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**Rez-onomics: A Cross Comparative Analysis of
Tribal Economic Performance**

by Mary Matilda Lindeblad-Fry

Reed College
May 2013

JOSEPH A. MYERS

CENTER FOR RESEARCH ON
NATIVE AMERICAN ISSUES



Institute for the
Study of
Societal Issues

Rez-onomics: A Cross Comparative Analysis of Tribal Economic Performance

Mary Matilda Lindeblad-Fry

May 2013

Table of Contents

Introduction	1
Chapter One: Context, Literature Review and Theory	3
Context	3
Literature Review.....	9
Theory	12
Dependency and Modernization	13
The Impact of Gaming on Dependency.....	16
Dependency Hypotheses.....	19
Social Cohesion.....	21
Social Cohesion Hypotheses.....	22
Governance	23
Internal Governmental Structure.....	24
Tribal-State Relations	27
Governance Hypotheses	30
Defining Economic Development.....	32
The Impact of Culture	33
Chapter Two: Data and Methods.....	37
Data Set	37
Method of Analysis	37
Variables.....	38
Dependent Variables	38
Independent Variables	39
Control Model.....	39
Dependency Model.....	40
Social Cohesion Model.....	41

Governance Model.....	41
Chapter Three: Results and Discussion	43
Regression Results.....	47
Poverty Rate Regression Results and Discussion.....	47
Control Model.....	47
Dependency Model	50
Cohesion Model	51
Governance Model.....	53
Unemployment Rate Regression Results and Discussion.....	55
Control Model.....	55
Dependency Model	56
Cohesion Model	57
Governance model	58
Measuring Strength of Effects.....	59
Poverty Rate Standardized Coefficients.....	59
Unemployment Standardized Coefficients.....	60
Conclusion	61
Figures	65
Bibliography.....	67

List of Tables

Table 1. Descriptive Statistics for Poverty rate and Unemployment rate.....	38
Table 2. Means, Standard Deviations and Predicted Impact of Independent Variables for Control, Dependency, Social Cohesion and Governance models	43
Table 3a. AIAs with top ten lowest poverty rates.....	44
Table 3b. AIAs with top ten highest poverty rates	44
Table 3c. AIAs with top ten lowest unemployment rates	46
Table 3d. AIAs with top ten highest unemployment rates.....	46
Table 4a. OLS Regression of Poverty rate with Unstandardized Coefficients and Standard Errors for Population Size 100+ (restricted to cases without missing data)	48
Table 4b. OLS Regression of Unemployment rate with Unstandardized Coefficients and Standard Errors for Population Size 100+ (restricted to cases without missing data)	54
Table 5. Standardized Coefficients for Poverty rate and Unemployment Rate	60

Abstract

In this thesis, I will assess the various factors that are believed to have a significant impact on economic conditions on American Indian reservations. Drawing upon literature related to the lingering effects of colonialism, social fragmentation and ineffective government institutions experienced by American Indian tribes and Native Alaskan villages, this study hypothesizes that the rate of poverty and the rate of unemployment on designated American Indian Areas (AIAs) is directly related to measures of dependency on the federal government, social cohesion on the reservation, and strength of governance institutions. In order to test these predictions I have analyzed a data set containing information on 352 American Indian tribes and Alaskan Native villages in the United States. I will measure these factors with the use of ordinary least squares regression (OLS) techniques. I am interested in answering the general questions: What are the factors and conditions that contribute to economic prosperity on reservations? Exactly why are some tribes economically prosperous, while other tribes struggle? In order to answer these questions, I examine a set of frameworks relating to measures of dependency on the federal government, social cohesion, and strength of governance.

Introduction

At present time, there are 566 federally recognized Indian tribes and Alaskan villages in the United States. Article 1, Section 8 of the United States constitution provides American Indian Nations with federal recognition. Article VIII, Section 8, Clause 3 of the constitution decrees: “The Congress shall have Power to regulate Commerce with foreign Nations, and among the several States, *and with the Indian tribes...*” The United States Constitution recognizes and establishes the sovereignty of American Indian tribes (Smith 2000:33). While the treatment of American Indian tribes by the federal government would be aptly characterized as schizophrenic due to the incredible inconsistency in era after era, the paternalistic relationship between American Indian nations and the United States Government effectively undermines and influences all attempts on behalf of Indian tribes to enhance autonomy, preserve their culture and improve their quality of life.

Alaskan Native groups, while having endured a similar historical treatment to American Indians, are recognized differently as a result of the Alaska Native Claims Settlement Act (ANSCA). The Alaska Native Claims Settlement Act of 1971 eliminated Alaskan Natives’ claims to land, so that the federal government could sell rights to the land for the purpose of mineral and coal-mining. This was in exchange for a percentage of revenue from oil-sharing and a multimillion dollar settlement that was provided to Alaskan Native villages and regional corporations (United States Fish and Wildlife, 2005). This means that Alaskan Natives are tied to local villages, rather than reservations, and not provided with the same sovereign status as American Indians. The ANSCA is the result of a joint effort between government and tribal officials, and while often criticized by Alaskan Natives as a decision made by elites without input from other community members, it is also often lauded due to the generous compensation provided by the United States government in exchange for land rights (Henson 2007:38).

However, Alaskan Natives suffer many of the same problems on Indian reservations, including exceedingly high rates of unemployment and poverty. Alaskan Native groups are often excluded from research studies on reservation development, as a result of their differential status. Because of the dearth of research on Alaskan Natives, I included all Alaskan villages in my analysis. However, as a result of the general lack of research on development within Alaskan Native groups, most of the literature I have included concerns American Indian reservation development.

Economic development among Native American tribes is often treated primarily as a problem stemming from lack of resources. The inclusion of a theoretical framework that addresses social, cultural and governmental factors goes further to provide answers about how to increase tribal autonomy and opportunities for economic development. Native Americans living both on reservations and in cities suffer disproportionately high rates of poverty, unemployment, low educational attainment and a lower life expectancy. Poverty and unemployment are serious problems in American Indian tribes and Alaskan Native Areas. However, the unemployment and poverty rates vary a great deal.

This thesis will address the various factors that affect unemployment and poverty rates on American Indian reservations and Alaskan Native Village Statistical Areas. In this thesis, I address the question: Why are some tribes more economically prosperous than others? I will define the degree of economic prosperity as the percentage of unemployed tribal members and the percentage of individuals living at or below the poverty level in 2000. I will analyze a number of factors that have the potential to affect these indicators of economic prosperity. I will use this data to conduct a cross-tribal analysis and interpret the results of my data in light of what has already been discovered about the various factors that influence tribal economic strength.

Chapter One: Context, Literature Review and Theory

Context

The focus of my study is on American Indians and Alaskan Natives. Approximately 4.7 million people in the United States, or about 1.5% of the United States population, self-identifies in the Census as American Indian or Alaska Native. Approximately 1.2 million Native Americans reside on Indian reservations or Alaska Native villages (Cornell and Kalt 2010:1). Although 2.1 million of those who identify themselves as such live outside designated “Indian Areas,” this fact can be misleading; much of the off-reservation population resides either in communities borderline to reservations or routinely migrates back and forth between “home” (the reservation) and “off-rez” (Cornell and Kalt 2010:1). Reservations range enormously in both population and geographic size. For instance, the Navajo reservation has a resident citizenry of more than 175,000 citizens and a land base the size of France, whereas many California rancherias have small populations of less than a dozen and consist of less than 100 acres (Cornell and Kalt 2010:2). Including the land holdings of Alaska Native corporations and villages, the total area under American Indian and Alaska Native control is approximately 10 million acres. This represents about 4% of the land area of the United States (Cornell and Kalt 2010:2). Diversity across Indian territories also includes terrain and type of economy. Many reservations are very rural and isolated, while others are located within major cities. Of course, geographic setting heavily influences the type of economic system, which can range from a manufacturing economy, like that of the Mississippi Choctaw, to the retail trade economy of the Tulalip tribe (Cornell and Kalt 2010:6).

American Indians and Alaska Natives have historically experienced notably higher rates of poverty, unemployment, and various social pathologies. In this section, I present general statistics on the present state of American Indians and Alaskan Natives from the 2000 Census Report. The Census Report provides basic statistical information

such as the rate of employment, poverty, income and household information for American Indians and Alaskan Natives in the United States.

The employment rate for American Indian and Alaska Native men was 66%, which was lower than that of all men over the age of 16 at 71%. The rate of employment for American Indian and Alaska Native women was 57%, while the total rate of employment for women was 58% (Census Bureau 2006:9). Regarding representation in occupation sectors, American Indians and Alaskan Natives were employed in service, construction, extraction, and maintenance, production, transportation, farming, fishing and forestry at higher rates than the general population. Lower proportions were employed in management, professional, sales and office jobs (Census Bureau 2006:10)

The median earnings of American Indians and Alaska Native men (\$28,900) and women (\$22,800) who worked full-time year-round were substantially below those of all men (\$37,100) and women (\$27,200) in the United States for the year 2000. The median earnings of Alaska native men and women were higher than those of American Indians. (Census Bureau 2006:11). In general, a higher percentage of American Indians and Alaska Natives than the total U.S. population live in poverty. Alaskan Natives had a lower percentage of poverty than 26% of American Indians (Census Bureau 2006:12). 56% of American Indian and Alaska Native householders were homeowners, compared to 66% of total householders (Census Bureau 2006:13)

The percentages of adults with at least a bachelor's degree among American Indians and Alaska natives living outside tribal areas was 13%, higher than 12% for those living inside American Indian Statistical Areas (Census Bureau 2006:17). Additionally, 21% of households on American Indian reservations lack plumbing and almost 20% lack a functioning kitchen (American Indian and Alaska Native 2000 SF1 data).

The conditions on several specific reservations highlight the implications of this statistical information. For example, the Pine Ridge Reservation covers the poorest census tract in the United States, with a per capita income equal to only about $\frac{1}{4}$ of the national average (Cornell and Kalt 2000:445). As of 1989, 73% of the employable workforce was unemployed. Over 80% of the employed workforce is in the governmental sector (Cornell and Kalt 2000:444). The reservation is one of the largest in the United States, covering 2.8 million acres in South Dakota.

Conversely, consider the vastly different situation of the White Mountain Apache tribe. The White Mountain Apache, a tribe of approximately 10,000, occupies 1.6 million acres in Arizona. The tribe operates nine tribally owned enterprises. Official unemployment among the White Mountain Apaches is 11%, compared with the national average for reservation Indians of 45% (Cornell and Kalt 2000:446).

The Crow Indian Tribe in south-central Montana is characterized by particularly acute poverty. At the time of the 1990 census, 55% of Crow tribal members were receiving public assistance, and 60% reported being unemployed for more than 15 weeks in the previous year. This is in spite of the tribe being one of the four or five largest owners of coal resources in the world, and also containing extensive timber, range, agricultural, water and mineral resources (Cornell and Kalt 2000:445).

In aggregate, American Indian reservations are notable for extreme poverty. However, the tribes differ wildly in regards to resource acquisition and general economic progress. The extensive resource base of the Crow Tribe also does not seem to have a significant impact. Tribal members struggle with numerous social pathologies, such as alcoholism, crime and ill health (Cornell and Kalt 2000:445). These problems persist in spite of the overall revenue from natural resources totaling \$26,820,779,087, indicating tribal wealth (excluding individual holdings), of approximately \$3,283,239 per person (Cornell and Kalt 2000:445).

What explains these differences? Expected causes of differential economic success for tribes are not always causally linked. The impoverished Crow tribe has a high school graduation rate of 52% for adult tribal members, compared to the more economically successful White Mountain Apache, which has a high school graduation rate of only 34% (Cornell and Kalt 2000:446).

These cases demonstrate how tribal resources can go untapped unless that tribe can establish an institutional structure environment that effectively channels these resources (Cornell and Kalt 2000:445). How can the Crow Tribe technically be one of the wealthiest groups in America, yet be a place of stark poverty? How is it that tribes with producing mineral leases (coal, gas, uranium, and oil) and other tribes with significant natural resources, experience such extreme poverty? In this section and in the following section I will outline some of the historical factors and set the foundation for my research

question, which involves exploring the governmental and social structures that I believe impact development.

Research has shown that indigenous people in America have always engaged in strategies of economic development. Native Americans had extensive and vibrant economic systems of production and trade during the centuries of pre-Columbus contact (Smith 2000:23). For example, there existed an extensive trading network in the Hopewell culture that linked people with different languages in order to avoid subsistence problems due to local crop or harvest failures...this vast trading network likely forestalled famine (Thomas 1994). Pre-contact societies engaged in extensive resource management, such as controlled fires, subsistence hunting and the construction of aqueduct systems (Smith 2000:23-28). The distribution of agriculturally productive corn, which is a man-made crop, demonstrates the use of complex horticultural techniques among pre-contact indigenous peoples (Smith 2000:30). Clearly, “pre-contact Native American societies were not primitive subsistence hunting and gathering societies living in simple, naïve harmony with the environment...these societies managed vast resources within an environmental framework of sustainable development” (Smith 2000:31).

