc, Mohegan, Mono, Nanticoke Lenni-Lenape, Narragansett, Navajo, Nez Perce, Nomlaki, Omaha, Osage, Otoe-Missouria, Ottawa-Ottawa, Pyramid Lake Paiute, Fallon Paiute, Pamunkey, Passamaquoddy, Pawnee, Penobscot, Peoria, Pequot, Pima, Piscataway, Pit River, Pomo, Ponca, Citizen Band Potawatomi, Prairie Band Potawatomi, Powhatan, Acoma Pueblo, Chochiti Pueblo, Hopi Pueblo, Isleta Pueblo, Jemez Pueblo, Laguna Pueblo, San Felipe Pueblo, San Ildefonso Pueblo, San Juan Pueblo, Santa Ana Pueblo, Santa Clara Pueblo, Santo Domingo Pueblo, Taos Pueblo, Zuni Pueblo, Muckleshoot Puget, Nisqually Puget, Nooksack Puget, Puyallup Puget, Skokomish Puget, Squaxin Island Puget, Suquamish Puget, Swinomish Puget, Tulalip Puget, Upper Skagit Puget, Quapaw, Quinalt, Sac and Fox, Salinan, Salish, Salish and Kootenai, Florida Seminole, Oklahoma Seminole, Serrano, Absentee Shawnee, Eastern Shawnee, Shinnecock, Shoshone, Cheyenne River Sioux, Crow Creek Sioux, Dakota Sioux, Fort Peck Sioux, Lower Brule Sioux, Oglala Sioux, Pine Ridge Sioux, Rosebud Sioux, Santee Sioux, Sisseton-Wahpeton Sioux, Stand Rock Sioux, Teton Sioux, Yankton Sioux, Spokane, Stockbridge, Tohono O'Odham, Tonkawa, Umatilla, Umpqua, Uintah Ute, Ute Mountain Ute, Wampanoag, Warm Springs, Washoe, Wichita, Nebraska Winnebago, Wintun, Wiyot, Yakama, Pascua Yaqui, Yavapai Apache, Tachi Yokuts, Tule River Yokuts, Cocopah Yuman, Havasupi Yuman, Hualapai Yuman, Maricopa Yuman, Quechan Yuman, Yavapai Yuman and Yurok.

of high school graduates 25 years and over increased an average of 11.66% for those tribes with no form of Indian gaming and 10.30% for tribes with gaming establishments – individuals 25 years and over with a bachelor’s degree or higher increased 15.97% for tribes without Indian gaming and 25.54% for tribes with gaming on average.

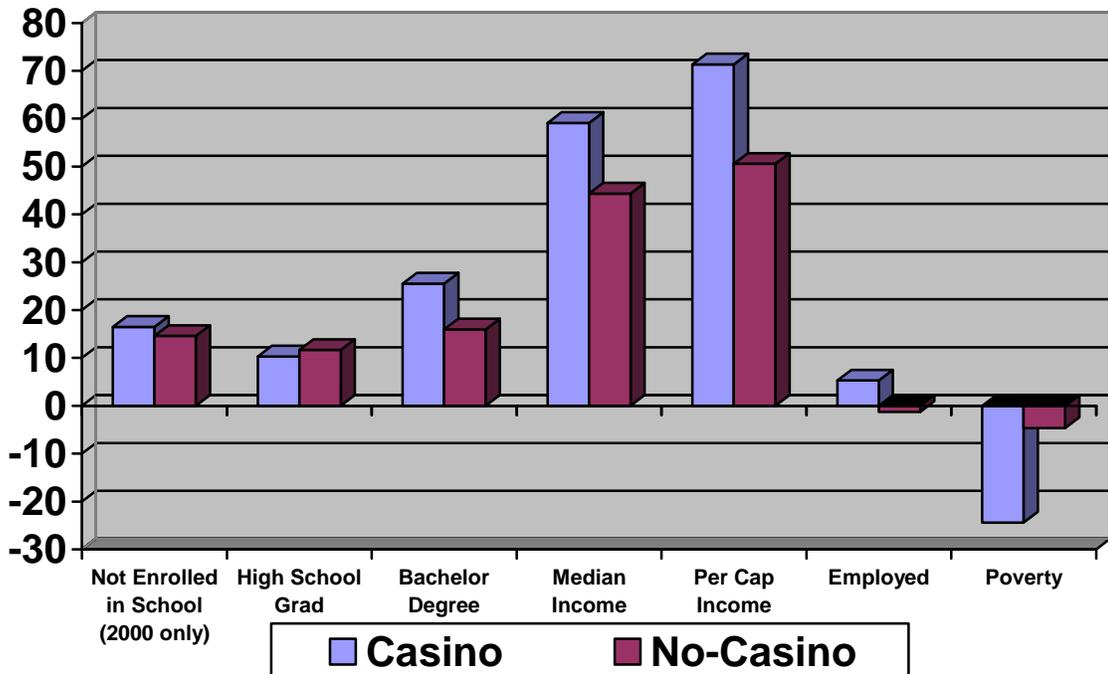
In examining poverty and income, the patterns are clear: tribes without Indian gaming saw an average increase of 44.35% in median household income, 50.57% in household per capita income, and decreases in percentage of 16 years and older employed by 1.26% and 4.66% in families living below the poverty line. In contrast, tribes with gaming operations experienced average increases of 59.12% in median household income and 71.33% in household per capita income, an increase of 5.29% in the percent employed and a decrease of 24.41% in families living below the poverty line.

The average differences between 1990 and 2000 suggest tribes with Indian gaming are recording larger gains in bachelor’s degree attainment, median household income, household per capita income, percentage employed, and a more significant decrease in families living below the poverty line. The percentage of the population 25 years and over that are high school graduates favored tribes without Indian gaming by 13.20% over tribes operating Indian gaming establishments. Also, tribes without gaming, in 2000, had a 13.01% lower rate of their population 16 to 19 years old not enrolled in school and not a high school graduate than tribes with gaming.

What has brought change in educational and economic stability among the 205 tribes studied? Do revenues produced by way of Indian gaming have an influence on the variables shown in Table 1? The failed governmental policy of the past to educate Native American children has placed them below national averages in every category of

education. By realizing their right to sovereignty, many tribes have chosen the path of Indian gaming and are establishing highly profitable casinos on their reservations.

Table 1. Difference in Percentages for Population (16 to 19 years) Not Enrolled in High School and Not High School Graduate in 2000 and Average Percentage Differences in High School graduates and Bachelor Degree attainment (25 years and over), Median Household Income, Household Per Capita Income, Persons Employed (16 years and over) and Families living below Poverty Line between 1990 & 2000.



CHAPTER 3

REVIEW OF RELATED LITERATURE: GAMING, EDUCATION & POVERTY

The passing of the Indian Gaming Regulatory Act in 1988 made it lawful for Native American tribes to operate Indian gaming on their reservations. The stated purposes of the Act included a legislative basis for the operation and regulation of Indian gaming and the protection of gaming as a means of generating revenue and economic development. This abrupt and exogenous experience might help explain the changes in Table 1.

The amount of research conducted on Indian reservations describing the impact of Indian gaming on education and economic stability is minimal; however, there seems to be a spike of interest in this area and future endeavors appear to be promising due to the fact that since the passing of the Indian Gaming Regulatory Act, tribes are rapidly building casinos on their reservations.

My purpose thus far is to provide a framework outlining the failed history of Indian Education and its current-positive trend as indicated in Table 1. Poverty and education go hand-in-hand and revenues provided by way of Indian gaming may be improving on both these subjects. According to my hypothesis, the introduction of Indian gaming onto reservations may be the social force that increases educational attainment and economic stability. Two possible mechanisms have surfaced that might explain changes in socioeconomic status and educational attainment among Native American tribes. First, a tribes' capacity for educational spending may determine the success of its students. The amount of revenue supplied through Indian gaming for educational programs might have an influence on a student's academic progress and

achievement. Secondly, Indian gaming supplies revenues and employment opportunities for tribal members that could initiate poverty reduction and income growth that can also lead to education improvement.

The following literature explores the different effects Indian gaming has on education and economic stability as well as the relationship between these two variables.

Indian Gaming and Education

Wayne J. Stein (1998) found that nations with gaming show improvement in grades and pride among Native American students. “Gaming revenues have provided greater educational opportunities for members of tribes that have chosen this strategy for economic development. Approximately 10.5 percent of net gaming revenues are being invested in new higher education scholarships, in K-12 facilities, in curriculum development for culture and language preservation and enhancement, or in existing educational institutions” (Stein, 1998:87). Gaming generating revenues have produced more resources to enhance the quality of education for Native American youth.

A more recent report states that “more than 20 percent of the net revenues from Indian gaming were used for education. Those revenues have helped build new head start buildings, day care centers, schools and libraries” (Stevens, 2007:14). The manner in which Indian gaming has an effect on education can be seen in a number of ways. Indian gaming’s influence on increasing employment and decreasing poverty is one mechanism that might help explain any improvement in educational outcomes for Native Americans. Another is Indian gaming investments in educational programs, which differs by each tribe as previously mentioned. These two mechanisms offer details that might help explain changes in educational outcomes for many Native American students.

The Harvard Project on American Indian Economic Development provided compelling evidence from their study on education (Kalt and Taylor, 2005). Though their study did not provide information in support of the above-mentioned mechanisms, it did distinguish between gaming and non-gaming tribes. Among their fourteen socioeconomic indicators, the importance of education is exemplified in their study on college and high school graduates. They show an increase in college graduates by 1.7% for non-gaming reservations and a 2.6% increase on reservations with gaming. High school graduates decreased by 0.3% for non-gaming areas and increased 1.8% for reservations with gaming. “For some Indian areas (areas other than the Navajo Reservation), the gains in college and high school graduates have brought Indians to a position comparable to the U.S. as a whole within the ten year span” (Kalt and Taylor, 2005:44). Yet, a gap remains as the percentage of Indian college graduates is still only half of the U.S. averages as a whole.

Culture and Corruption

Many tribal leaders see gaming as a threat to tribal culture as it provides materialism and monetary gains that undermine traditional ways. More importantly, they discourage the enthusiasm over the benefits of Indian gaming because the revenues generated do not cover the unmet needs of Indian Country and they will continue to be dependent on the United States government. The introduction of gaming onto reservations has also increased the probability of corruption and theft among its members.

The loss of culture is highly contested and one of the most cited concerns among elders of casino established reservations. They fear the casino has “created rampant

materialism, which is undermining the traditional religion and leading youth away from higher education and into drugs and underemployment” (Foley, 2005:296). Others feel the casino is a conspiracy by the government to shed Native Americans of their history and culture. In fact, most opponents to Indian gaming agree that casinos “will weaken tribal cultures and traditional values; increase domestic abuse and tribal factionalism; and increase corruption, especially of tribal leaders” (Peroff, 2000:150).

Gary C. Anders elaborates on the financial and regulatory issues of Indian gaming; he claims “due to the nature of the business – primarily on a cash basis without receipts or other written records – there are opportunities for theft, embezzlement, and criminal infiltration and because of the enormous profit potential, gaming may undermine the cultural integrity of Native American communities” (1998:104). Consequently, the revenues produced through Indian gaming are not always invested in education – they are often misplaced in the hands of unlawful individuals.

Many tribal leaders also view gaming as a plan set in place by the government in relation to previous termination policies. Ernest Truetongue, a tribal leader, states; “they finally figured out a way to strangle us – our religion and our language. Money is the god now. It’s making us greedy, splitting us apart” (Foley, 2005:298). Many Native American people have become compulsive gamblers and quickly return any proceeds that tribes have furnished them back to the casino.

Furthermore, the larger majority of tribes with Indian gaming provide disbursements to their members that vary greatly. For example, smaller tribes with large metropolitan populations, such as the Mashantucket Pequot’s Foxwoods Casino, may provide cash disbursements of \$35,000 or more a year. In contrast, larger tribes with

small populations supporting their establishments offer their members far less. These differences of disbursements may play a role in the level of materialism and commitment to traditional beliefs. Tribal elders “fear that the monthly per caps have made their teenagers aimless and feared that the youth have little interest in either traditional ways or a modern White education” (Foley, 2005:303).

It appears that there is still considerable debate about the benefits and limitations of Indian gaming. “Breaking the cycle of dependency requires the commitment of many people over several generations, and very few indigenous groups have accomplished this in the face of such overwhelming odds: invasions, wars, stolen land, assimilation policies, and cultural submersion” (Duffie, 1999:58). Revenues produced by way of Indian gaming may provide aid in helping to close the gap between what the federal government has provided and what is needed for education to succeed.

Economic Stability and Education

Poverty affects all populations, but for Native Americans and their children it is more extreme. “Estimates in 2000 indicate that slightly more than 12% of the overall population, and 17% of all children under the age of 18, were living at or below the federal poverty level” (Biesanz, Burchinal, Cox, Mistry and Taylor, 2004:727). In comparison, Native Americans residing on reservations are among the poorest populations in the United States, “with median household incomes that are 60 percent lower and poverty rates that are five times higher than the national average” (Evans and Topoleski, 2002:1).

Several studies describe the relationship between education and economic stability. Biesanz, Burchinal, Cox, Mistry and Taylor’s study offered support bridging

poverty and education. Their “results provide evidence that income matters for young children’s development across a number of developmental domains and, further, that it appears to matter more for poor children than nonpoor children” (2004:743). Because many Native American children are living at or below the poverty line might provide some explanation as to why so many perform at an academic level lower than the national average.

As Native Americans fight their way out of poverty, it becomes evident to them that education is important. Due to this correlation, it is easy to understand the connection between those groups who do not live in poverty and are highly educated and those living in poverty being the least educated. Indian Gaming may be providing enough revenue that many Native American tribes have increased funding for educational programs and provided economic stability to their members.

Indian Gaming and Economic Stability

Evans and Topoleski (2002) provide a thorough analysis of *The Social and Economic Impact of Native American Casinos*. Operating on a cluster of data, these authors provided a solid framework describing the costs and benefits of Indian gaming; however, they are concerned with future developments due to the immaturity of the data. While they did not focus on Indian gaming’s impact on education, they did cover how Indian gaming affects poverty, which is highly correlated with education. The authors utilized a simple difference-in-difference framework where they compare economic outcomes at the tribal level before and after tribes opened casinos (the treatment group) to outcomes over the same period for tribes that do not adopt gaming (the comparison group) for the years 1983, 1989, 1991, 1993, 1995, 1997, and 1999. They relied on a

variety of sources for their data including the Bureau of Indian Affairs, Indian Gaming Commission, Bureau of Economic Analysis and contacting individual tribes.

Their results show that four years after tribes open casinos, employment increased by 26%, unemployment rate decreased 10%, and the fraction of adults who work but are poor declined by 14%. To describe the individuals returning to the tribe, they run a set of regressions using the natural log of population for different segments of the population: under 16, those aged 16 to 64 and those 65 and over. “Four years after a casino opened, there is essentially no change in the population over the age of 65, but the population under age 16 and those 16-64 have increased by 18% and 15% respectively” (Evans and Topoleski, 2002:26). They also ran a basic model adding in two dummy variables (the first and second, and third and fourth years before a tribe opened a casino) to test whether tribes with poorer economic prospects were the ones most likely to adopt gambling. In all cases, the p-values are high showing that there is no statistically significant movement in the economic variables prior to a casino opening – meaning that even though tribes were poorer before the opening of a casino this was not a determining factor to incorporate Indian gaming into their way of life.

Therefore, the economic variables are more significant for larger tribes. In other words, the authors found that all tribal population groups show a rise in employment and population, but the results are only statistically significant for the two largest population groups. Those tribes with more than 1,250 members who open a casino see a statistically significant 10% point increase in the employment to population ratio and an equal-sized drop in the unemployment rate meaning larger tribes seem to benefit the most from Indian gaming.

The 2005 National Indian Gaming Association (NIGA) Annual Report highlights the many encouraging contributions Indian Gaming has to offer. The 2005 report provided “positive news on the effects of Indian gaming on the socio-economic conditions in Indian Country during the years of 1990 through 2000. NIGA and Member Tribes supported the study conducted by the Harvard Project on American Indian Economic Development. The study revealed that Native American tribes with Indian gaming experienced an average increase of 35 percent in their median household income” in ten years” (Kalt and Taylor, 2005:5).

In utilizing data from the 1990 and 2000 census, the report singled out the effects of poverty among Native American tribes with Indian gaming and non-gaming areas, including the Navajo Nation who recently, in 2008, adopted Indian gaming. “From 1990 to 2000, family poverty rates dropped by seven percentage points or more in non-gaming areas, and by about ten percentage points in gaming areas. Unemployment rates dropped by about two-and-a-half percentage points in non-gaming areas and by more than five percentage points in gaming areas” (Kalt and Taylor, 2005: i).