While contemporary federal Indian policy has endured many different manifestations, the underlying basis of the relationship between tribes and the federal government is defined by the concept of ‘trust responsibility.’ This concept was introduced when the Supreme Court denied the Cherokees’ claim to foreign nation status, designating them as “domestic dependent nations” and subsequently cementing the relationship as one of wardship rather than government-to-government (Companion 2003:95). Despite the many changes and opportunities now granted to American Indian tribes, this relationship still influences the federal government’s treatment of American Indian tribes today.

The historical beliefs underlying these policies are rooted in Judeo-Christian beliefs that humankind has governance over the Earth (Norgaard 1988). Economic progress within western culture is based on the goals of “recognition of sovereignty and resource acquisition.” These policies cause significant conflict for Indian tribes because the federal government acknowledges Indian Nations as sovereign entities while simultaneously attempting to acquire all available resources for “use and employment in

the economy of the United States,” as is the doctrine of Manifest Destiny (Smith 2000:39). Therefore, contemporary federal Indian policy has simultaneously reinforced the basis of tribal sovereignty while undermining tribal access to political and economic resources.

Scholars have varying opinions regarding how to characterize federal Indian policy of the 20th century. According to some scholars, despite the outward appearance of furthering self-determination and strengthening tribal governments, the undercurrent running through the policy and case law of the twentieth century is still assimilation (Companion 2003:111). The Indian Reorganization Act of 1928 ended the era of termination and provided both a political foundation and physical territory, which is crucial for the continued existence of tribal governments. However, the Act also forced tribes into an assimilative model and reinforces the status of tribes as a ‘domestic dependent nation’ under the federal government (Companion 2003:95).

The 1960s through the 1970s was a period of political mobilization and an era of self-determination, in which federal policies served to increase rather than impede tribal autonomy. Under the present policy of self-determination, which resulted from the passage of the Indian Self-Determination and Education Assistance Act of 1975, tribes “are subject to federal law, but operate under their own constitutions, administer their own judicial systems, and implement self-managed tax and regulatory regimes....tribes in the current era of self-determination expect and demand government-to-government relations” (Cornell and Kalt 2010:3). The jurisdictional powers of tribes are quite parallel with those of the fifty U.S. states (Cornell and Kalt 2010:3). Governmental policies had the goal of recognizing the Indian nations as self-governing and sovereign. Unfortunately these policies conflict with the overriding policy goal of resource acquisition. As a result, these policies “produced results that fell well short of their aim” (Smith 2000:40).

Despite their imperfections, there is proof that these policies are effective in improving economic conditions on many reservations. The per capita income of American Indians on reservations has been growing approximately three times more rapidly than the United States as a whole since the early 1990s (Cornell and Kalt 2010:8). Housing is improving, education attainment through high school is approaching par with the U.S. average, health measures such as infant mortality, deaths due to accident, and

infectious disease rates show sharp trends toward improvement (Cornell and Kalt 2010:9). However, it is unlikely that the infusion of resources from the federal government is responsible, since federal spending on Indian affairs peaked in the mid-1970s (Cornell and Kalt 2010:10). Self-determination policies are cited as the primary reason for this notable improvement. Furthermore, it has been found that increased economic performance "is positively correlated with natural measures of *lack* of cultural assimilation, such as rates of Native language use" (Cornell and Kalt 2010:11).

I am examining the impact of this present era of self-determination on economic prosperity, and I hope to determine whether the erosion of the federal stranglehold on tribal sovereignty has led to any improvement in the quality of life for American Indians living on reservations. I chose to limit the scope of my project to evaluating the economic and political dynamics for those living on reservation lands because present models of underdevelopment are inadequate for addressing the unique economic situation of Indian reservations. I wish to avoid the Western industrial bias of these models because they have not been able to adequately explain the vast differences in economic success between these tribes, and instead focus on possible explanations other than those offered by classic neoliberal theory (Duffy1998: 57).

In this thesis, I explore the puzzling question of why some tribes are economically prosperous while other tribes struggle by examining every federally recognized tribal entity in the United States on a number of various measures. I will define 'economically prosperous' in terms of unemployment rate and rate of poverty for each federally-designated American Indian reservation and Alaskan Native village. These measures will serve as my dependent variables. I will examine several frameworks, each examining a distinct theoretical explanation for the vast differences between tribes. I analyze dependency theory, which postulates that colonized groups with greater institutional and financial independence from federal and state governments are likely to be more economically prosperous. I also evaluate the impact of social cohesion, and whether or not strength of social ties has an impact on rate of poverty or unemployment. I use participation in a number of governmental programs as a way to measure internal governmental efficacy. I attempt to evaluate whether or not tribal participation in opportunities to increase governmental autonomy are likely to have an impact.

Literature Review

Companion relates how the relationship of Indians to the federal government changed over time. Beginning with pre-constitutional precedents, she describes how the first formal doctrine concerning the right of possession and the views that “both parties are sovereign, the acquisition of native territories is a governmental matter, not a private matter between individuals, and tribal occupation of territories implies ownership” lay basis for native relations from 16th-18th centuries (Companion 2003:88). It was during this period of treaty making that there was an increasing infringement on tribal autonomy (Companion 2003:91). According to Companion (2003), “it was only when Indians began resisting trading their land that the original legal protections for tribal land became incompatible with white America’s notions of economic and political progress” (92). Subsequent court cases further eroded sovereignty. For instance, due to the ruling of *Johnson v. McIntosh*, Native Americans were not able to sell their land without first obtaining permission from the federal government (Companion 2003:93). It was the Indian Removal Act and the creation of the Bureau of Indian Affairs in 1832 that ultimately solidified the federal policy of assimilation. Subsequently, President Grant’s “peace policy” of 1869 aimed at assimilation tactics by proposing schools, churches, and the like for the remaining Indian population” (Smith 2000:34).

Allotment was a policy of forced assimilation designed to destroy tribes as political units and incorporate individual Native Americans into state systems as farmers (Companion 2003:100). The Dawes Act of 1887 allowed the President to allot tribal lands to individual Native Americans to increase pace of assimilation (Companion 2003:106). During this allotment period, which was from 1887-1934, Indian lands were reduced from 136 million acres to 34 million acres. The remainder was sold as “surplus.” Of the 40 million acres allotted to those eligible, only 17.5 million were in the hands of individual Native Americans (US Congress, Senate 1989, 51) (Smith 2000:36).

While often disputed, many scholars agree that the Indian Reorganization Act of 1928 was overall beneficial to tribes because it ended the period of allotment and gave structure to tribal institutions by providing a ‘blanket’ constitution, that specified a model of government that was designed to interact with and adapt to American ideals

(Companion 2003:114) (Duffy 1998:73). The Act was assimilatory in several ways. The IRA pushed all Indian communities into an “administrative category,” effectively solidifying the relationship with the federal government on the basis of a legal and political construct enforced and maintained by the United States (Companion 2003:114). The constitutions and charters are based on American economic and political institutions (Companion 2003:111) (Cornell and Kalt 2000). The IRA also disregards traditional group affiliation by ignoring bands, clans, and villages (Companion 2003:114). In spite of this, Mohawk (1991) points out that conservative, traditional Indian governmental structures, as well as the ‘modern structure’ of the IRA constitution both have the potential to be successful due to the incredible diversity of tribal social structures (Mohawk 1991: 500). However problematic the IRA was for the stated goal of granting rights to Indian tribes, any benefits provided by the Act’s passing were nearly annihilated in the subsequent era of termination. President Truman, who believed that he was acting in the best interests of Native Americans as he pushed for assimilation, worked to ‘terminate’ a number of Indian nations. From 1954 – 1962, 114 nations, bands, and rancherias were terminated (Companion 2003:115).

Tribal sovereignty was affirmed in the case of *Williams vs Lee*, and the era of self-determination began in 1961 when Stewart Udall commissioned a task force on Indian Affairs (Companion 2003:121). The specific inclusion of Native Americans in general federal legislation broke the Bureau of Indian Affairs stranglehold by including other federal agencies (Companion 2003:121). Agencies created through the War on Poverty treated reservations the same as local governments and counties, but the programs allowed little self-governing power (Companion 2003:121). The move toward policies of tribal self-determination began in the 1960s with the passage of the Economic Opportunity Act of 1964. This act sought to “address poverty by seeking to empower those subject to economic and social deprivation to control their own affairs.” It allowed tribes to bypass the federal bureaucracy by permitting tribes to spend federal money how they see fit (Cornell and Kalt 2010:18).

In the 1970s, the Red Power movement politically mobilized many segments of the American Indian community. Furthermore, the Indian Self-Determination and Educational Assistance Act decreased federal domination over services and increased

Native participation in administering economic and educational programs (Duffy 1998:61). This act provided the means by which tribal governments could contract with the BIA and IHS (Indian Health Services) for funds that would have otherwise been used by the respective federal agencies to provide social services to tribes (Cornell and Kalt 2010:19). The act also gave host to subsequent legislation, such as Public Law 106-260, known as the Tribal Self-Governance Amendments of 2000 (Cornell and Kalt 2010:19). These policies reinforce sovereignty by treating tribal governments as states when carrying out federal policies (Cornell and Kalt 2010:20).

According to Mohawk (1991), the Red Power movement and radical political change served as the catalyst for this current ‘revolution.’ The radical political movements of the 1970s served to spark the “effective transfer of *de facto* control and ownership of American Indian reservations from the federal government and the BIA to the tribes themselves” (Kalt 1987). Accordingly, the deregulation of economic activity on reservations resulted as a consequence of this transfer of control (Mohawk 1991:497). Reactions to the present policy of self-determination are generally favorable, yet some scholars criticize the act as primarily symbolic and lacking substance, since the transfer of control from the BIA to tribes is not specified in the act. The era of self-determination has also been attributed to causing divisions within the American Indian community. Self-determination discourages pan-Indianism by encouraging tribes to focus on themselves, and has subsequently been accused of fracturing the political movement base that had been growing on many reservations (Companion 2003:125). However, this act and general policies related to self-determination have also been described as the United States government finally getting it ‘right’ in the realm of federal Indian policy (Cornell and Kalt 2010).

In the 1980s, the overall political atmosphere was tainted by allegations of governmental waste and mismanagement, which provided for the passage of acts that allowed for greater tribal sovereignty and de-regulation on reservations. In 1988, amendments were made to the Self-Determination Act that allowed for self-governance compacting, which provides tribes with the opportunity to modify governmental programs to their own situations. Congress passed the Indian Gambling Regulatory Act, which brought gaming revenue into reservation economies (Companion 2003:129). It is

this period of increasing economic and political opportunity that I plan to review in the theory section. I will analyze available theories concerning the underlying reasons for economic development on American Indian reservations in terms of three different frameworks, each of which is designed to analyze various explanations for differing degrees of economic success on reservations; dependency on the state and federal government, the impact of tribal social cohesion, and the efficacy of internal governance structures.

Theory

The Supreme Court has determined that tribes exist in a ‘peculiar’ political relationship to the federal government. This peculiarity is rooted in the fact that while tribes are extra-constitutional sovereigns, their inherent autonomy is subject to complete and unilateral eradication by federal act (Wilkins 391:1993). As a result of this tenuous political relationship, Indian tribes have struggled enormously with how to define their relationship to the federal government, assert their autonomy and improve economic conditions on their reservations in the present era. A number of researchers have investigated what they deem to be the necessary components of economic development and the reasons why tribes seem to vary so much in their success. In this section, I have synthesized research addressing the following questions: What is the historical and contemporary relationship of the American Indian tribe to the federal government, and how does this relationship impact tribal economic development? How can international development literature contribute to our understanding of tribal strategies, and what comprises these various strategies? How has gaming impacted both economic development and political opportunity for tribes? Why do some tribes prosper when others struggle?

Dependency and Modernization

I did not address modernization or assimilation theory in my analytical model, however due to its prevalence in the available literature it is important to understand. Modernization theory is based on the implicit assumption that “the newly emerging nations of Africa, Asia and Latin American would follow a linear path towards modern development” (Wilkins 1993:393). Development became prioritized as a national goal, due to the decolonization movement of the immediate post World War II period (Bandeji and Sowers 2010:138). “Development” is aimed at universalizing Western-based development around the world for the purpose of encouraging capitalistic growth (Bandeji and Sowers 2010:138). Modernization relies on the distinction between two ideal-type societies – traditional and modern. Traditional societies are characterized by “subsistence economies; face-to-face social structures; cultural systems that emphasize heredity, devotion and mystery; and a highly personalized political system that is virtually an extension of the joint family” (Wilkins 1993:393). Modern societies are the exact opposite...they are characterized by “industrial economies; complex and impersonal social structures; a culture that emphasizes the values of science, knowledge and achievement; and a highly bureaucratized political system that is legitimized through rational processes, such as elections” (Wilkins 1993:393). The main difference between the societies “lies in the greater control which modern man has over his natural and social environment...control that is based on the expansion of scientific and technological knowledge” (Huntington 1971:145).