Of the fourteen socioeconomic indicators illustrated in the report, reservations with Indian gaming demonstrated greater improvement than reservations in non-gaming areas within twelve of the categories. Of these indicators real per capita income, median household income, family poverty and unemployment were most significant in connection with the Indian gaming and economic stability. Real per capita income increased for non-gaming reservations 21% and gaming reservations experienced a 36% increase; Median household income increased 14% for non-gaming reservations and 35% for reservations with gaming; family poverty decreased for both non-gaming and gaming

reservations by 6.9% and 11.8% respectively; unemployment also decreased by 1.8% for non-gaming reservations and 4.8% for gaming.

These decreases in poverty, which may have been triggered by Indian Gaming are encouraging, but the authors stress there still remains a significant gap between Indian country and the U.S. averages. Indian country still lags behind U.S. averages by almost half in real capita income, real median household income, and unemployment.

Examining social and economic characteristics of 22 reservations without casinos and 13 reservations with casinos located in Arizona and New Mexico, Gonzales, Lyson and Mauer's study (2007) provided mixed results on the impact of Indian gaming on economic stability. According to their quantitative analysis of the 1990 and 2000 U.S. Census of Population and Housing, "casino gambling is associated with improvements in social and economic welfare for both the Indian and non-Indian populations alike. However, Indian gaming did not contribute to positive outcomes in all the reservations studied" (2007:405). The authors examined the total population, both Indian and non-Indian, living on reservations.

The five key variables included the changes between 1990 and 2000; in the number of jobs created or lost on the reservation, in median family income, in poverty rates, in rate of home ownership, and in median value of owner-occupied housing (2007:407). Assessing only the Indian population, the change in the average number of jobs on the 22 reservations with casinos increased 20.3% compared to 24.2% for the 13 reservations without a casino. Within the ten years between 1990 and 2000, reservations with a casino surpassed reservations without a casino whose median household income was higher in 1990 by an average difference of only \$2,307 between 1990 and 2000. A

decline in poverty rates was evident in all the reservations studied but more so for the reservations with a casino who experienced a 12.6% drop from 1990 to 2000 compared to only a 7.0% decrease for reservations without a casino. Still, “30% of the Indian population on both reservations with and without casinos still lived in poverty in 2000” (Gonzales, Lyson and Mauer, 2007:415).

More research is required to measure the interactions between social/economic characteristics and Indian gaming to gain a more complete understanding of this dynamic effect. The results provide support for Indian gaming and its impact on the number of jobs created or lost on reservations, median family income, and poverty rates. Yet, these results are not consistent throughout all the reservations studied and in some cases reservations without a casino outperformed reservations with casinos in many of these measurements. The authors believe “the effects of gaming are filtered through various structural and cultural contexts that shape who *wins* and who *loses* when a casino opens on a reservation” (2007:416).

Concerns

In 2006, Evans and Kim developed an econometric framework demonstrating a difference-in-difference model to explain the economic growth for tribes that opened a casino before 1999 and those that did not. Their analysis of the 1990 and 2000 census includes all Native Americans who lived on federally-recognized reservations in the lower 48 states. Their final sample included 265 tribes, 142 consisting of tribes that had opened a casino by the end of 1998, pooling a total of 470,050 Native Americans. They claim “the rise of casino gaming on reservations increased labor force participation rates, employment, full-time/full-year employment, and wages” (Evans and Kim, 2006:23).

The statistically significant results of Evan and Kim's (2006) study show a labor force participation increase of 6% for Native American women without a high school degree and a 3.4% increase for those with a high school degree or greater. For Native American men, Indian gaming increased the employment rate by 5.7% for those with less than a high school degree and by 6.7% for high school graduates. Therefore, employment for Native American women and men increased for all education levels subsequent to the opening of a casino. The results also generate changes in hourly wages for men and women after a casino opened. For men, hourly wages are \$1.78 higher for the least educated, \$1.68 higher for those with a high school diploma, and \$1.38 for those most educated. Wages for women are oddly different after the opening of a casino. Hourly wages for the least educated women increased \$0.51, \$1.22 higher for those with a high school diploma, and \$1.00 for the most educated group.

The authors believe that "family income is a strong predictor of education attainment so the better financial standing of Indian families after a casino opened may increase schooling of their children" (Evans and Kim, 2006:3). Unexpectedly, they claim Native American youth are dropping out of high school at a higher rate and college enrollment rates have also reduced due to the introduction of Indian gaming.

Evans and Kim (2006) believe "because labor market opportunities have increased for Native American men and women with low levels of education and employment and wages of low-skilled workers have increased relative to higher-skilled workers, the expected returns to education have fallen" (24). In fact, they found Native Americans aged 17 to 18 show a statistically significant decline in high school enrollment on reservations with casino gaming. The rate is lower by 3.6% for 17 year-olds and by

6.6% for 18 year-olds living on reservations with a casino. They create a set of four dummy variables to measure the effect of age groups between 20 and 40; 20-24, 25-29, 30-34 and 35-40. Graduation rates for males dropped 9.6% for the 20-24 age group and 4.0% for the 25-29 age group. For females, the decline in high school graduation rates dropped 11.5% for the 20-24 age group and 9.3% for the 25-29 age group.

These changes also affect the decision for young Native Americans to attend college. Among the population aged 20-24, there is a statistically significant drop in college entrance of 5.3% for males and a 7.8% drop for females. Twenty-two percent of reservation populations aged 25 to 40 do not have a high school degree and only 43% have a college education. These estimates show “that increased availability of jobs for low skilled workers is associated with sharply lower levels of high school enrollment, high school completion, and college entrance” (Evans and Kim, 2006:31). The introduction of Indian gaming has little impact on increasing educational attainment according to their model.

As presented, the mechanism through which Indian gaming is associated with educational gains remains unclear and there is no consensus yet that Indian gaming is cause for the improvement in educational outcomes for Native American students. The following chapter provides the details of my research design, which include variables that test my hypothesis that the introduction of Indian gaming onto reservations increases educational attainment and economic stability by examining the percent of the population not enrolled in school and not a high school graduate, poverty, income, and the percent of the population employed.

CHAPTER 4

RESEARCH DESIGN

By examining both cross-sectional data and longitudinal case studies, I anticipate a more complete understanding on the impact of Indian gaming on educational attainment and enrollment and also the dynamics of how this relationship occurs. Examining 1990 and 2000 census data provides a picture of how Indian reservations with gaming have changed – in terms of education and economic stability – in contrast to those reservations without gaming. Due to the difficulties of matching variables from the 1990 and 2000 census data to create a more cohesive model looking at the differences in education and economic measures within a ten year span, I draw only from the data in 2000 describing the *Characteristics of American Indians and Alaska Natives by Tribe and Language* collected from the United States Census Bureau as my primary data source. The Census Bureau is one of the leading sources of data describing the trends in the American people, particularly in their demographics. Individual level data is collected and categorized by tribal affiliation based on self-identification on the “race” question in the Census. It does not necessarily correspond to the actual number of individuals living on the reservation, nor does it prove that every individual self-identifying as belonging to a tribe is a certified member. Race is a social construct rooted in the idea of classifying individuals based on hereditary and physical characteristics.

Native American tribes, both federally recognized and non-recognized, are my unit of analysis based on their census tribal identification. I have personally chosen to include non-recognized tribes to easily categorize alongside the tribes that did not operate Indian gaming establishments between 1990 and 2000. Non-recognized tribes are not

allowed to establish gaming operations legally on their reservations according to the Indian Gaming Regulatory Act of 1988; therefore non-recognized tribes did not operate Indian gaming establishments between 1990 and 2000. In addition, research on a selection of rapidly changing tribes in respects to economic stability and education will serve as my case studies. The quantitative sample was selected based on the criteria that I would be able to distinguish gaming from non-gaming tribes and match these tribes with the data supplied by the 2000 census.

To determine gaming from non-gaming tribes, data² was collected from the National Indian Gaming Commission website, which provides the year selected Native American tribes are approved to pursue the establishment of Indian gaming on their reservations. The 1988 Indian Gaming Regulatory Act requires that each Tribe submit a Tribal Gaming Ordinance that must be approved by the National Indian Gaming Chairman before any Indian gaming operations begin. While this information may be biased due to the fact that many Native American tribes were operating gaming establishments long before their ordinance was approved and some have taken several years to establish gaming following their approved ordinance, it provides the best possible measure of how long selected Native American tribes operated Indian gaming during 1990 and 2000. In my final analysis, I selected to study 205 Native American tribes in the United States both federally recognized and non-recognized: 158 with Indian gaming 47 without, representing the vast array of cultures.

Presenting the percentage of the population 25 years and over who are high school graduates or higher and the percentage of this population with a bachelor's degree

² A new data set was created on the information obtained from the National Indian Gaming Commission website.

or higher was key in providing evidence for changes in educational outcomes between 1990 and 2000 in Table 1. However, due to the fact that my gaming variable is measured by the number of year's Native American tribes have conducted gaming operations under the approval of the National Indian Gaming Commission between 1990 and 2000, including the population 25 years and over would be biased because this sample would not have been impacted by Indian gaming during this time span due to their age. The population sample of 25 years and over in 2000 was 15 years and over in 1990 and this measurement does not coincide with the 10 years of possible Indian gaming influence.

In the current paper, I examined the effects of Indian gaming and economic stability on education while controlling for other variables which might influence education. Through these models, I tested my hypothesis on the impacts of Indian gaming on educational enrollment or economic stability among Native American Tribes. Then in the separate analyses, I examined the effect of having Indian gaming on four measures of economic stability.

Now I turn to a more detailed discussion of different models. Models 1-8 examine the effects of Indian gaming on education. Education (dependent variable) was measured as the percentage of 16 to 19 years old not enrolled in school and not a high school graduate in 2000. Indian gaming was indicated by the number of years a tribe has operated Indian gaming establishments under the approval of the National Indian Gaming Commission during 1990 and 2000. To examine my second question on the effect of economic stability on education, Models 1-8 also include four economic measures (the percentage of families living below the poverty line, median household income,

household per capita income, and the percentage of the population 16 years and older employed in 2000) as independent variables.

The control variables for this set of models included various measures of household stability such as the percentages of married-couple and female householder (no husband present) families in 2000. The percentages for married-couple and female householder families were calculated by dividing the number of married-couple families and the number of female householders by the total number of households and multiplying by 100.

Because of high correlation among independent variables, I used a series of multiple regression models (Models 1-8). Models 1-8 alternate independent variables in response to issues of multicollinearity. (For example, married couple families and female householders had a correlation of $-.632$. Among the economic variables, poverty was highly correlated with median household income ($-.838$), household per capita income ($-.750$), and the population employed ($-.669$); median household income was correlated with household per capita income ($.800$) and the population employed ($.578$); and household per capita income and the population employed had a correlation of $.565$). Leaving important independent variables out of the model could lead to misspecification, possibly biasing the estimated effects of other independent variables.

Models 9 to 16 explored the effect of Indian gaming on economic stability. I considered four measures for economic stability based on studies that examined the relationship between Indian gaming and economic stability (Evans and Kim, 2006; Evans and Toopleski, 2002; Gonzales et al., 2007). Economic stability was measured by the percentage of families living below the poverty line (models 9 and 10), median household

income (models 11 and 12), per capita household income (models 13 and 14), and the percentage of the population 16 years and older employed (models 15 and 16). I logged median and per capita household income to capture the effect of independent variables on those measures of economic stability in multiplicative terms. My primary independent variable in Models 9 to 16 is the number of years a tribe has operated Indian gaming establishments under the approval of the National Indian Gaming Commission during 1990 and 2000. Control variables for this set of models included the percentages of married-couple families, and female householders (no husband present). Again, I alternated the independent variables due to multicollinearity.

These sixteen models allow me to examine the direct effect of Indian gaming on education, and also the indirect effect of Indian gaming on education through economic stability, in support of one of the two described mechanisms. Utilizing a combination of tables and graphs I reveal the results of my quantitative analysis. Table 1 illustrates the percentage differences in education and economic variables between 1990 and 2000 and the percentage of 16 to 19 years olds not enrolled in school and not a high school graduate in 2000, Table 2 provides the correlation coefficients testing the relationship between selected variables in 2000, and Table 3 presents the results of my multiple regression analysis for the 2000 data.

CHAPTER 5

RESULTS

In this section, I provide the results of the correlations and cross-sectional multiple regression analysis using the 2000 census sample. Also, five longitudinal case studies are selected to describe three possible outcomes for tribes with and without Indian gaming and comparing their successes in economic stability and education. The focal point of my study is to test the impact of Indian gaming on educational attainment and enrollment among selected Native American tribes. My findings are summarized in the following tables and illustrations.

First, I will examine the bivariate relationship between key independent variables and dependent variables by correlation analysis. Table 2 represents the correlation coefficients for key independent variables and dependent variables.

Indian Gaming and Education Model

The correlation between Indian gaming and the percentage of 16 to 19 year olds not enrolled in school and not a high school graduate was not statistically significant, indicating no bivariate relationship between Indian gaming and educational deficiency.

Economic Stability and Education Model

Poverty was positively correlated with education ($r = .290$). The weak correlation suggests that as the percentage of families living below the poverty line increases, the percentage of population not enrolled in school and not a high school graduate also increases, but this pattern is not highly consistent. Median income and education were negatively correlated. The weak negative correlation of $-.187$ suggests that median household income decreases as the percentage of population not enrolled in school and

not a high school graduate increases, but again in an inconsistent pattern. Household per capita income was negatively correlated with education ($r = -.287$). As household per capita income decreases, the percentage of population not enrolled in school and not a high school graduate increase, again in a fairly weak relationship. The correlations between the population 16 years and older employed and the population 16 to 19 years old not enrolled in school and not a high school graduate was $-.429$. This suggests that as the percentage of persons employed 16 years and older decreases, the percentage of population not enrolled in school and not a high school graduate increases, and that this pattern is moderately strong.

Indian Gaming and Economic Stability Model

Poverty was positively related to Indian gaming ($.147$). The positive correlation suggests that as the percentage of families living below the poverty line increases, the number of years of having Indian gaming also increases, but its small value indicates that this overall pattern is not very consistent. Indian gaming and median income were negatively correlated. The weak negative correlation of $-.192$, suggests the number of years of having Indian gaming increases, median income decreases, but with many exceptions to this pattern. The correlation between Indian gaming and household per capita income was also weakly negative ($-.136$). The number of Indian gaming years increases as household per capita income decreases, but in a rather inconsistent pattern. The correlation between Indian gaming and percentage employed was not statistically significant.

Most of these bivariate relationships between main independent and dependent variables were statistically significant, except for the relationship between Indian gaming

and education, and between Indian gaming and the percentage employed. However, most correlations were weak, suggesting weak relationships between the main independent and the dependent variables. The direction of the bivariate relationship between key variables did not support my hypothesis. The positive relationship suggests, as the number of years of having Indian gaming increase the percent of the population not enrolled in school and not a high school graduate also increase.

Table 2. Pearson Correlations, 2000.

<u>Indian Gaming and Education Model</u>	<u>Correlations</u>
Indian Gaming and Not Enrolled in School and Not a High School Graduate (16 to 19 years)	.031
<u>Economic Stability and Education Model</u>	
Poverty and Not Enrolled in School and Not a High School Graduate (16 to 19 years)	.290**
Median Household Income and Not Enrolled in School and Not a High School Graduate (16 to 19 years)	-.187*
Household Per Capita Income and Not Enrolled in School and Not a High School Graduate (16 to 19 years)	-.287**
Population Employed (16 years and older) and Not Enrolled in School and Not a High School Graduate (16 to 19 years)	-.429**
<u>Indian Gaming and Economic Stability Model</u>	
Indian Gaming and Poverty	.147*
Indian Gaming and Median Household Income	-.192**
Indian Gaming and Household Per Capita Income	-.136*
Ind ³ ian Gaming and Population Employed (16 years and older)	-.064

**Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

³ Correlations for all variables: Not Enrolled in School and Not a High School Graduate and: Couple HH (-.280**) and Female HH (.479**); Indian Gaming and: Couple HH (-.150*) and Female HH (.127); Median Income (log) and: Per Cap Income (log) (.800**), Poverty (-8.38**), Couple HH (.524**), Female HH (-.537**) and Employed (.578**); Per Cap Income (log) and: Poverty (-.750**), Couple HH (.346**), Female HH (-.531**) and Employed (.565**); Poverty and: Couple HH (-.461**), Female HH (.605**) and Employed (-.669*); Employed and: Couple HH (.434**) and Female HH (-.448**); and Couple HH and: Female HH (-.632**).