Modernization theory considers modernization a “homogenizing” and “irreversible” process (Huntington 1971:147). Until the mid-1960s, modernization theory represented the ‘grand theory’ of social science. Modernization theory predicted that tribal societies would inevitably undergo social and economic innovation by assimilating modern values (Wilkins 1993:395). The surrendering of traditional values and institutions to those of Western society serves as the key mechanism of modernization theory (Wilkins 1993:395). However, it has been found that indigenous cultures and values are actually key for sustaining successful development (Wilkins 1993:396).

The reason for chronic underdevelopment on Indian reservations is often explained by the colonialism paradigm. Scholars generally attribute the condition of dependency as a result of colonial domination, or colonialism. Colonialism traditionally refers to “the establishment of domination over a geographically-external political unit most often inhabited by people of a different race and culture” (Blauner 1969) (Wilkins 1993:400). Accordingly, “the essence of the colonized situation is that a people has been conquered, the functioning of their culture and social structure disrupted and suppressed in some degree, and alien control imposed with such force that resistance is futile” (Wilkins 1993:400).

According to a past assistant solicitor in the Department of the Interior in the 1930s, the BIA was responsible for perpetuating the colonial relationship. The relationship was understood to be the “white man’s burden” to take care of the Indians, since Indians were believed to be “inefficient, dishonest, wasteful, ignorant, selfish, impatient, and generally drunk...” (Cohen 1951). One of my research questions concerns the differences in economic success between tribes who manage their own programs versus tribes who choose to have their programs managed through the BIA.

Colonialism is theorized and interpreted in numerous ways. The colonial experience of American Indians is often compared to that of other colonized peoples. However, scholars have distinguished Indians from third world countries. The general lack of the labor relationship is cited as a prime reason for a differing colonial situation when compared to reserves established for indigenous peoples in Latin American and Africa. Canadian and American Indian land bases were not established to function as labor pools for Euro-American industry, mining or agriculture. Indian labor exploitation never represented a major facet of the internal-colonial structure (Wilkins 1993:402). Also, capitalism is often described as counter to ‘traditional’ American Indian values. Therefore, tribes “could not attain economic success because ‘capitalist development [of the United States] inevitably entails expropriation and exploitation” (Wilkins 1993:402).

Colonial models, while useful for explaining the role of the principle colonial agent, often portrayed as the BIA, are not useful for analyzing dynamics within reservation communities (Wilkins 1993:406). Therefore, I prefer to focus on dependency

models, which could be considered a more focused subset of the colonial models previous described. One of the most utilized and comprehensive definitions of dependency is provided by Theotonio Dos Santos:

By dependency we mean a situation in which the economy of certain countries is conditioned by the development and expansion of another economy to which the former is subjected. The relation of interdependence between two or more economies, and between these and world trade, assume the form of dependence when some countries (the dominant ones) can expand and can be self-sustaining, while other countries (the dependent ones) can do this only as a reflection of that expansion, which can have either a positive or a negative effect on their immediate development (Dos Santos 1970: 231).

Dependency theory, developed in reaction to modernization theory, proposes that the causes of underdevelopment are located *within* a country (Bandeji and Sowers 2010:142). Dependency theorists argue that it is the actions of Western countries who “extracted raw materials, labor, and other inputs from colonial countries” that served to place colonies in a state of dependency (Bandeji and Sowers 2010:142).

The resultant condition of dependency is accounted for and measured in various ways. In order to better understand the dynamics of dependency on the reservation, it is useful to borrow from international development research. International development scholars have found that foreign investment stunts economic development in the long-run (Chase-Dunn 1975:220). For third-world countries, investment dependence has negative effects on economic development (Chase-Dunn 1975:222). The formation of domestic capital for poor countries is hindered by debt dependence (Chase-Dunn 1975:222). Similarly, tribes with health care programs administered by the federal government are more likely to default on their loans with the BIA subsidized loan program, which further reinforces the connection between debt dependence and lack of development (Companion 2003:220).

However, scholars generally attribute dependency not resulting from a singular economic process, but rather from a “complex interchange of environmental, economic, political and cultural influences understandable only within specific histories” (Wilkins 408:1993). The findings of international economic dependence suggest that dependency

theory should be taken seriously as an explanation for stunted development on American Indian reservations. However, dependence of tribes on the federal government functions more insidiously, due to the established trust relationship between tribes and the federal government. Support from the federal government is necessary until all tribes are able to fully develop their own economies.

The dependency model has been expanded upon to account for the poor economic conditions of American Indian tribes. The dependency model is so valuable because it combines both the external aspects of the colonial relation and the more insidious internal dynamics of dependency (Anders 1980:692). Tribal fragmentation, resulting from the barrier between the elite tribal officials who effectively control access to political and economic decision-making and the non-elite members of the community, is cited as a significant reason for underdevelopment. However, this theory is partially negated by the existence of highly effective tribal elites who have led their own tribes in successful economic pursuits (Wilkins 1993:408). Furthermore, dependency theory fails to take cultural factors into account, and is also incapable of describing reservations that *have* experienced positive economic and political development (Wilkins 1993:410).

International development literature provides a framework for understanding how persistent poverty of colonized groups functions as a result of resource dependency. Resource dependency combines internal colonization theory with Weber's "domination by authority" thereby making 'dependent' populations more vulnerable to factors that affect resource levels and various shifts in the balance of power (Kardam 1993:1775). Tribes are desperate to escape dependency. This desperation serves as the catalyst for engaging within the dominant political structure in order to allow for the creation of "economic environments that will allow them to provide for their citizens' well-being without depending on regulatory advantages that are vulnerable to attacks in Congress and state legislatures or on resource extraction" (Henson 2007:10).

The Impact of Gaming on Dependency

There are over 310 gaming operations run by more than 200 tribes. Of these operations, about 220 are "Las Vegas" style casinos (Evans 2002:1). Millions of non-Native Americans, who presumably know little about economic development on Indian

reservations, visit Indian casinos every year and thereby contribute to an enormously important American Indian economic enterprise. With the passage of the Indian Gaming Regulatory Act in 1988, many American Indian tribes introduced gaming on their respective reservations, effectively strengthening their economic authority and power as a sovereign nation, due to the enormous influx of revenue. The introduction of gaming on reservations served as a way for tribes to reduce their dependency on federal and state governments for financial support.

The Indian Gaming Regulatory Act (IGRA) was passed in order to ameliorate the uncertainty that resulted from *Cabazon Band of Mission Indians v. City of Indio*, which provided that “if states allow a particular form of gaming within the state, it has no ability to regulate similar gaming operations on tribal land” (Evans 2002:6). The passage of IGRA spurred many tribes to open casinos shortly after the decision was made. The federal government passed IGRA because state officials and gaming interests wanted to limit tribal casinos. IGRA allows tribes to run gaming operations “only on federally-recognized trust land and under certain conditions” (Evans 2002:6). In this section, I explore the impact of gaming on tribal economic prosperity.

The manner in which tribes choose to spend their gaming revenue has significant economic and social consequences. A large number of tribal leaders fear the unintended negative consequences of dispensing per capita payments to individual tribal members. Specifically, they believe that per capita payments have the potential to encourage citizen dependence on tribal governments, thereby indirectly discouraging educational attainment (Cornell et. al. 2008:71). Dependency on gaming revenues, while superior to dependency on the federal government, is also a precarious basis for revenue not only for individual tribal members but also for the tribe as a whole. There is a danger that tribes will simply transfer dependency from the government onto gaming. This fear has encouraged a number of tribes to invest gaming revenue in diversifying their economies (Cornell et. al. 2008:72). But what is most surprising is that during the first decade after the passage of IGRA, household incomes actually grew more rapidly in Indian areas without gaming (33 percent) than in areas with gaming (24 percent) (Cornell et. al. 2008:7). While gaming may be enormously profitable for some fortunate and well-organized tribes, the current trend underlying the economic development in Indian

country is one of tribes working to create economic environments that will allow them to provide for their citizens' well-being without depending on natural resources or gaming, which is subject to the volatile external political atmosphere (Cornell et. al. 2008:10).

Gaming has also been shown to have a positive impact on the health of the surrounding population (Wolfe et. al. 2012). American Indians who are members of tribes with gaming facilities have better health than those who are members of tribes without gaming (Wolfe et. al. 2012:502). Overall, results suggest that commercial gaming leads to higher income, fewer risky behaviors, better physical health and perhaps increased access to health care” (Wolfe et. al. 2012:520). The findings by Wolfe et. al. (2012) are useful for framing a discussion on the importance of gaming, as it includes not only the impact of gaming on household income but the effect on health as well. The presence of an independent source of revenue for a tribe supports the argument that dependency on the federal government is detrimental also on an individual level. This analysis demonstrates that the specific situation of a given tribe's economy has an impact not only on the autonomy of the tribe and its position in the economy, but also on the health of the individual members.

Not all scholars view the introduction of gaming for tribes as uniformly positive. The presence of gaming has been shown to encourage varying degrees of “social conflict, tribal factionalism, and cultural antagonism” (Gonzales 2003:123). Also, IGRA restricts gaming operations to federally-recognized trust land and requires tribes to negotiate with the state about the size of the gaming facility, types of games, etcetera (Gonzales 2003:127). IGRA also mandates how tribes use gaming revenues, which is an example of further erosion of tribal sovereignty (Gonzales 2003: 128).

Further, gaming revenues have served as additional incentive for some tribes to look for ways to eliminate members (Gonzales 2003). For instance, the Saginaw Chippewa is among the 47 gaming tribes that have approved revenue allocation plans allowing for distribution of casino profits to members. Those threatened with expulsion face the loss of \$52,000 a year from the per capita distribution. In this case, gaming development has produced displacement in which the tribe exercises a certain amount of power over who will be “winners” and “losers” (Gonzales 2003:130). This intra-tribal factionalism erodes social cohesion, which is necessary for successful development.

The introduction of gaming on reservations provided an avenue and further incentive for tribes to become politically incorporated within the overall political structure (Witmer et. al. 2007). While the passage of the Indian Gaming Regulatory Act allowed for the establishment of casino-style gaming on federal trust land and greatly increased Indian tribal political participation, the decision of Indian tribes to act as interest groups “may set a dangerous precedent...and may undermine tribes’ status as sovereign nations that are able to exercise sovereign rights” (Witmer et. al. 2007:140). Applying the ‘interest group label’ to tribes could lead to the perception that Indian nations are “just another player in the political process” and could potentially serve to “undermine the distinct treaty-based rights that have helped shape Indian/federal and Indian/state relations” (Witmer et. al. 2007:140). This could also further contribute to the disparagement of Indian nations as “special interest groups” trying to secure for themselves “special rights” rather than assert their pre-existing sovereign status and engage with the federal government on a government-to-government basis (Witmer et. al. 2007:131).

Employment outcomes oftentimes improve on reservations with gaming, but this seems to be significant only for large tribes (Evans and Topoleski 2002). Four or more years after a casino opens, the reservation population increases by 12% and employment by 26% (Evans and Topoleski 2002:25). While all tribal population groups in the analyzed sample show a rise in employment and population, the results are only statistically significant for the two largest population groups (75,000 to 500,000 and more than 500,000). Also, tribes with more than 1250 members who open a casino see a “statistically significant 10 percentage point increase in the employment to population ratio and an equal-sized drop in the unemployment rate,...but not statistically significant drop in the fraction of working poor” (Evans and Topoleski 2002:28). Overall, they find that larger tribes are better equipped to exploit the employment advantages of casinos.

Dependency Hypotheses

I hypothesize that tribes with greater institutional and financial independence from federal and state governments are likelier to have a higher unemployment rate and rate of poverty (see Appendix for list of variables). I assessed the level of dependence on

the federal government with a number of measures. I include the absence of a gaming compact, and therefore the inability to have gaming as a source of reservation revenue. I hypothesize that tribes without gaming compacts will have overall higher rates of unemployment and poverty, due to the absence of gaming as an independent revenue source. I also used the percentage of the population employed by the state, local or federal government relative to other sectors of the economy. Within the dependency framework, we would expect that as percentage of the civilian labor force that is employed by the government increases relative to the other industries, there would be a higher overall rate of poverty and unemployment. This is because the presence of the government as a large employer is reflective of dependence on the state, and a higher percentage of the labor force employed by the government means that there is less individual incentive and ability for tribal members to cultivate financial and institutional independence from the government. According to the dependency hypothesis, a large federal government presence is likely to contribute to suppression of any attempt at strengthening the governmental status of tribes.