Table 3 lists the results of multiple regression analysis examining the effects of Indian gaming and economic stability on education (Model 1-8), and the effects of Indian gaming on economic stability (Model 9-16).

Table 3. Unstandardized Coefficients from the Regression of Education Variables on Independent Variables, 2000.

<u>Independent Variables</u>	<u>Not Enrolled in School/HS Grad</u>								<u>Poverty</u>	
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>	<u>Model 5</u>	<u>Model 6</u>	<u>Model 7</u>	<u>Model 8</u>	<u>Model 9</u>	<u>Model 10</u>
Married Couple Families	-.172* (.074)	-	-.229* (.078)	-	-.187* (.070)	-	-.111 (.069)	-	-.449* (.063)	-
Female Householder	-	.483* (.084)	-	.544* (.080)	-	.467* (.081)	-	.357* (.076)	-	.656* (.062)
Indian Gaming	-.042 (.248)	-.068 (.230)	-.029 (.252)	-.047 (.229)	-.026 (.247)	-.067 (.230)	.002 (.236)	-.055 (.223)	.296 (.233)	.265 (.208)
Families living below the Poverty Line	.182* (.071)	.003 (.074)	-	-	-	-	-	-	-	-
Median Household Income (log)	-	-	-1.908 (2.830)	3.557 (2.638)	-	-	-	-	-	-
Household Per Capita Income (log)	-	-	-	-	-6.458* (2.286)	-.956 (2.400)	-	-	-	-
Population Employed (16 years and older)	-	-	-	-	-	-	-.421* (.083)	-.279* (.083)	-	-
Not Enrolled in School and Not a High School Graduate (16 to 19 years)	-	-	-	-	-	-	-	-	-	-
R2	.112	.230	.081	.238	.119	.230	.196	.276	.219	.371

N=211

Note: Standardized errors are in parentheses

*P-value < .05

Table 3. Unstandardized Coefficients from the Regression of Education Variables on Independent Variables, 2000 Continued

<u>Independent Variables</u>	<u>Household Income (log)</u>				<u>Population Employed</u>	
	<u>Median</u>		<u>Per Cap</u>		<u>Model 15</u>	<u>Model 16</u>
	<u>Model 11</u>	<u>Model 12</u>	<u>Model 13</u>	<u>Model 14</u>		
Married Couple Families	.014*	-	.010*	-	.337*	-
	(.002)	-	(.002)	-	(.050)	-
Female Householder	-	-.016*	-	-.017*	-	-.381*
	-	(.002)	-	(.002)	-	(.054)
Indian Gaming	-.012	-.013	-.009	-.008	.003	-.022
	(.006)	(.006)	(.007)	(.007)	(.184)	(.182)
Families living below the Poverty Line	-	-	-	-	-	-
	-	-	-	-	-	-
40 Median Household Income (log)	-	-	-	-	-	-
	-	-	-	-	-	-
Household Per Capita Income (log)	-	-	-	-	-	-
	-	-	-	-	-	-
Population Employed (16 years and older)	-	-	-	-	-	-
	-	-	-	-	-	-
Not Enrolled in School and Not a High School Graduate (16 to 19 years)	-	-	-	-	-	-
	-	-	-	-	-	-
R2	.287	.304	.127	.287	.189	.201

N=211

Note: Standardized errors are in parentheses

*P-value < .05

The summary of the multiple regression analysis indicates some interesting results. First, due to the nature of my study and the difficulty of obtaining valuable data on additional independent variables, it was difficult to obtain a good fit as indicated by the low values of R-square, ranging from .112 to .371, throughout my models. This may be related to the limitations of the available data. As previously stated, the Census data includes anyone who self-identified as belonging to a particular tribe; this group does not necessarily coincide with the group of tribal members enrolled or living in a particular tribe's territory. For example, someone who self-identifies as being of the San Felipe Pueblo may not actually be an enrolled member or living in the Pueblo. I make use of the variables available that fit my criteria in dealing with education and economic stability among the selected Native American tribes. The low R-squares might also be suggesting that some important independent variables are missing.

To test the possibility that Indian gaming has a direct effect on education, I chose to examine the relationship between Indian gaming and education and elaborate on economic measures only if this relationship exists. In models 1-8, I tested my dependent variable, as indicated by the population 16 to 19 years old not enrolled in school and not a high school graduate in 2000, with several independent variables. The results are as follows.

In models 1-8, the impact of Indian gaming on education was not statistically significant. The results do not support my hypothesis that more years of having had Indian gaming decrease the level of educational deficiency.

However, several other independent variables were statistically significant in models 1-8. Three economic stability variables (families living below the poverty line in

model 1, household income per capita in model 5, and the percentage of employed in model 7 and 8) had statistically significant effects on the percentage of population 16 to 19 years old not enrolled in school and not in school; these effects were in the expected direction. However, median income did not have a statistically significant effect on education in any models. The effects of married couple families (in models 1, 3 and 5), and female headed households (in models 2, 4, 6, and 8) were also statistically significant.

Although the effects of poverty and household income on education were statistically significant, the effects seem fairly small in real terms. According to model 1, for every 1% increase in the percentage of families living below the poverty line, the percentage of 16 to 19 year olds not enrolled in school and not a high school graduate increases by .182%. Model 5 indicates that as household per capita income increases 10%, the percentage of 16 to 19 year olds not enrolled in school and not a high school graduate decreases 0.62%, controlling for other variables⁴. The effect of the percentage employed seems to be large enough to have a real impact. As the percentage employed increases 1%, the percentage of 16 to 19 year olds not enrolled in school and not a high school graduate decreased .42% (in model 7) or .28% (in model 8).

Looking at the control variables, the household status measures consistently had significant effects on educational deficiency (in the expected direction) across different models. According to models 1, 3, and 5, as the percentage of married couple families increase 1%, the population not enrolled in school and not a high school graduate decreases .17% to .23%, holding Indian gaming and the several economic measures

⁴ Figure was calculated by multiplying $-6.458 \times \log 1.10$

constant. Models 2, 4, 6, and 8 indicate that the percentage not enrolled in school and not a high school graduate increases .36% to .54% as the female headed household measure increase 1%.

In the models testing the relationship between education and economic stability (models 9 to 16), years of Indian gaming did not show statistically significant effects on any measures of economic stability (poverty in models 9 and 10, median household income in models 11 and 12, household per capita income in models 13 and 14, and the % employed in models 15 and 16).

However, household stability variables (married couple families and female headed households) had statistically significant effects on all four economic measures. The percentage of families living below the poverty line is predicted to decrease .449% as the percentage of married couple families increases 1%, controlling for Indian gaming (model 9). Median income increases 1.4% as the percentage of married couple families increases 1%⁵. Married couple families had a similar effect on household income per capita. Results also indicated that population employed increased .34% as married couple families increased 1%. Female headed households had similar effects on economic measures (see models 10, 12, 14, and 16) as those of married couple families, but in the opposite direction. For example, families living under poverty line were predicted to increase .66% as female headed households increased 1% in model 10.

The cross-sectional analysis of the 2000 census data, along with the data collected from the National Indian Gaming Commission, suggests that no link exists between Indian gaming and improvements in educational attainment. In other words, the results

⁵ Figure was calculated by multiplying $e^{.014} = 1.014$

indicate no evidential claim that Indian gaming has a direct impact on education. The results did indicate that education, as measured by the population 16 to 19 years old not enrolled in school and not a high school graduate, was influenced by the status makeup of the households, families living below the poverty line, household per capita income, and the population 16 years and older who are employed. While my current data show no relationship between Indian gaming and economic stability, tribes can make a conscious effort to use revenues from Indian gaming to increase economic stability. If so, educational outcomes might eventually improve due to evidence from studies that support the link between economic stability and education. Also, all the economic variables were influenced by household status.

Longitudinal Case Studies

Because of the bias measure of Indian gaming as determined by the approval of tribal gaming ordinances by the National Indian Gaming Commission, the goal of my case study research is to provide further explanation to describe the relationship between Indian gaming and education in my quantitative analysis. I will compare three control groups as identified by federal tribal affiliation. The first control group will consist of two tribes selected on the criteria that they do not have any form of Indian gaming before the year 2000 (one federally recognized and one not federally recognized). The following control groups consist of tribes that are federally recognized and therefore legally bound to operate Indian gaming establishments. The operation of a less profitable Indian gaming establishment provides the conditions for the second control group. And the third control group is comprised of two tribes selected on the provisions that it

operates highly successful and profitable gaming establishments. I will also examine their successes in education.

The Lumbee and Navajo tribes fall well below the average educational trend. The population of the Lumbee tribe 16 to 19 years old not enrolled in school and not a high school graduate was set at 16.2% in 2000. Their high school graduation rate consisting of the population 25 years and over increased from 51.6% in 1990 to 64.7% in 2000 and bachelor degree attainment for the same population increase from 9.4% in 1990 to 12.5% in 2000. The percent of Navajo's population not enrolled in school and not a high school graduate in 2000 is 13.8%. The percent of high school graduates increased from 51.0% to 62.7% and those individuals obtaining a bachelor's degree increased from 4.5% to 6.9% between 1990 and 2000.

These tribe's differ in region, size and culture, but more importantly, both tribes did not have Indian gaming establishments on their reservation between 1990 and 2000. The Lumbee tribe is faced with the task of federal recognition, which denies their claim to Indian gaming. As the largest tribe in the U.S., the Navajo nation is fully recognized by the federal government as a sovereign nation with treaty rights but they did not open a casino until 2008. Both are in need of education reform due to high percentages of their population 16 to 19 years old not enrolled in school and not a high school graduate and low averages of their population 25 years and over earning a high school diploma and bachelor's degree.

The Lumbee tribe, consisting of 50,000 members, is located in North Carolina and is considered one of the largest tribes in the United States without having the status of federal recognition. "Almost 50 years ago, Congress recognized the Lumbee as

Indians but denied them federal benefits” (Reiss, 2005:1B). Tribal leaders have challenged Congress to grant them full recognition but their efforts have fallen short. Their neighbors – the Eastern Band of Cherokee Indians – are concerned and protest the Lumbees desire for recognition in fear that a new casino would damper the progress of their own. Other concerns are due to their enormous population. The Lumbees would decrease the already meager funding provided by the government for recognized tribes and would cost taxpayers millions of dollars if they gained full acceptance. Opponents also argue that the “Lumbees don’t have the historical documentation to prove their heritage” (Barrett, 2006:A1).

In response, the Lumbee state they have no plans on using recognition benefits to establish Indian gaming enterprises on their reservation and insist they need federal funding to help in the areas of health care, housing and education. “The Lumbee, with its strong religious heritage and pattern of church leaders becoming tribal leaders offer another reason why they wouldn’t push for gaming” (Barrett, 2006:A1). Most important, they long for a sense of dignity and pride that comes with being recognized. Recent attempts at recognition will surpass all others; in that, the tribe is gathering as much as \$500,000.00 to be given to the lobbying efforts in Washington.

“So while other tribes have reaped the benefits of federal recognition and some have become rich from casino gambling, the Lumbee have been left to fight long, lonely and frustrating battles for dignity, acceptance and a way out of the region’s disheartening poverty” (Rogers, 2006:B1). Without the full recognition by the government, many Lumbees feel they are only *Second-Class Indians*. The millions in federal money would relieve some of the strains of poverty, but the development of a casino could dramatically

increase measures of economic stability such as median household income and moving families out of poverty, thus, increasing their chances for a better education.

The Navajo Nation resisted all forms of Indian gaming including casinos until 2008. The largest Indian reservation in the country with a current population of 250,000, the Navajo Nation is located in the four-corner regions of New Mexico, Arizona and Utah. In 2000, 33.8% of the Navajo population was living at or below the poverty line.

Many Navajo communities supported the development of Indian gaming but the many legal barriers set in place by the tribe slowed down the process. For example, there was confusion over the distribution of revenues. According to the gaming ordinance of 2001, “all gaming operations on the reservation will be owned entirely by the Navajo Nation” (Linthicum, 2004:B1). Several Navajo communities proposed an alternative to revenue sharing. They felt the majority of profits from a newly established casino should go directly to the community in which the casino is located, then – as their conditions improve – the majority of profits would shift to another community in need. Others argued that the act of gambling should not be demonstrated by tribal members resulting in recycled money. They would rather have visitors and spectators provide the profits for the tribe.

The future of the Navajo nation looks bright. With their first casino in full operation, they plan on building several more in the coming years. Since “there hasn’t been much improvement for Navajo youths since No Child Left Behind became law in 2001, they have created their own department of education and inter-state school board to deal with the unique-cultural circumstances of educating Native American youth” across three different states (Bulkeley, 2005). The introduction of Indian gaming could increase

funding for this newly established department by providing the economic leverage it needs to succeed.

Originally established near Fort Stanton in 1873 and later moved to their original homelands in 1883, the Mescalero Apache reservation is located in the rocky mountains of southern New Mexico with a population of 3,156 in 2000. In 1975, the Inn of the Mountain Gods was built and operated as a hotel resort. Gaming was legally established in 1996 and a brand new hotel and casino bearing the original name was reopened in 2005. The tribe experienced early success in gaming but is now struggling to produce profitable revenues. In 2000, 14.4% of their sample population 16 to 19 years old was not enrolled in school and not a high school graduate in 2000. High school graduates 25 years and over increased from 67.8% in 1990 to 76.9% in 2000 and individuals receiving a bachelor's degree or higher increased from 6.9% to 10.3% between 1990 and 2000.

“The tribe’s 273-room luxury resort below snow-capped Sierra Blanca, along with a casino sparkling with nearly 1,000 slot machines, is the centerpiece of tribal economic development” (Romo, 2008:1). But the debt of \$200 million due in 2010 has some worried. According to files forwarded to the Securities and Exchange Commission, their financial standings show net losses of \$28.4 million from May 2005 to the end of January 2008 and a net income of only \$88,761 in the quarter that ended in January 2009. In fact, “the Inn of the Mountain Gods Resort and Casino has generated net profits in only three of the eleven quarters since the rebuilt resort and casino opened in 2005” (Romo, 2008:2).

Attracting visitors to this remote location is one of the difficulties. The occupancy rate of the new Inn of the Mountain Gods “averaged 76% for the nine months

that ended in January 2008, but fell to 61% in the third quarter” and these trends are continuing (Romo, 2008:1). El Paso, Texas offers the only metropolis area within 150 miles (132 miles), with a population over 50,000, supporting this establishment.

Finding suitable administration to manage the task of making Indian gaming profitable for the tribe is another hurdle in the way of success. Just recently, four top executives of the Inn of the Mountain Gods were fired by leaders of the Mescalero Apache tribal government according to the Albuquerque Journal (Romo, 2009:1). Chief operating officer, chief financial officer, director of marketing, and director of casino operations were all released of their duties. “The tenures of the chief operating officer and chief financial officer were brief. The chief operating officer was hired in June of 2008 at an annual salary of \$275,000, and the chief financial officer was hired in September of the same year at an annual salary of \$200,000” (Romo, 2009:1). They now have Warner Gaming subsidiary as their management consultants. The Mescalero Apache tribe is unique when it comes to Indian gaming operations. Due to the \$200 million public bond debt, the details of their financial records are on public display.

In the end, the lack of educational funding provided by means of Indian gaming is going to have an impact on scholarships and resources to improve educational programs on the reservation. The enormous debt will take a lot to overcome but there is optimism and the change of leadership is one step towards improvement. Tribal president Carleton Naiche-Palmer explains, “even though we might have experienced some deficit, we’re moving toward a better future” (Romo, 2009:2).

In contrast, the Paiute and Potawatomi tribes are enjoying the benefits of full-federal recognition and the rewards of their profitable casinos. Unlike the Lumbee and

Navajo tribes who did not have Indian gaming establishments between 1990 and 2000 and the Mescalero Apache tribe who is struggling to produce profits, these two tribes are experiencing success in both Indian gaming revenues and education. The Paiute tribe of Pyramid Lake had only 8.9% of their population 16 to 19 years old not enrolled in school or not a high school graduate. Of the population 25 years and over, the percent of high school graduates was 81.2% and those receiving a bachelor's degree or higher was 6.3% in 2000 compared to 73.3% for high school graduates and 4.2% for individual's receiving their bachelor's degree in 1990.

Only 4.2% of the population 16 to 19 years old was not enrolled in school and not a high school graduate for the Citizen Band of Potawatomi Indians. The percent of their high school graduates 25 years and over increased from 82.0% in 1990 to 86.4% in 2000, while the same population experienced increases from 17.1% to 27.8% in bachelor degree attainment between 1990 and 2000.