I have included the level of tribal health care autonomy as an indicator of dependence. I analyzed the impact of three different types, or 'levels' of health care. Tribes can be grouped into three levels of autonomy, with 'compacting' tribes participating in the self-governance compact with the United States and therefore maintaining the greatest degree of autonomy over their health care system (Companion 2003). Contracting tribes maintain a moderate degree of indigenous control, and operate at least one outpatient clinic through a Title I contract under Public Law 93-638. Tribes with direct service have the lowest level of control. With the 'direct service' model, BIA employees or other federal administrators manage the programs (Henson 2007:127). Compacting shifts the responsibility for managing health care to the tribe and allows the tribe to develop its own health plan. The National Indian Health Board finds that measures of patient satisfaction improve markedly under contracting and compacting relative to federal Indian Health Service management, which is the 'direct service' form of health care. Under self-governance compacting, 86% of programs report that waiting times improved upon tribal assumption of management responsibility (Cornell and Kalt 2010:15). Furthermore, tribes with direct service were not as satisfied with the quality of

their health care than tribes under contracts, and tribes with contracts were not as satisfied as those operating with compacts (Cornell and Kalt 2010:15). I predict that tribes with the compacting form of health care will experience a lower rate of poverty and unemployment than tribes with contracting or direct service, and tribes who participate in the contracting option will experience lower unemployment and poverty rates, but to a lesser extent than compacting tribes.

Social Cohesion

Social cohesion is important for the ‘relative autonomy’ for a state (Evans 1995). Autonomy extends beyond the generic goal of capital accumulation. For Evans (1995), “relative autonomy” concerns the extent of embeddedness of social ties that “bind the state to society and provide institutionalized channels for the continual negotiation and renegotiation of goals and policies” (Evans 1995:59). It is the process of socialization and “quasi-primordial ties” that plays a necessary role in the “internal cohesion of effective bureaucracies” (Evans 1995:71). Thusly, social cohesion and internal governmental effectiveness go hand-in-hand.

However, the existence of strong social cohesion is not always uniformly beneficial. One of the characteristics of economically inadequate ‘predatory states’ is when “personal ties are the only source of cohesion, and individual maximization takes precedence over pursuit of collective goals” (Evans 1995:12). Evans (1995) also notes the problems associated with social ties that develop between state officials. One of the characteristics of a predatory state is when “ties to society are ties to individual incumbents, not connections between constituencies and the state as an organization” (Evans 1995:12). The same situation reflected within a tribe would be if the tribal leaders maintained social ties only with each other. This point also highlights how ‘constituents’ must view the government as legitimate in order for the institutional structure to be effective (Cornell et. al 2000:466). As a result of these kinds of social ties, various tribal leaders may act in ways that may be unfavorable for economic prosperity, such as basing employment and hiring decisions on kinship (Cornell et. al 2000 :451). Therefore, greater indigenous organizational strength reduces sensitivity to external pressures (Companion 2003:69). Specifically, informal structures such as the level of internal cohesion and

social solidarity contribute to the creation of a collective identity and thusly spur collective inclination towards sovereign action (Companion 2003:162).

Geographic isolation has an impact on health care management, and lower levels of health care autonomy are correlated with linguistic isolation and a more restrictive membership blood quantum (Companion 2003). The positive correlation between health care autonomy and blood quantum is possibly due to the fact that tribes committed to cultural survival are also interested in controlling their own destinies (Companion 2003:206). Companion's research shows that percentage of the population that has never lived off the reservation is negatively correlated with health care contracting, which is the highest degree of autonomy possible (2003). A possible explanation is that experience with dominant political structures is likely to increase when individuals move from isolated, insulated environments (Companion 2003:202). Therefore, greater degrees of community cohesion reflect higher levels of autonomy only in some cases.

Social Cohesion Hypotheses

My second set of hypotheses concerns the impact of strong informal structures. I predict that internal cohesion and social solidarity will contribute to lower rates of unemployment and poverty. I measure density of social ties and the formation of a collective identity in several ways (see Appendix for list of variables). I measure geographic and social isolation with the percentage of households that lack telephone access. Many American Indians and Native Alaskans live in very remote areas lacking adequate basic infrastructure (Henson 2007:329). Reservation households located in isolated areas may lack basic living necessities, such as telephone access. I hypothesize that this variable will be positively correlated with the poverty rate and unemployment rate, due to the decreased ability of the reservation population to communicate and build social ties with other members of the community.

I measure the strength of the family unit with the percentage of the total population that is living in households with their own families. My hypothesis is that the increased presence of stable family units is a reflection of kinship cohesion and is an effective predictor of tribal economic sufficiency. I predict that a higher rate of the

reservation population that is living in a household with their family is correlated with a lower rate of unemployment and poverty.

Additionally, vacant housing is reflective of a shrinking community, declining industry, and potentially indicative of mass migration to cities and towns located off the reservation. Therefore, I hypothesize that the homeowner vacancy rate, which is the proportion of the homeowner inventory that is vacant for sale, is positively correlated with the rate of unemployment and the rate of poverty.

Language fluency is an important marker of cultural preservation and shared values. Therefore, I include the percentage of the reservation population over 18 that does not speak English, Spanish, Asian or Indo-European language at home. I have assumed that the alternative language spoken is a Native language in most of these cases. I hypothesize that tribal members who actively seek to retain their Native language are more likely to feel integrated into the community and participate in the community in ways that function to help others. I hypothesize that this indicator of social solidarity in the community will serve as a predictive factor for lower rates of unemployment and poverty.

I also included a measure of ethnic solidarity in my cohesion model. I use the percentage of people who marked their race as either only American Indian/Alaskan Native, or in combination with some other race as an indicator of cohesion in the community to construct this measure. I predict that an ethnically homogenous Native population is more cohesive and therefore invested in enhancing the economic development of the reservation. I hypothesize that the percentage of the American Indian or Alaskan Native population on the reservation is negatively correlated to the rate of unemployment and poverty.

Governance

The success of a tribe's economic development plan relates not only to government structures but also the presence of proper leadership (Mohawk 1991). Leadership, elected or appointed, must be institutionally restrained from rent-seeking (Mohawk 1991:501). However without the institutional structure to prevent self-

interested behavior, opportunistic behavior has the potential to bestow a 'bad' reputation on the tribe, thereby increasing the difficulty of attracting investors (Mohawk 1991:502).

Strong institutional structures are necessary for a state to provide a balance between promoting industrial growth and the welfare of its citizens. International development literature has been criticized for promoting the dissolution of state involvement and instead allowing the so-called "invisible hand" of the free market to control production (Evans 1995). An analysis of the governmental structure of Zaire demonstrates how corrupt leadership, without the force of a strong institutional structure to reign-in rent-seeking behavior, can have the capacity to badly damage an economy. When administrative behavior is not constrained by regulation, natural market relations result in "the ultimate expression of neo-utilitarian rent-seeking" (Evans 1995:46). Bureaucracy is essential for establishing a structure in which state officials have incentive to act on behalf of the interests of the community rather than simply for himself or herself. The economic success of Japan is attributed partially to the presence of a stable bureaucracy. Leaders were rewarded via conformity to institutional rules, rather than exploitation of individual opportunities "presented by the invisible hand" (Evans 1995:49).

External networks are also necessary for connecting the state and civil society. Networks and organizations enhance the legitimacy of the bureaucracy (Evans 1995:59). I intend to demonstrate that Evans' theories about the characteristics that contribute to successfully developing states and predatory states are conceptually useful for analyzing the characteristics of economically successful tribes. Institutions of government are necessary components in determining the potential for successful economic development on American Indian reservations (Cornell 2000:461). The one-size-fits-all tribal constitution, established by the IRA was ill-adapted to the culture and traditions of many tribes and therefore not well-suited for the purpose of establishing efficacious governance (Henson et. al. 2007:4).

Internal Governmental Structure

The chosen form of governmental institution has been shown to have direct economic impact (Cornell and Kalt 2000). Tribal governments that lack strict

constitutional delineations of powers and third-party means of dispute-resolution are less likely to have economic success (Cornell and Kalt 2000). There are numerous examples of tribes with similar opportunity to utilize resources and similar constitutional structures, yet with wildly differing degrees of economic prosperity. Therefore, “formal institutions would be more effective the closer is the match of those institutions to the formal institutions that emanate from cultural norms” (Cornell and Kalt 2000:453). In terms of measuring the strength of different types of structures, strong-chief-executive and strong-legislature tribal governments outperform general council forms of government. Strong-chief-executive governments are associated with approximately 2% more income growth than general council government, whereas strong-legislature governments are associated with 7-10% more growth than general council (Cornell and Kalt 2000:462). Cornell and Kalt find that there is somewhat of a correlation of the positive impact of a judicial branch, within a 70% confidence interval.

International economic development research emphasizes the role of a sovereign entity’s relationship with other autonomous governments. These relationships can serve as a reflection of how the tribe itself is organized. Problems with internal organization and problems of state-society relations are mutually reinforcing (Evans 1995:63). The lack of a bureaucratic structure has a direct effect not only on the ability of the tribe to organize itself well enough to operate within institutional channels, but also to interact with the federal government and participate in the overall political structure. The ability to accomplish objectives through professional and bureaucratic channels is a critical element in turning tribal policy choices into tangible results (Cornell et. al. 1993:20).

International development research corresponds in some ways to tribal development literature on the various strategies that autonomous entities can use to foster development. For instance, “custodian” states embody the role of regulators. These states provide caretaking in the sense of protection and ensuring adherence to rules and fiscal regulations (Evans 1995:79). Tribes must behave in a similar fashion by constructing procedures that define rights and responsibilities of all affected parties as well as maintain financial controls and record systems to prevent abuses, improve performance, increase accountability and “enhance the tribe’s ability to make informed, knowledgeable decisions regarding tribal assets and opportunities” (Cornell and Kalt 1993:19).

Therefore, 'adherence to rules and regulations' is defined as a necessary function of all developing nations by both tribal and international development research. A nation is a 'demiurge' when "the state becomes involved in directly productive activities, not only in ways that complement private investments but also in ways that replace or compete with private producers" (Evans 1995:79). The 'demiurge' role of an economically successful state corresponds closely to the tribal development strategy of managing the development of its own resources (Cornell and Kalt 1993:31).

Both tribes and nation-states must strike the proper balance between regulating production and drawing in entrepreneurs. The state role of a 'midwife,' which is when a state actively assists in the emergence of entrepreneurs rather than substituting itself for private producers, echoes the description of the ideal tribal economic development strategy. The main goal of 'midwifery' is to "induce private capital to play an entrepreneurial role that it would otherwise be reluctant to undertake, thereby creating organizational and institutional resources committed to new kinds of endeavors" (Evans 1995:81). The 'private enterprise with tribal membership ownership' model "envisions a reservation economy consisting primarily of small businesses that are started, owned and operated as private businesses, serving either local or export markets, or both" (Cornell and Kalt 1993:33) The combination of nurturing existing enterprise and encouraging further development is generally a successful strategy.

In order to be successful in economic competition, "reservations generally must be able to offer the opportunity to earn economic returns commensurate with, or better than, the returns people and assets might earn somewhere else" (Cornell and Kalt 1993:20). Actions that serve the purposes of midwifery could mean "erecting a 'greenhouse' of tariffs, import prohibitions and investment restrictions in order to protect intact sectors from external competition" as well as "providing subsidies and incentives" (Evans 1995:80). Tribes must actively work to protect and nurture their investments, in addition to promoting economic growth.

The presence of a strong natural resource base cannot always be depended on as a stable source of revenue. Developmental strategies must be concerned with the conservation of state capacity more than with conserving natural resources (Evans 1995: 71). Tribes generally do not have control over the market for natural resources, and their

market opportunity is usually due to outside forces (Cornell and Kalt 1993:10). The problem of lack of development is more often the relationship between the perception of investment opportunities and whether this translates into actual investments (Evans 1995:31). This reinforces the importance of adequate advertising and communication regarding the opportunities for economic development, in order to nurture the perception of possibility.

While international development literature is helpful for this analysis, it is important to remember that the economic structure of Native American reservations differs from nonreservation economies in a number of ways. Many reservations face exorbitantly high rates of unemployment, and most of the available work involves working for the government in some capacity. This fact, combined with low rates of educational achievement, contributes to the difficulty of economic development (Smith 2000:53). Development plans for tribes are often designed to increase the utilization of drastically underutilized resources available to tribes, which is usually not the primary focus for developing countries (Smith 2000:53).

Therefore, the goal of economic development relates more to the empowerment of the community than simply creating wealth for wealth's sake. Reservation economic development is focused on "creating the conditions for political power in the context of socially responsible choices for the continued existence and cohesion of the Indian nation" (Mohawk 1991:499). In this sense, 'dependency' relates not only to financial independence but also to political autonomy. It is clear that the latter follows from the former.

Tribal-State Relations

The previously mentioned 'trust relationship' has served as adequate justification for the federal government's influence on Indian economic policies. In practice, the "trust" became an avenue for unquestionable federal control and hinders the introduction of capital onto reservations since private, non-Indian investors are fearful and hesitant to enter into an economy fraught with the "red tape" and "bureaucratic nightmares" typically associated with government involvement (Duffy 1998:61). There is also the problem of constant pushback from states against tribal rights. Tribes and states are in

constant conflict, as tribes build economies and governments that shift jurisdiction, tax bases, and program funding away from state governments and onto designated Indian territory (Cornell and Kalt 2010:15).