The Potawatomi tribe, including its 256,000 square-foot casino and bingo hall, is located just minutes from downtown Milwaukee, Wisconsin. Since the doors of the casino opened in 1991, the Potawatomi tribe has thrived in local and state economies. In fact, "a new casino deal between Gov. Jim Doyle and the Forest County Potawatomi tribe reinstates a payment schedule that will bring the state \$43.6 million this year" (Marley and Schultze, 2005:1). Everyone in the state benefits from the revenues produced by the casino.

In addition, the Wisconsin Supreme Court granted permission for the Potawatomi tribe to expand. "Completed in 2008, the casino will add about 1,000 employees, for a total of nearly 3,000 part and full-time jobs and permit a doubling of slot machines at the

casino to about 3,100 and table games also will double or triple from the current 50” (Schultze, 2006:1). Taken into perspective, this could double their current revenues and could generate up to an estimated \$570 million a year.

With only 900 enrolled members in the Potawatomi tribe – the chance of them experiencing the same effects of the previously mentioned case studies are slim. Their school enrollment percentages are high; the percentages of the population graduating from high school or receiving a bachelor’s degree are also high compared to the other control groups. The Potawatomi tribe has also increased their median household income from \$30,106 in 1990 to \$48,958 in 2000 for an astonishing 62.62% increase.

Similar to the Potawatomi tribe, the Paiute tribe has flourished since the opening of their casino in 1995. Located in the eastern sierra mountains of California, the 2,000 enrolled members are seeing an increase of 109% in their median household incomes between 1990 and 2000. It appears that the size of and context of a tribe are the main explanation for the success or failure of Indian gaming.

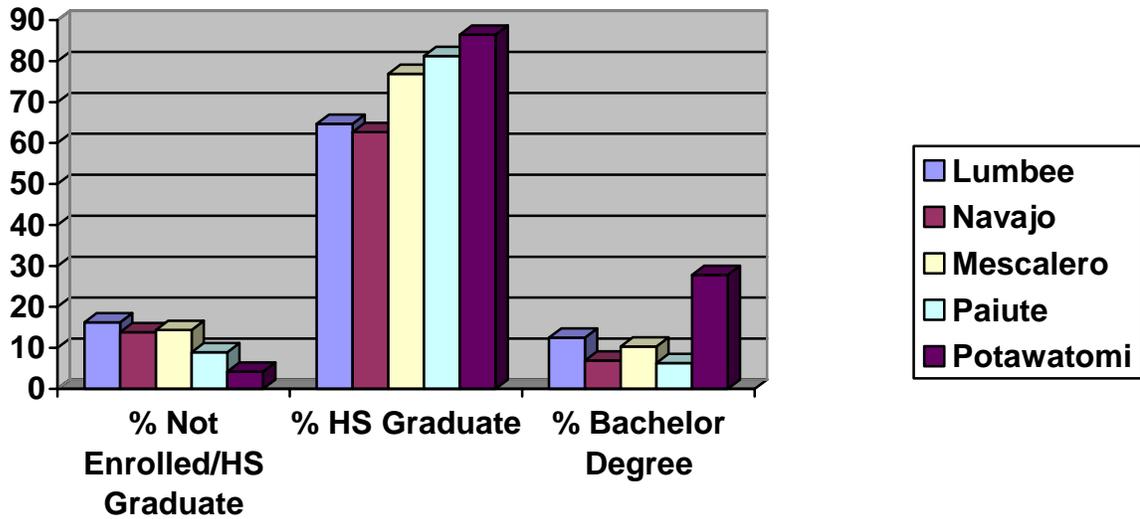
The results of my cross-sectional analysis falsify my hypothesis while my longitudinal case study analysis sheds some light on the impact Indian gaming may have on education and economic stability and might help explain the lack of statistical results attributable to a weak measure of Indian gaming. According to Table 4, the Lumbee tribe had 16.2% of their population 16 to 19 years old not enrolled in school and not a high school graduate in 2000. Of their population 25 years and over, 64.7% were high school graduates and 12.5% received a bachelor’s degree or higher in 2000. The Navajo Nation also had a high percentage of their population not enrolled in school and not a high school graduate at 13.8% in 2000. Their percent for high school graduates 25 years and

over was 62.7% and individuals receiving a bachelor's degree or higher was 6.9% in 2000. Neither of these tribes operated any form of gaming between 1990 and 2000.

The remaining three tribes did have Indian gaming, some more successful than others. The Mescalero Apache tribe is struggling to payoff debt while generating profits and the percentage of their population 16 to 19 years old not enrolled in school and not a high school graduate stood at 14.4% in 2000. For the population 25 years and over, their high school graduation percentage was 76.9% and 10.3% was the average percentage of individuals receiving a bachelor's degree or higher in 2000.

The Paiute and Potawatomi tribes are very successful in gaming and both record low percentages of their populations 16 to 19 years old not enrolled in school and not a high school graduate. In 2000, the Paiute tribe stood at 8.9% and the Potawatomi's had only 4.2% not enrolled in school and not a high school graduate. Also in 2000, the percent of the Paiute tribe's population 25 years and over graduating high school was 81.2% and of that population 6.3% received a bachelor's degree or higher. Of all the case study tribes, the Potawatomi's recorded the highest percentages in high school graduates and individuals receiving a bachelor's degree or higher for their population 25 years and over in 2000. The percent of their high school graduates was a very high at 86.4% and 27.8% received a bachelor's degree or higher. It is important to note that these findings are not consistent across all tribes. In fact, several instances occurred that tribes without Indian gaming, academically and economically, outperformed tribes with Indian gaming.

Table 4. Differences in Educational Attainment among selected Case Studies, 2000.



Therefore, the question still remains: What can explain the inconsistencies in measuring Indian gaming’s impact on education and why are Native American students, from gaming and non-gaming tribes, still struggling to succeed in education? Evans and Kim (2006) alluded to the fact that Native American students are dropping out of high school at a higher rate and college enrollment has reduced due to the labor market opportunities produced by way of Indian gaming. Of the mechanisms discussed, there is proof of income growth and poverty reduction as indicated in table 1. Gaming revenues are improving educational programs and creating scholarships, but Indian gaming proved to have no impact on education so these mechanisms do not support my hypothesis. However, success in either of these mechanisms should improve educational outcomes. I suspect something, other than money, has a profound impact on Native American student’s determination to succeed in education.

One of the most important sociological case studies revealing the impact of family and community on academic achievement was conducted by Carol J. Ward on Northern Cheyenne high school students in southeastern Montana from 1987 to 1995. Utilizing a combination of qualitative and quantitative methods, the research examines the social and cultural processes affecting drop-out rates and asks the questions: “What are the cultural and social sources of differences in Cheyenne students’ school outcomes? How do individual and family characteristics, school contexts, and school experiences affect students’ educational performance and completion?” (Ward, 2005:10). The results of the study may provide the dynamics that may help explain educational attainment among gaming and non-gaming tribes.

High School drop-out rates are the most common variable used to measure educational attainment. The data set used for my study did not include drop-out rates among high school students which might have produced better results. Therefore, I selected the population 16 to 19 years old not enrolled in school and not a high school graduate as my education variable. The decision for students to either stay enrolled or drop-out of school can involve several reasons. These reasons can range from financial stability to substance abuse, but more importantly they provide researchers the opportunity to explore these interactions and their results may provide key strategies in keeping Native American students in school.

Three different high schools were included in the study; St. Labre Catholic Mission School, Colstrip Public School, and Busby Tribal School. St. Labre Catholic Mission School and Busby Tribal School educated only Indian students with 36% and 24% attendance, respectively. Colstrip Public School had the highest percentage of

Indian students attending at 40% and educates all racial identities. The results show that “Indian students had a higher drop-out rate than White students, and the drop-out rate for students at the three high schools, based on the total population, was 40% for Indian students, compared to 8% for White students” (Ward, 2005:111). The type of school attended by Indian students also affected school performance. In fact, “students attending the two Indian schools had higher performance levels compared to Indian students attending the public, non-Indian school” (Ward, 2005:148).

The author expanded by examining the effects of race, family and community on education and found these variables only to be significant among the two Indian schools. The familiar setting produced by the two Indian schools positively influenced Indian parents to actively engage in their child’s education. Colstrip Public School, on the other hand, “revealed a negative social bias against Indian students” and parents often had limited resources to help their children succeed and more importantly, prevent them from dropping out.

“These results suggest that individual attributes related to community and reservation associations affect the schooling of Indian students. Parents and children are located within community and reservation contexts that define the meaning of schooling for their children” (Ward, 2005:209). In other words, in order for Indian students to be successful in education, the context of their schooling should match the context of their community and reservation. In this case, school and community “contextual elements are important to the explanation of the lower dropout rate of Indian students attending Colstrip Public School compared to the Indian schools” (Ward, 2005:221). Therefore,

the contextual composition of the Northern Cheyenne high school student's community and reservation had an impact on their education.

The research design of Ward's study resembled my study in several ways. We both measured the effects of family and school experiences on Native American student's academic achievement as measured in drop-out rates and enrollment. There is agreement that as social conditions improve, so should educational outcomes. However, given what Ward's study has done and what my study has shown (although similar in design) there remains an open question. Thus, more research is needed to answer these questions regarding Native American education.

CHAPTER 6

DISCUSSION

The New Buffalo, as many Native Americans have termed the casino, has harvested unforeseeable benefits and rewards to the tribes that are successful with Indian gaming. Due to their sovereignty, tribes with Indian gaming legally manage the structure of their casinos. “For Native Americans, tribal sovereignty is inherent and existed long before the arrival of the Europeans. Sovereignty is generally defined as the freedom from external control or authority and the source of tribal sovereignty is, and continues to be, the tribes themselves” (Peroff, 2000:148). The ability to express their sovereignty through the development of gaming has provided additional economic support. And with this economic boost, “tribal governments are now building health clinics, elderly and child care centers, cultural centers, and most importantly – they are building schools” (NIGA Annual Report, 2005:7).

Indian gaming is also contributing to the economic stability of our country. NIGA 2005 annual report “revealed that in 2004 Indian gaming was responsible for creating 553,000 jobs nationwide. Seventy-five percent of those jobs were found to be held by non-Native people. Indian gaming also generated \$18.5 billion in gross revenues while federal tax revenues increased by \$5.5 billion. The federal government also saved an additional \$1.4 billion in reduced welfare payments and unemployment benefits.”

The purpose of this study was to test the effects of Indian gaming on education and if a relationship did exist, to unpack the economic mechanisms influencing this connection. By mechanisms, I mean the manner in which Indian gaming could affect education. One method involves the amount of contributions supplied through Indian

gaming to improve educational programs including scholarships. It is a challenge in of itself to obtain reliable data on the revenues produced by way of Indian gaming. Even more difficult, is determining what percentages are used on education. The estimates for educational spending, provided by gaming revenues, in 1998 were 10.5 percent and increased to 20 percent in 2007 according to Stein (1988) and Stevens (2007). The impact of gaming revenues on increasing median household and per capita income, as indicated in Table 1, could provide a child's family with more income and wealth, thereby providing more educational opportunities.

However, according to my analysis, Indian gaming does not have a direct impact on education as measured by the percent of the population 16 to 19 years old not enrolled in school and not a high school graduate. My findings did indicate that education, as measured by the population 16 to 19 years old not enrolled in school and not a high school graduate, was impacted by the status of the household (couple and female headed), families living below the poverty line, household per capita income, and the population 16 years and older who are employed.

Many studies support the fact that a large portion of the Native American population have consistently lived at or below the poverty line. I trust that a tribe's commitment to end poverty has a considerable amount of influence on their decision to introduce gaming into their way of life. Table 1 did provide evidence that the percentage of families living below the poverty line is decreasing and median/per capita household incomes are increasing for all 205 Native American tribes studied between 1990 and 2000 and even more so for the tribes that have Indian gaming establishments.

There is a possibility that due to the limitations of the gaming measurement as determined by the approval of tribal gaming ordinances by the National Indian Gaming Commission, the link between Indian gaming and education was falsified. Therefore, my case study research is presented to provide some evidence in support of this missing link. Due to the Lumbee tribe not having federal recognition, they along with the Navajo nation did not have any form of Indian gaming establishments between 1990 and 2000. In 2000, the Lumbee and Navajo tribes recorded the highest percentage of their population 16 to 19 years old not enrolled in school and not a high school graduate and lowest percentages of their population 25 years and over that are high school graduates or have received their bachelor's degree or higher of the five tribes studied.

The Paiute and Potawatomi tribes, on the other hand, recorded significantly lower percentages of their population 16 to 19 years old not enrolled in school and not a high school graduate and much higher percentages in high school graduation and bachelor degree attainment for their population 25 years and over in 2000. Both of these tribes have successful gaming operations. The Mescalero Apache tribe also has gaming, but their operations are not as profitable as the Paiute and Potawatomi tribes. Their averages in school enrollment, high school graduates, and bachelor degree attainment fall right in the middle of the previously mentioned control groups. Therefore, the case studies did provide some evidence that supports the connection between Indian gaming and education, yet, inconsistencies remain between gaming and non-gaming tribes.

The compelling study by Carol J. Ward offered an alternative approach to explain Native American's struggle with education. Her study supported the fact that there are other social forces shaping education, especially amongst the Northern Cheyenne Indian

students in Montana. According to her model, improving education for Native Americans is more complex than the idea that gaming generated revenues can increase educational attainment. Examining drop-out rates, the study shows that Indian student's drop-out of high school at a more significant rate than White students, 40% compared to 8% and Indian students attending Indian schools had higher performance levels than the Indian students attending the public school. More importantly, the contextual elements of their community and reservation did not match the context of the public school which helped explain the high drop-out rates.

In addition to Ward, Roberto Ibarra's *Beyond Affirmative Action* (2001) examines the cultural context of minorities in higher education. Unlike any other place, the United States is rich in diversity – a place where you can experience many cultures. Educational institutions are continually struggling to provide a curriculum that meets and satisfies this multitude of interests and cultures. In examining cultural contexts, Ibarra suggests reframing curriculum to offer a broader scope for multi-contextual students such as minorities. Higher education focuses on standardized testing and funding, both of which might present obstacles for many minority students. Such barriers can be avoided if the academic culture changed to meet today's complex set of cultures and accepted alternate approaches to teaching and learning. History shows, according to the following excerpts, these ideas have been addressed but never fulfilled.

The 1928 Meriam survey team “recommended that the federal government institute more relevant curriculum that recognized the cultural and language variances of Indian children” (Whiteman, 1986:29) and the 1966 Coleman Report stated “schools in different school districts differ in their relation to the various racial and ethnic groups.

And, the average white student's achievement seems to be less affected by the strengths and weaknesses of his school's facilities, curriculum, and teachers than is the average minority student's" (Coombs, 1970:9). More recently, Title VII of the No Child Left Behind Act proclaims that the government will work with Indian tribes, educational agencies, and other entities *toward the goal of ensuring that programs that serve Indian children are of the highest quality and provide for not only the basic elementary and secondary educational needs, but also the unique educational and culturally related academic needs of these children* (U.S. Department of Education). Again, there is a need to look into alternative methods in educating Native American students and valuing the contextual elements in which they live. Like many others, I favor an alternative approach to educating minority students, especially Native Americans. An approach that will incorporate the importance of culture and context into the curriculum and bring out the best *all* students have to offer.

I anticipate that my research will contribute to future studies that analyze the impact of Indian gaming on education. Due to the lack of data and detailed observations of Indian gaming establishments, additional information is needed to clear up any bias associated with the measure of gaming such as the actual year Native American tribes starting Indian gaming operations whether approved by the National Indian Gaming Commission or not. And, to improve the measure of education by testing the population that would have directly been impacted by Indian gaming during their academic years. Although my hypothesis was falsified by the data, the importance in conducting this research has left me satisfied and I am proud to contribute to the sociological efforts in this field of study. The social conditions of Native American's are often difficult to

understand and the variables are not always clear-cut, but this field of study is intriguing and the potential for further research is vast. Problems will arise due to the challenges and issues dealing with the unique circumstances of educating Native American youth and locating reliable data to conduct such studies. However, due to the inconsistencies between the various studies, including my own, describing the different variables impacting education – there is still a question to be answered. Is education impacted more by contextual elements, gaming revenues, or size and location of the tribe?

Nearly every tribe in the United States now has some form of Indian gaming and their future in education remains uncertain. It is important that both social scientists and educational practitioners acknowledge the circumstances unique to educating Native American children and help to find “a place in today’s world which is satisfying to them while ensuring their right of self-determination and the dignity and preservation of Indian culture” (Coombs, 1970:41). Whatever the future holds – it is the tribe’s ultimate responsibility to look after their people and make certain they are being properly educated in a familiar context to solidify their place in history. I believe it is tribal sovereignty that provides the ability for tribes to self govern and develop Indian gaming that will ultimately break the ties with the federal government and may offer an alternative to poverty and inadequate education among Native American tribes.

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