Social embeddedness is necessary for the purposes of economic autonomy (Evans 1995). The embeddedness of the developmental state refers to “a concrete set of connections that link the state intimately and aggressively to particular social groups with whom the state shares a joint project of transformation” (Evans 1995:59). This also helps explain how some tribes are able to navigate the political structure to their own benefit and how it is necessary for them to be able to build a relationship between tribal leaders and state officials, both within and outside of officially-sanctioned institutional contexts.

As tribes attempt to exercise their inherent sovereignty they often face backlash against assertions that they were trying to gain special rights and privileges, due to the view that tribes function as racial and/or ethnic associations (Steinman 2005:773). ‘Special rights discourse’ is the act of labeling legal claims as “special rights.” This kind of discourse denigrates and stigmatizes such claims by invoking a binary between these rights and “equal rights.” Even lawful and legitimate claims, when cast as special rights, are “construed as affront to cultural and moral norms” (Goldberg-Hiller and Milner 2003). For instance, the Boldt ruling of 1974, which upheld the fishing rights of Washington tribes that had been promised in treaties with the US government, sparked an extreme backlash against the Quinault tribe. However, leader of the Quinault tribe Joe Delacruz was able to successfully advocate for the continual coexistence of the state and tribes by creating mechanisms for stabilizing state-tribal relations (Steinman 2004:101). By advancing a commission on state-tribal relations, Joe Delacruz and other tribal leaders worked with governmental officials to develop a new institutional relationship. This new formalized institutional relationship helped to shift the discourse around the issue and provided an avenue for the Quinault tribe to implement the term ‘government-to-government’ to specify more clearly the nature of intergovernmental relations they sought (Steinman 2005:777). Joe Delacruz and other Indian leaders successfully convinced political officials, and in turn these officials convinced the fisheries to accept the government-to-government relationship (Steinman 2005:780). These cooperative efforts eventually resulted in the creation of the Centennial Accord, in which the state of

Washington and 25 Washington tribes mutually recognized the sovereignty of the other parties and established procedures for government-to-government relations (Steinman 2005:780). The example of the Quinault tribe highlights how tribes were able to deepen embeddedness by securing the trust of state actors while simultaneously asserting sovereignty, thereby causing realignment in the status quo.

Opportunities for expansion into the gaming realm allowed tribes to increase their participation in the political structure (Witmer et. al. 2007). The Indian Gaming Regulatory Act altered how American Indians participate in the political process (Witmer et. al. 2007:128). The increase in resources available to many Indian nations reduced resource constraints, thereby enhancing the ability of tribes to pursue interest group strategies (Witmer 2007:131). As a result of their status as “pre-existing sovereign nations with functioning tribal governments,” Indian nations may find it easier than other minority groups to engage in activities common to organized interest groups (Witmer 2007:128). American Indian nations are uniquely structured to behave as interest groups and engage in ‘interest group activities’ such as direct lobbying and contributing to political campaigns (Witmer 2007:129).

Previous to the passage of IGRA, political access was usually only possible through various pan-tribal organizations, due to a lack of resources for the vast majority of tribes. However, involvement in these organizations was usually inadequate for the purposes of achieving policy objectives. Like all large organizations, these groups suffer from free-riding, inter-organization conflict and disconnect between leaders and group members (Witmer 2007:130). IGRA is characterized as a compromise solution between Indian sovereign rights and states’ rights (Witmer 2007: 131). The passage of IGRA was monumentally important for the era of self-determination;

“the passage of IGRA changed the nature of federalism in this country: it marked a shift from predominantly federal/Congressional oversight of Indian affairs and an era of Indian self-determination, to a new era of Forced Federalism in which Indian nations and states were compelled to negotiate compacts on a government-to-government basis for jurisdiction in Indian country” (Witmer 2007:131).

Witmer (2007) cites resource mobilization theory, which is the notion that “organized interests are spurred to action as a result of changes to group resources as well as organizational change and opportunities for collective action” (Witmer 2007:132). American Indian nations engaged in resource mobilization as a consequence of IGRA. IGRA is primarily responsible for providing the impetus for American Indian nations to develop tribes as “linkage institutions” that “provided tribal members with leadership in lobbying governments for gaming policy as well as other policy issues important to tribal members” (Witmer 2007:132). Effective bureaucracy is necessary for developing nations (Evans 1995). Hard money contributions increased dramatically since the passage of IGRA, from a mere \$1750 in 1989-1990 to more than \$4 million by 2002 (Witmer 2007:136). In 1998, tribes spent approximately \$11 million on direct lobbying. Pan-Indian and pan-tribal organizations do not approach that level of involvement (Witmer 2007:139). These findings reveal how American Indian tribes, as a result of vested economic interest in elections, are using their sovereign status to politically incorporate themselves and substantively increase their political participation. These findings complicate previous views that since gaming profits decrease dependency on the state, tribal leaders are likely to be less interested in developing working relations with the state (Steinman 2004:110).

Governance Hypotheses

I predict that there is a positive relationship between efficacious governments and economic prosperity. Tribes that choose to exercise their self-governing power and work to expand their jurisdiction are likely to be more economically prosperous than tribes that lack the same effective governmental structure.

Community Action Programs (CAP) are a federally-funded program under the Office of Equal Opportunity that provide tribes with an opportunity to develop and manage their own programs for the first time (Companion 2003:151). These grants brought money onto the reservations and opened up political avenues between Indian nations and the federal government that were not mediated by the BIA (Companion 2003:152). I included information regarding those who applied for grants in the earlier period, in the years when they first became available, in order to determine whether

earlier tribal participation in this program is indicative of an increased likelihood to take advantages of opportunities for enhanced autonomy. I hypothesize that the tribes who took advantage of these grants in the earlier period, from 7/1/1964 - 6/30/1971, are likely to have lower unemployment and poverty rates.

I also include a measure for participation in Public Law 102-477 (the Indian Employment, Training, and Related Services Demonstration Act of 1992). This legislation allows federally-recognized tribes and Alaska Native entities to consolidate formula-funded federal grants funds, which are employment and training-related into a single plan. I hypothesize that participation in this program is directly related to lower rates of unemployment and poverty, due to the greater freedom in allocation of funds that the plan provides. This is because tribes are allowed to use the funding to meet their needs more directly.

I include constitution type as a measure. Specifically I wish to see whether the tribes that did not agree to adopt the constitution and/or charter established by the Indian Reorganization Act of 1934 are likely to be more economically prosperous. In addition to the previously mentioned problems with IRA-based constitutions, another significant problem is that they include no explicit method of dispute resolution and no separation of powers (Henson 2007:19). Even though the passage of the IRA granted official status to Indian nations, they “commonly proved to be ineffective forms of government” (Henson 2007:19). As a result, many tribes chose to opt out and instead devised their own constitution (Henson 2007:19). This also includes tribes that became federally recognized after the passage of the IRA. I hypothesize that the absence of an IRA constitution would signify a tribe that has a greater capacity for economic self-sufficiency, and is therefore correlated with a lower rate of poverty and a lower rate of unemployment.

An independent judiciary serves as a constitutional ‘check’ that keeps tribal politicians from using their position for personal gain (Cornell and Kalt 2000:22). I included a measure for the presence of a tribal court system for the tribe. I predict that the presence of a judicial branch fits within the framework of a strong internal governmental structure and is therefore likely to serve as a predictor of lower rates of unemployment and poverty. An independent judiciary that is “empowered to render impartial judgments

in cases involving conflict between the tribal council and others” is cited as important for successful economic development (Mohawk 1991:501).

Defining Economic Development

The term ‘economic development’ has been considered and measured differently among the disciplines and always in relation to whatever is being studied. Economic development is typically defined as “the growth in the total economic activity and output of a society” (Huntington 1971:151). I believe this measure is inappropriate for my analysis. Despite the fact that information of this nature is not available on a wide-enough scale to encompass all, or even most American Indian nations, this measurement makes the mistaken assumption that profit maximization is the end goal. This is simply not the case for many American Indian tribes or Alaskan Native villages.

Tribes are in the unique position of having to maintain cultural integrity while simultaneously engaging in successful economic development activities. Since tribes have to negotiate this balance, tribal ‘goals’ are different than those of developing countries. The goal is to improve the lives of individuals for the overarching goal of improving the health of the community, in keeping with the cultural values of the tribe (Smith 2000:11). For this reason, the measures of individual welfare I have decided to use for my analysis are the rate of poverty and the rate of unemployment. Taking into consideration the goals of sovereign indigenous groups, I believe these are superior measures of development compared to more ‘traditional’ measures.

When we consider that the goal of most American Indian nations relates more to the welfare of individual citizens rather than becoming a better competitor in the global economy, these measures make more sense, yet still relate directly to the political and economic sovereignty of Indian nations. “Low wages and unemployment results in low income, lack of property, savings, food reserves in the home and a chronic shortage of cash. All of these factors decrease the possibility of effective participation in the larger economic system” (Lewis 1968:111). President John Yellow Bird Steele (1992) of the Oglala Sioux Tribe on the Pine Ridge reservation succinctly sums up this idea:

Individual income is important in terms of its social importance. When poverty levels are extreme, tribal members focus on surviving day-to-day...this makes the only purpose of having a job is to get a paycheck (Smith 2000:71).

Adam Smith (1776) himself contended, “developing the economy by utilizing and developing the available resources is the method by which any society develops and maintains its culture ...the term ‘consumption’ includes not only tangible goods and services but also the time necessary to participate in cultural activities and leisure” (Smith 2000:16).

The meaning of self-determination is encapsulated by examples of tribes that are able to live in traditional ways *and* maintain that lifestyle, and are understood as making rational decisions concerning their resources (Smith 2000:14). However, other tribes may have different goals. Some tribes wish to develop their economies as a means toward the end of self-determination (Smith 2000:14). For example, Marilyn Enfield of Apache Tribe Aerospace, describes her job as “profit driven, but balanced with Apache values”(Smith 2000:14). The process by which the consideration of cultural values occurs is the direct result of improvement in the welfare and standard of living on the reservation. As average incomes increase, the tribe itself becomes less dependent on federal aid, and this leads to self-determination (Smith 2000:14). Therefore, the notion of economic progress needs reformulating away from the ideal of assimilating into an industrial capitalist economy, and towards a Native American ideal (Smith 2000:17-18).

The Impact of Culture

While I lack an adequate measure of culture in my analysis, I wanted to present the available theory about the impact of culture on development. Culture is a “way of living developed and transmitted by a group of people to subsequent generations” (Harris and Moran 1991). The components of culture include “artifacts, beliefs, ethics, moral and other values, and underlying assumptions that allow people to make sense of themselves and their environment” (Smith 2000:16). Cultural integrity implies maintaining the shared property of a society considered essential for identification as a member of that

culture (Smith 2000:16). As mentioned previously, some scholars attribute stunted development in both rural and urban slums to what they deem a ‘culture of poverty.’ The crux of the argument is that people who live in a community where poverty is pervasive share a culture distinct from mainstream consciousness, that their values, behaviors, and views on society differ from the non-poor (Lewis 1968:110). The culture of poverty is “both an adaptation and a reaction of the poor to their marginal position in a class-stratified, highly individuated, capitalistic society...many of the traits of the culture of poverty can be viewed as attempts at local solutions for problems not met by existing institutions and agencies” (Lewis 1968:112). Colonialism and the culture of poverty reinforce each other; the culture of poverty is believed to result from imperial conquest, in which the destruction of the native social and economic structure allows the natives to be maintained in perpetual servile status (Lewis 1968:112).

This view is problematic when applied to tribes because a number of scholars have found that indigenous culture and values, the alleged factors in perpetual tribal underdevelopment, are actually essential in order for development to be meaningfully sustained (Wilkins 1993:397). The notion that the values of traditional societies are necessarily hostile to entrepreneurial roles and economic growth is rooted in a false dichotomy (Huntington 1971:154). Cultural integrity is essential to development; “only when the individual tribe has control of its resources and sustains its identity as a distinct civilization does economic development make sense; otherwise, the tribe must choose between economic development and cultural integrity” (Smith 2000:2). The problem of the culture of poverty theory as applied to American Indian tribes is exacerbated by the widespread belief of many Americans that “the jurisdictional scope of tribes is often seen as a set of special, “race-based” rights for the Native minority. This opinion contradicts the historical fact that “American Indian tribal sovereignty and the status of tribes originated in the historical standing of American Indian tribes as sovereign nations vis-à-vis the policies of Great Britain prior to the founding of the United States” (Cornell and Kalt 2010:4).

The proper match between culture and development is important for many reasons. A ‘well-fitted’ governance structure has considerable influence over economic strategies. Different forms of governing structures contribute to varying levels of

economic prosperity. The preconquest political organization systems of tribes and how well these systems match the present form of government have a significant impact on economic development (Cornell and Kalt 2000:462). Overall, the separation of powers “is necessary but not sufficient for sustained economic development” and that cultural match also matters (Cornell and Kalt 2000:465).

Acceptance of the legitimacy of these institutions by the community is also immensely important. Tribes face trade-offs between profit maximization and cultural integrity when making decisions about new business ventures:

“Receptivity to the commercialization of tribal resources is particularly necessary for development activities in the tourism and natural resource sectors. Changing the face of a mountain to build a ski resort, advertising to attract tourists, harvesting wildlife, strip-mining the reservation – these kinds of development activities are controversial because they force the society to confront trade-offs between economic development and cultural values” (Cornell and Kalt 1993:41).

This fact reinforces that ‘cultural match’ is also important when it comes to economic development strategies. The presence of gaming typifies this problem. After IGRA was passed, many tribal members expressed the concern that the materialism that gaming fosters is inherently antithetical to tribal culture (Gonzales 2003:131). Therefore, “economic development without concomitant principles of cultural and social identity simply leads to consumerism, a result being disavowed within the mainstream economy” (Smith 2000:7).

For indigenous groups of the United States, the relationship between culture and the economic system of the society must be examined in context of development. “Economy” typically refers to the production mechanism of society: “the economic system merely helps society become itself, and the lack of an economic system adds to the downward spiral of the social structure” (Smith 2000:11). American Indian nations differ in this respect from developing countries, due to the need of tribes to balance economic development strategies and cultural values. For example, the Hopis could have profited significantly from allowing tourists to witness sacred cultural ceremonies. However, they made the decision to forego potentially large tourist revenues in order to maintain their religious integrity (Smith 2000:11). In this case, “the opportunity costs of

cultural interference and disruption outweigh the goods and services gained from additional income” (Smith 2000:11).

The preservation of cultural integrity in the present economic system does not necessitate the return to “pre-Columbian economies.” Rather, “the behavioral characteristics that make an individual an Apache or a Navajo or a Mohawk are maintained and *developed*” (Smith 2000:15). Also, tribes that have strong development plans are logically much less susceptible to engaging in strategies that might compromise cultural integrity for the sake of wanting to improve the lives of their people. In order to successfully participate and develop cultural activities, basic needs of food, shelter and clothing must be taken care of first. After these needs are met, disposable resources can be made available for cultural activities (Smith 2000:72).

The view of sovereignty as having only the function of ‘asserting property rights’ does not extend far enough. Economic development plans that consider sovereignty as “development guided by values and culture” are likely to be more successful, due to the consideration of “traditional decision-making processes designed to coexist with tribal councils” (Duffy and Stubben 1998:65). A successful example of this approach can be found in Chickasaw Nation’s plan of providing job training to tribal members for the purposes of providing qualified employees to potential companies that may choose to relocate in the Chickasaw nation territory (Duffy and Stubben 1998:66). Results of survey data of tribal council members shows that they overwhelmingly prefer reservation businesses to be managed by tribal members. At least when it comes to perception of tribal leaders, it is clear that tribal identity matters regarding economic development (Duffy and Stubben 1998:68). The salience of Indian identity is reinforced when tribal members prioritize allegiance to their own governing structure (Duffy and Stubben 1998:70). Therefore, models that assume profit-maximization is the primary goal for tribal development plans are misguided.

Chapter Two: Data and Methods

Data Set

I have used information from the U.S. Census Bureau, Census 2000 Summary Files 1-4 and the American Indian and Alaska Native Summary File. I also used the National Indian Gaming Commission list of tribal gaming compacts for the construction of my gaming variable. I used the Indian Health Services website to construct the health care autonomy variables. I found information about participation in the Community Action Grant program from the National Archives. The information for the construction of the variable to signify participation in Public Law 102-477 program is from the United States Department of Labor. The list of tribes with IRA constitutions is from the University of Oklahoma Law Center. I conduct my analysis with the use of STATA 10.1 software.

Method of Analysis

I imposed a selection criterion of a total population of at least 100 in order to avoid the possibility that cases representing very low-density areas will disproportionately influence the regression results. In order to guarantee that the models were comparable, I deleted each case with missing data from the analysis. These actions brought the total sample from 536 to 352 cases. I used OLS (ordinary least squares) regression techniques to measure the rate of poverty and rate of unemployment against the chosen factors. To address the possibility of multicollinearity in the data, I evaluated the variance inflation factor. High collinearity has the potential to artificially decrease statistically significant effects. The variance inflation factors shows us how much the variance of the coefficient estimate is being inflated by multicollinearity. The variable with the highest VIF is the native language variable, which is 3.74. A commonly agreed-upon cutoff value is 10 (Kutner et. al. 2004). The rest of the variables had variance

inflation factors all under 3. Therefore, multicollinearity was not a significant problem in this analysis.

Variables

Dependent Variables

The dependent variables are from the U.S. Census Bureau, Census 2000 Summary File. My first dependent variable for measuring economic prosperity is the poverty rate, which is the percentage of the population for whom poverty status is determined. My second dependent variable is the unemployment rate, which is the percent of the civilian labor force that is unemployed. For frequency distribution graphs, please see figures 1-a and 1-b. Table 1 shows descriptive statistics for the dependent variables.

Table 1. Descriptive Statistics for Poverty rate and Unemployment rate

	Mean	Standard dev.	Min	Max
Unemployment	15.91	10.76	0.0	84
Poverty rate	24.38	12.73	1.5	74
<i>N</i>	352			

Table 1 shows that on average, most cases deviate within 10.76% of the mean unemployment rate, which is 15.91%. Most tribes are within 12.73% of the mean poverty rate, which is 24.3%. Both are considerably higher than the average rates of poverty and unemployment in the United States, which were 11.3% and 4% in 2000, respectively (Census Bureau 2000).

Independent Variables

The independent variables in my analysis were chosen in consideration of the issues described in the literature as central components of economic development.

Control Model

The goal of the control model is to identify the most obvious factors that might contribute to poverty and unemployment rates. Controlling for these factors holds these variables constant, and allows us to isolate at the effects of the explanatory variables. All of the variables in the control model are from the 2000 Census dataset. Each variable is continuous. Total population is represented as the effect of each individual person on the dependent variable. Due to the limitations regarding revenue generated from natural resources, I used the percentage of employment in several occupational sectors to indicate the presence of such resources on the reservation. This is the most direct indicator I could find of obvious revenue generation on AIAs (American Indian Areas). I have included measures of the following; percent of individuals above the age of 16 that are employed in farming, fishing and forestry occupations (agriculture), percentage employed in manufacturing, and percentage employed in construction. I predict that a higher relative percentage of employment in these occupations is indicative of a greater preponderance of natural resources and opportunities for employment, and is likely to reflect lower rates of poverty and unemployment.

I measured human capital with educational attainment, defined as the percentage of the population over the age of 25 that has graduated from high school. I included this measure due to the enormous disparity between the American Indian/Alaskan Native population and the general population; according to the 2000 Census, 70% of American Indians and Alaskan Natives 25 and older had at least a high school education, compared to 80% of the general population. 11% of American Indians and Alaska Natives had at least a bachelor's degree, compared to 24% of the total population (Census Bureau 2006:8). I included the percentage of the population over the age of 60 in order to account for the potentially detrimental impact of the elderly population on economic autonomy. The population aged 60+ are less likely to contribute to the labor pool, and are

more likely to be reliant on social services. This combination of characteristics is predicted to result in higher rates of poverty and unemployment.

Dependency Model

This theoretical model is designed to address my prediction that tribes with greater institutional and financial independence from federal and state governments are likelier to have lower rates of both poverty and unemployment. The first measure of dependency in my analysis is the percentage of the population employed by the local, state or federal government. This data is from the 2000 Census. This variable is the only continuous variable in this model.

While data regarding most indicators of financial independence on reservations is hard to come by, information regarding tribal gaming compacts is readily available. From this information, provided by the National Indian Gaming Commission, I constructed a dichotomous categorical variable, made into a dummy variable to reflect the presence and absence of the given measure. In this case, this variable was designed to indicate the absence of tribal Class II or Class III gaming compacts. The possession of gaming compacts allows for the construction of commercial gambling operations on federal trust land. Class II gaming means “chance” games, such as bingo. The Class III category signifies “Vegas-style” gaming, which includes slot machines and various card games. I constructed the variable for 0=the possession of a gaming compact and 1=the absence of a gaming compact.

Data for ‘contracting’ and ‘compacting’ forms of health care were obtained from Indian Health Services. For these measures, I constructed dichotomous dummy variables for compacting and contracting. The excluded category in the dummy variable is Direct Service. Compacting allows for the highest amount of control, contracting offers a somewhat higher amount of control, and Direct Service tribes have the lowest amount of health care autonomy.

Social Cohesion Model

The percentage of households located on the reservation without telephone service is a continuous variable derived from the 2000 Census SF dataset. The native language variable was constructed from the Census dataset. This variable is the percentage of the reservation population over 18 that does not speak English, Spanish, Asian or Indo-European language at home. To find this, I added the percentage of the population who speak English, Spanish, Asian or an Indo-European language at home and divided the percentage of the population that does not speak any of these languages into that number. The remaining language is assumed to be a native language. The homeownership vacancy rate is also from the 2000 Census SF data and is a continuous variable. This variable is the vacant housing units that are on the market for sale.

Living arrangements are included in this model, with the inclusion of the percentage of the population living in households with family. This information is also from the 2000 Census SF. The percentage of the Native population is also included as a measure of cohesion. This variable is from the 2000 Census SF1 data and is the total percentage of self-identified American Indian or Alaskan Native either alone or in combination with another race.

Governance Model

All of the variables in this model are constructed as dichotomous dummy variables. The measure of early participation in the Community Action Program grants was constructed as dichotomous, measuring the presence of 'yes' regarding earlier participation against tribes who are found to have not participated in that same time period. In the analysis, 1 signifies the answer 'yes' and 0 signifies 'no' for the question of whether or not the tribe participated in CAP during the earlier period. The measure of participation in Public Law 102-477 is constructed in the same fashion, as a dichotomous variable with 1 signifying 'yes' and 0 signifying 'no' for the question of whether or not the tribe participates in P.L. 102-477. The measure for constitutions different from those provided by the Indian Reorganization Act is constructed in the same way, as a

dichotomous dummy variable, with '1' signifying tribes with constitutions *not* provided by the IRA and '0' signifying tribes with constitutions that are IRA-based. The presence of a functioning judicial branch is also a dichotomous dummy variable, and for each case 1 signifies the existence of a judicial system and 0 signifies the absence of a judicial system.

Chapter Three: Results and Discussion

Descriptive statistics – means, standard deviations, and predicted effect on the dependent variables – are presented in Table 2. The mean of dummy variables is always within the interval of (0-1) therefore the mean represents the proportion of cases that have a value of 1, which signifies the presence for that variable.

Table 2. Means, Standard Deviations and Predicted Impact of Independent Variables for Control, Dependency, Social Cohesion and Governance models

<i>Control</i>	Mean	sd	min	max	Predicted impact
Total population	9924.71	51553.65	101.0	704565	-
Percent age 60+	11.33	6.14	2.2	48	+
Percent employed in construction	11.40	6.12	0.0	33	-
Percent employed in manufacturing	5.85	7.56	0.0	59	-
Percent employed agriculture	4.19	5.54	0.0	54	-
Percent high school grad	71.85	11.90	8.6	98	-
<i>Dependency</i>					
Percent employed by govt.	42.49	19.93	3.5	94	+
No gaming	0.64	0.48	0.0	1	+
Contracting	0.32	0.47	0.0	1	-
Compacting	0.54	0.50	0.0	1	-
<i>Social Cohesion</i>					
Percent households without telephone	12.47	10.38	0.0	65	+
Percent vacant homes	1.82	3.43	0.0	36	+
Percent living with family	85.00	7.98	7.6	98	-
Percent native language	7.83	9.68	0.0	55	-
Percent Native	69.39	30.20	0.5	100	-
<i>Governance</i>					
Early CAP participation	0.22	0.41	0.0	1	-
Participation in P.L. 477	0.32	0.47	0.0	1	-
No IRA constitution	0.62	0.49	0.0	1	-
Courts	0.48	0.50	0.0	1	-
<i>N</i>	352				

Tables 3a – 3d show the top ten reservations and Alaskan villages with the lowest and highest rates of poverty and unemployment, in order to demonstrate how economic hardships geographically varies. I have restricted the population size to 1000+ in order to focus my analysis on the factors that contribute to differing levels of economic success for tribes that have to manage a larger reservation population.

Table 3a. AIAs with top ten lowest poverty rates

Reservation	Pop.	Poverty
Oneida Reservation, WI	21321	5.1
Onondaga Reservation, NY	1473	7.6
Prairie Band Potawatomie, KS	1238	7.8
Samish, WA	33265	8.1
Barrow, AK	4581	8.6
Cayuga Nation, NY	10707	9.4
Craig, AK	1725	9.6
Douglass, AK	5297	9.7
Tulalip Reservation, WA	9246	10.1
Citizen Potawatomi, OK	106624	10.1

Table 3b. AIAs with top ten highest poverty rates

Reservation	Pop.	Poverty
Crow Creek, SD	2225	55.7
Pine Ridge Reservation, SD	15521	53.4
Gila River Reservation, AZ	11257	52.1
San Carlos Reservation, AZ	9385	50.8
Rosebud Reservation, SD	10469	50.5
Fort Apache Reservation, AZ	12429	48.8
Tohono O’odham, AZ	10787	46.4
Northern Cheyenne Reservation, SD	4470	46.1
Zuni Reservation, NM	7758	45.9
Pasca Yaqui Reservation, AZ	3315	43.8

Tables 3a and 3b show the considerable geographic disparity between reservations and villages with high and low poverty rates. Reservations in the southwest region appear to be significantly disadvantaged, whereas AIAs on the east coast, Pacific Northwest and Alaska are thriving in comparison. The Midwest region has a significant degree of economic diversity, with midwestern tribes appearing on both lists. Table 3a shows the reservations and villages with the top ten lowest poverty rates. Barrow, AK is the most populous Alaskan area on our list and is located near oil field operations, which likely partially accounts for their low rate of poverty (Tiller 2005:64). Oneida, WI maintains a divided governmental structure, with separate divisions for enterprising,

gaming and development. The tribe also runs their own hotel, including a dining venue that offers traditional Oneida dishes. This is a prime example of a tribe that has successfully fused culture and venture capitalism. In the 1970s, Citizen Potawatomi nation successfully reformed their government and developed their sovereignty, and successfully increased their holdings from just \$550 to approximately \$120 million (Tiller 2005:830). Also, the Citizen Potawatomi Nation developed a judicial system of trial and appeals courts that function at a level of sufficiently high quality such that it has attracted tens of millions of dollars of capital to the Nation's business enterprises (Cornell and Kalt 2010:12).

Table 3b shows that the states of Arizona, New Mexico and South Dakota completely comprise the reservations with the highest rates of poverty. Gila River reservation relies heavily on revenue from agriculture, but was able to diversify as a result of gaming and other business enterprises (Tiller 2005:307). The Pine Ridge reservation is often cited as one of the nation's most destitute places. Pine Ridge is the second largest reservation in terms of landmass. The government structure is IRA-based, and elections are held every two years. There are more than 75 BIA, IHS and other federal programs on the reservation that provide services and employment (Tiller 2005:932). In light of what has been mentioned already in previous sections, it is not especially surprising that these are the reservations and villages that comprise the top ten highest and lowest rates of poverty (with populations of at least 1000).

Table 3c below shows that there is some overlap with Table 3a. Unlike the figures for poverty rate, the figures for the top ten unemployment highest and lowest show that a number of southwestern tribes have some of the lowest unemployment rates. The Cheyenne-Arapaho, OK tribe owns a number of facilities throughout the area and operates a casino, as well as earns royalties from oil and gas well leases. The government employs only several hundred people on the reservation (Tiller 2005:816). Similarly, the government on the Samish reservation in WA employs only about 40 people (Tiller 2005:1000). The Samish also adopted a new tribal constitution in 2004 and has an economy based on tourism and recreation (Tiller 2005:1000).

Table 3d below shows that primarily California reservations and large tribes in New Mexico are disadvantaged when it comes to employment. The Navajo Nation has a

land base approximately the size of West Virginia and apparently recognizes that the unemployment rate is unduly high, because Navajo officials established a training program to build a pool of qualified Navajos who are prepared to work in cultural resource management (Tiller 2005:338). The Hoopa Valley tribal government in CA is the reservation's biggest employer. The economy relies significantly on timber, fishing and farming. Land ownership is fragmented, thereby prohibiting large-scale farming operations (Tiller 2005:420). The information from the top ten highest and lowest rates of poverty and unemployment elucidates some of the conditions under which economic development occurs.

Table 3c. AIAs with top ten lowest unemployment rates

Reservation	Pop.	Unemp
Pojoaque Pueblo, NM	2712	2.4
Wyandotte, OK	1678	2.7
Peoria, OK	4840	3.2
Samish, WA	33265	4.1
Cheyenne-Arapaho, OK	157869	4.2
Citizen Potawatomi Nation, OK	106624	4.3
Prairie Band Potawatomi, KS	1238	4.3
Kaw, OK	6123	4.3
Iowa, OK	6148	4.3
Cochiti Pueblo, NM	1502	4.4

Table 3d. AIAs with top ten highest unemployment rates

Reservation	Pop.	Unemp
Hooper Bay, AK	1014	37.3
San Carlos Reservation, AZ	9385	35.4
Pine Ridge Reservation, SD	15521	33
Rocky Boy's Reservation, MT	2676	40.8
Navajo Nation, NM-AZ	180462	25.1
Yurok Reservation, CA	1103	24.9
Hoopa Valley, CA	2633	24.3
Tohono O'odham Reservation, AZ	10787	24
Gila River Reservation, AZ	11257	23.9
Makah Reservation, WA	1356	23.7

Regression Results

In this section, I will present the results of the multiple regression analysis for both of the dependent variables. The table below presents the unstandardized coefficients and standard errors for each variable. The unstandardized coefficient signifies the change in the dependent variable for every one-unit change in the independent variable. Statistical significance is indicated with an asterisk next to the coefficient. In order to make the models comparable in statistical significance, I eliminated all cases with missing data from every model. This resulted in a total of 352 cases. I also limited the population size to 100. The results for the multiple logistic regression analysis are located in Tables 4-a and 4-b for the unemployment rate and poverty rate, respectively. The statistically significant results are described below each table.

Poverty Rate Regression Results and Discussion

Control Model

First, I test the strength of my control model for explaining the rate of poverty. Most of the variables in the control model are statistically significant with a P value of $p < 0.1$ or lower. Total population size is the only measure without a significant effect in every model.

The percentage employed in construction, the percentage employed in agriculture, and the educational attainment variable are the variables that remain significant in Model 5, which has all of the variables in one regression. The coefficient for the percentage of the population aged over 60 in Model 2 is .214. As the percentage of the population that is over 60 increases, the average rate of poverty increases by .214% in the Social Cohesion model. This relationship is significant with $p < .05$. However, the effect loses all significance in Model 5. In Model 1, which is the control model only, the coefficient for the percentage employed in construction is -.35. As the percentage of the population that is employed in construction increases, the rate of poverty decreases by an average of -.35%. This relationship remains significant in every model, with $p < .01$. This effect is consistent with expectations.

Table 4a. OLS Regression of Poverty rate with Unstandardized Coefficients and Standard Errors for Population Size 100+ (restricted to cases without missing data)

<i>Control</i>	Model 1	Model 2	Model 3	Model 4	Model 5	
Total pop.	-0.0000986	0.000000217	0.0000017	-0.0000122	0.0000047	
	-0.0000111	-0.0000109	-0.0000106	-0.0000109	-0.0000105	
Age 60+ %	0.131	0.093	0.214**	0.0791	0.124	
	-0.0934	-0.0937	-0.0896	-0.0953	-0.091	
Employed in construct.%	-0.350***	-0.291***	-0.261***	-0.334***	-0.278***	
	-0.0917	-0.0927	-0.0866	-0.0934	-0.0885	
Employed in manufact. %	-0.105	-0.0176	0.0383	-0.143*	-0.0493	
	-0.0767	-0.0872	-0.0808	-0.0781	-0.0879	
Employed agriculture %	0.197*	0.214**	0.329***	0.138	0.231**	
	-0.102	-0.106	-0.0989	-0.102	-0.1	
High school grad %	-0.558***	-0.504***	-0.365***	-0.557***	-0.349***	
	-0.0475	-0.0476	-0.0521	-0.0465	-0.0517	
<i>Social Cohesion</i>						
Houses without telephones %			0.251***		0.249***	
			-0.0687		-0.0797	
Vacancy %			-0.0584		0.0441	
			-0.155		-0.154	
Living with family %			-0.109		-0.181**	
			-0.0743		-0.0738	
Native language %			0.0881		0.0632	
			-0.0664		-0.1	
Native %			0.100***		0.111***	
			-0.0245		-0.0268	
<i>Dependency</i>						
Employed by govt %		0.124***			0.00212	
		-0.0379			-0.0416	
No gaming		0.666			0.249	
		-1.143			-1.655	
Contracting		0.617			-0.0741	
		-1.244			-1.175	
Compacting		-5.279***			-4.000***	
		-1.273			-1.385	
<i>Governance</i>						
early CAP participation				4.187***	2.237	
				-1.43	-1.375	
477 participation				1.175	0.759	
				-1.29	-1.257	
No IRA const.				0.638	1.214	
				-1.144	-1.069	
Courts				2.649**	1.873	
				-1.299	-1.308	
Observations	352	352	352	352	352	
R-squared		0.339	0.385	0.439	0.373	0.484

*** p<0.01, ** p<0.05, * p<0.1

In Model 1, three out of five variables are statistically significant. The coefficient for the percentage employed in agriculture is .197. As the percentage of the population employed in agriculture increases by one percent, the rate of poverty increases by .197%. This relationship is statistically significant, with $p < .1$, and increases in significance in Model 4, with a coefficient of .231 and $p < .05$. This relationship is contrary to expectations. The coefficient for educational attainment is -.558 in the control model. As the percentage of the population with high school diplomas increases, the rate of poverty decreases by .558%. This relationship remains at the same level of significance in every model, with $p < .01$. The coefficient changes in Model 5 to -.349. This effect is consistent with expectations.

Overall, the control model holds up in this analysis. The importance of human capital is reflected by the high degree of statistical significance in the effect of education. The percentage of the population aged over 60 does lose significance, however the p value is still fairly low at .174 in Model 5. This indicates that there may be a positive effect of the percentage of the elderly population on poverty. This is because a higher percentage of the population that is retired is less likely to contribute to the labor force, and therefore unlikely to individually contribute to decreasing poverty rates. This also aligns with the dependency theory, which would postulate that the higher the proportion of population reliant on social services provided by the federal government, the less opportunity there is for policies that promote economic autonomy.

The instability of the agricultural sector is reflected in the positive relationship between the percentage of those employed in agriculture and the rate of poverty. The agricultural labor market is usually low-skilled and is less likely to necessitate a highly-educated work force than other sectors, and the results show that education is highly correlated with a lower rate of poverty. Agriculture is also highly susceptible to external factors such as volatile market conditions, weather, etc. Therefore, it makes sense that the higher percentage of those employed in the agricultural sector is reflected in a higher rate of poverty. This effect is not significant in either direction for the rate of unemployment.

Conversely, construction apprenticeship programs usually require a high school diploma or GED and upward mobility is possible in the construction sector. The median hourly wage for construction workers in 2000 was \$11.15, which is more than twice the

federal minimum wage in 2000. Further, health insurance and paid vacations are available to most construction workers (Ferguson, 2004). The agricultural sector had an average hourly wage of \$7.25 in 2000 and only 8-12% of workers out of a total of 23% with health insurance had their health insurance provided by employers (United States Department of Labor 2010). Despite the seasonal nature of construction, it appears that the generally higher than average hourly wage and additional benefits is enough to decrease poverty on reservations.

Dependency Model

Two out of four variables in the dependency model are statistically significant. One variable retains significance. The coefficient for the percentage employed in the government sector is .124. A one-percentage increase in the total percent of the labor force employed by the government is associated with an increase in poverty by .124%. The relationship is statistically significant, with $p < .01$. This finding is consistent with expectations regarding the dependency hypotheses. However, the relationship loses all statistical significance in Model 5 and the coefficient changes to .00212. The coefficient for the compacting health care option is -5.279. This relationship indicates that if a tribe uses the 'compacting' option as opposed to the other options, there is a -5.279% decrease in the rate of poverty on average. This relationship is statistically significant, with $p < .01$. The coefficient increases slightly to -4 in Model 5, but retains the same level of significance. This finding is consistent with expectations.

The positive relationship between the percentage of the population employed by the state, federal or local government and the rate of poverty demonstrates the salience of dependency theory in this analysis. This is because government employment is almost entirely dependent on the overall political context and is not a function of intra-tribal development. However, the loss of statistical significance suggests that the percentage of government-employed is associated with one or more other measures in the analysis. The significant negative effects for compacting demonstrate the relationship between health care autonomy and the poverty rate.

Cohesion Model

Two of the five variables in the social cohesion model are statistically significant in the original model, and one variable gains significance. However, some findings were contrary to the original hypothesis. The coefficient for the percentage of households on the reservation without a telephone is .251. As the percentage of households with no telephones increases on a reservation, the rate of poverty increases by an average of .251%. This relationship is significant, with $p < .01$. The relationship is still significant in Model 5, and the coefficient changes to .249. This result is consistent with expectations. The coefficient for the percentage of the population in households and in families is -.109 in the social cohesion model, and decreases to -.18%. The relationship is not significant in the cohesion model, but becomes statistically significant in Model 5 with $p < .05$. Model 3 demonstrates that as the percentage of the population living with their family increases, the rate of poverty decreases by .18%. This finding is consistent with expectations.

The coefficient for the percentage of the reservation that is American Indian or Alaskan Native is .100%. This indicates that as the percentage of the population that self-identifies as American Indians or Alaskan Native on a reservation of Alaskan Village increases, the rate of poverty increases by .100% on average. The relationship is significant, with $p < .01$. The coefficient changes in Model 5 to .111. This finding is contrary to expectations.

The positive relationship between the percentage of households without telephone service and the rate of poverty confirms the original hypothesis. As previously described, many reservations are remarkably isolated and many miles away from the closest border town or even cellular service. Households lacking basic telephone service are unlikely to have other more high-tech forms of communication at their disposal, including Internet access, email, etc. The result of the lack of available communication technology is an inability to communicate beyond face-to-face contact, and in dispersed rural settings, even face-to-face contact is less likely to occur often with other people besides close kin. When networks are dense and mostly kinship-based, this serves a potential problem for government, as those tribal council candidates with the largest and most politically influential families are likely to win elections mainly on the basis of these kinship ties.

Therefore, it is not surprising that this finding is positively correlated with the rate of poverty upon consideration of the indirect effect lack of telephone service has on the potential for economic development.

While it is possible for the family unit to be given *too* much importance, leading to isolation, a stable family situation is very beneficial. The importance of family is reflected in the negative relationship between the percentage of the population living with the families and the poverty rate. The collective is generally prioritized above individual concerns in traditional Native American communities, and this consideration extends to one's own immediate and extended family as well. Family obligations and responsibilities are given extreme importance, and Native couples are more predisposed to letting their aging parents live with them, as elders are one of the most respected groups in tribal societies (Cornell and Kalt 2000:14). The obligation to one's own family is stronger in this atmosphere, and is likely related to a sense of obligation towards the community as a whole. However, that this relationship only develops significance with the inclusion of the other variables means that there are confounding variables. Therefore the salience of this measure is reliant on other factors being accounted for.

Perhaps the most surprising positive relationship is between the percentage of self-identified Native American or Alaskan Native individuals on a reservation and the rate of poverty. However, when we conceive of most tribal development plans enacted by the federal government as reflecting the "beliefs, aspirations, and values of their authors, rather than the ones espoused by tribal cultures," this finding is no longer surprising (Smith 2000:94). This effect demonstrates that the general worldview on reservations with a higher proportion of indigenous peoples is not supported in the present economic system, as a result of the federal policies of the United States government. The typical Western meaning of economic progress was superimposed on tribes through federal Indian policy. Of course, the relationship goes both ways and adaptation is necessary. Therefore, this finding can also be attributed to the inability of indigenous institutions to adapt to the current economic conditions.

Governance Model

Two out of four variables in the governance model are statistically significant. Both variables lose significance. The coefficient for tribes that participate in the CAP program in the early period is 4.187. This indicates that these tribes experience an increase in unemployment by 4.187% on average. The relationship in the governance model is significant with $p < .01$, however the relationship loses all statistical significance in Model 5. This finding is not consistent with expectations. The coefficient for the presence of a tribal judicial system is 2.649. This effect indicates that tribes that have court systems experience a 2.649% increase in poverty, on average. This relationship is statistically significant with $p < .01$. This finding is not consistent with expectations. However, the effect loses all significance in Model 5 and the coefficient changes to 1.873.

While the initial positive effect of early tribal participation in CAP and the poverty rate is contrary to expectations, it is not surprising in light of what is known about the potentially harmful effects of highly formalized top-down programs implemented by the federal government. This result echoes the emphasis on developing programs with bottom-up implementation. Communities need to be able to participate in identifying which problems need to be addressed and must be consulted in designing programs to address the problems (Companion 2003:183). However, the effect loses all statistical significance, therefore the relationship is possibly spurious. The positive relationship between the presence of a judicial system and the rate of poverty is also contrary to expectations. However, the effect loses all significance in Model 5. Therefore, the association between the presence of courts and the rate of poverty is unclear due to mediating factors.

Table 4b. OLS Regression of Unemployment rate with Unstandardized Coefficients and Standard Errors for Population Size 100+ (restricted to cases without missing data)

<i>Control</i>	Model 1	Model 2	Model 3	Model 4	Model 5
Total pop.	-0.0000161	-0.0000145	-0.00000197	-0.0000159	-0.00000297
	-0.0000103	-0.0000102	-0.00000971	-0.0000101	-0.00000974
Age 60+ %	-0.0723	0.0437	0.00256	0.0187	0.0674
	-0.0873	-0.087	-0.0821	-0.0884	-0.0847
Employed in construct.%	-0.236***	-0.13	-0.193**	-0.157*	-0.122
	-0.0856	-0.0861	-0.0794	-0.0866	-0.0823
Employed in manufact. %	-0.159**	0.0368	-0.154**	-0.0809	-0.0335
	-0.0716	-0.081	-0.0741	-0.0724	-0.0818
Employed agriculture %	-0.116	0.0589	-0.0246	-0.0425	0.0618
	-0.095	-0.0984	-0.0906	-0.0945	-0.093
High school grad %	-0.322***	-0.311***	-0.242***	-0.321***	-0.263***
	-0.0443	-0.0442	-0.0477	-0.0431	-0.0481
<i>Social Cohesion</i>					
Houses without telephones %			0.0571		0.0416
			-0.0629		-0.0741
Vacancy %			0.335**		0.324**
			-0.142		-0.143
Living with family %			-0.453***		-0.413***
			-0.0681		-0.0686
Native language %			0.0101		-0.00739
			-0.0609		-0.0932
Native %			0.122***		0.0956***
			-0.0225		-0.0249
<i>Dependency</i>					
Employed by govt %		0.123***			0.0680*
		-0.0352			-0.0387
No gaming		0.272			0.478
		-1.062			-1.539
Contracting		-0.483			-0.998
		-1.156			-1.092
Compacting		3.317***			1.291
		-1.182			-1.288
<i>Governance</i>					
early CAP participation				0.229	0.999
				-1.326	-1.279
477 participation				2.867**	0.826
				-1.196	-1.169
No IRA const.				-2.328**	-1.849*
				-1.061	-0.994
Courts				-3.812***	-1.859
				-1.205	-1.216
Observations	352	352	352	352	352
R-squared	0.194	0.258	0.341	0.246	0.376

*** p<0.01, ** p<0.05, * p<0.1

Unemployment Rate Regression Results and Discussion

Control Model

Three out of six variables in the control model are statistically significant in at least two or more of the other models. The coefficient for the percentage employed in construction indicates that as the percentage of the labor force employed in construction increases, the rate of unemployment decreases by .236% in the control model. This relationship is significant, with $p < .01$. This finding is consistent with expectations. However, this effect loses statistical significance by Model 5. In Model 5, the coefficient increases to -.122. The coefficient for the percentage of the labor force that is employed in manufacturing is -.159. This indicates that as the percentage of the reservation population employed in manufacturing increases, the rate of unemployment decreases. The relationship is significant, with $p < .05$. This relationship is also significant in Model 2, with a coefficient of -.154. This finding is consistent with expectations. However, this effect loses all statistical significance in Model 5. The coefficient for educational attainment variable is -.322. This relationship indicates that as the percentage of adults with high school diplomas increases, the rate of unemployment decreases by .32%. This effect is significant, with $p < .01$. This relationship remains significant in Model 5, with a coefficient of -.263. This finding is consistent with expectations.

The findings reinforce the previous discussion about the beneficial nature of employment in construction, however there is no significance either way concerning the percentage of the population employed in agriculture. The relationship between construction employment and the rate of unemployment is likely due to the considerable number of Indian communities located in urban areas, which subsequently is likely to increase availability of construction jobs on these lands. However, the effect loses statistical significance with the inclusion of all of the explanatory variables, which suggests the presence of mediating factors. The effect of manufacturing is significant in several of the models, which indicates that there might be truth to the idea that the presence of manufacturing is a 'basic component' of the economy. Activities such as large-scale manufacturing commonly require access to large amounts of financial capital,

and proximity to markets or low-cost transportation facilities is especially important in manufacturing” (Cornell and Kalt 1993:39). This indicates that there are enough tribes with considerable financial capital that are near border cities and towns to have success in manufacturing, in terms of providing stable employment opportunities. The loss of significance for this result demonstrates the existence of mediating factors. The strong positive effect of educational attainment on unemployment reinforces its continuing importance.

Dependency Model

Two out of four variables in the dependency model are statistically significant. One finding loses statistical significance. The coefficient for the percentage employed in the government sector is .123. This means that as the percentage of the population that is employed by the federal government increases, the rate of unemployment increases by .123% on average. This relationship is significant, with $p < .01$. This relationship loses some significance in Model 5, but remains significant with $p < 0.1$ and a coefficient of .068. This finding is consistent with expectations. The coefficient for the compacting health care option is 3.317. This indicates that tribes that have the compacting health care option experience an increase in the rate of unemployment by 3.317% on average. This relationship is significant ($p < .01$). This finding is not consistent with expectations. However, this relationship loses all significance in Model 5, with the coefficient decreasing to 1.291.

The effect of the percentage of the population employed by the state, local, or federal government and rate of poverty further reinforces how this particular form of dependency is detrimental towards economic development on reservations. The fact that the percentage of employment in one sector is related to an increase in overall unemployment seems surprising, yet this particular form of employment is likely related to other indicators of dependency. For instance, it is possible that a tribe with a higher percentage of government employment is less likely to engage in opportunities to expand tribal autonomy. President John Yellow Bird Steele of the Oglala Sioux Tribe mentions the problems with relying on government employment due to scarcity of other opportunities: “people are interested in federal service jobs and not the goals, services

and roles of those jobs” (Smith 2000:50). Therefore, a high proportion of governmental sector employment is likely to hinder autonomous economic growth. The positive relationship between the rate of unemployment and the ‘compacting’ form of health care is surprising and does not conform to expectations. However, the variable loses all significance, so the effect of the compacting health care option is mediated by other factors and is possibly spurious. Therefore, we cannot be certain of the individual impact of tribal participation in compacting of health care services.

Cohesion Model

Three out of five variables in the cohesion model are statistically significant. All three measures retain significance. The coefficient for the rate of home vacancy is .335%, which means that as the percentage of vacant homes increases, the rate of unemployment also increases by .335%. This relationship is significant with $p < .05$, and remains at the same level of significance in Model 5. This finding is consistent with expectations. The coefficient for the percentage of the population in households that are in families is -.453%. This means that as the percentage of people living with their families increases, the rate of unemployment decreases by -.453%. This relationship is significant, with $p < .01$. The relationship remains at the same level of significance, with the coefficient of -.413 in Model 5. This finding is consistent with expectations. The coefficient for the percentage of people who self-identify as American Indian or Alaskan Native is .122. As the percentage of self-identified American Indians/ Alaskan Natives increases, the unemployment rate increases by .122%. This relationship is significant, with $p < .01$. This effect remains at the same level of significance, with a coefficient of .096 in Model 5. This finding is contrary to expectations.

The positive finding for the effect of home vacancy on the unemployment rate is expected and is demonstrative of the effect of “broken windows theory,” which postulates that neighborhoods with high numbers of vacant housing, decrepit buildings and ‘broken windows’ are significantly less economically viable than neighborhoods with many dense social ties and well-kept buildings (Chesluk, 2004). This finding seems to reinforce this notion that social ties extend beyond one’s immediate surroundings and social ties matter for employment. A socially cohesive community is

more likely to look out for one another, and employment is a realm in which this kind of assistance is often extended.

The negative relationship between the percentage of the population living in households with their families and the rate of unemployment is expected and also serves to reinforce the previously-stated importance of family stability and economic self-sufficiency on the reservation. The positive relationship between the percentage of American Indians or Alaskan Natives living on the reservation and the rate of unemployment is surprising and disappointing, yet only further reinforces the importance of a tribal economic development plan that effectively serves to meet the needs of indigenous peoples. This finding highlights that such plans must be developed from within the tribal unit and among the people.

Governance model

Three out of the four variables in the governance model are statistically significant. Two measures lose all significance. The coefficient for the participation in the 477 program is 2.867. Tribes that participate in the 477 program experience a 2.867% increase in the unemployment rate on average. This relationship is significant, with $p < .05$. This finding is contrary to expectations. However, this relationship loses all significance in Model 5, with a coefficient of .826. The coefficient for the measure of a non-IRA constitution is -2.328%. This measure indicates that tribes without IRA constitutions experience a decrease in the rate of unemployment by -2.328%, on average. This relationship is significant, with $p < .05$. This effect loses some significant in Model 5, with $p < .10$ and a coefficient of -1.849. This finding is consistent with expectations. The coefficient for the presence of a tribal judicial system is -3.812%. This means that tribes with judicial systems have a -3.812% lower unemployment rate, on average. This relationship is significant, with $p < .01$. However, this relationship loses all statistical significance in Model 5, and the coefficient changes to -1.859.

The positive result for the impact of tribal participation in the 477 program and the rate of unemployment is surprising, however the effect loses all statistical significance. Therefore, it is likely that tribal participation in Public Law 102-477 is related with another indicator of unemployment that was not included in the governance

model. Therefore, we cannot be certain of the individual impact of tribal participation in the 477 program.

The results indicating the negative relationship of a non-IRA created tribal constitution and the unemployment rate are expected, and confirm the hypothesis about the importance of a governmental structure developed from within the tribe. That this relationship remains significant when all other predictor variables are accounted for highlights the importance of an indigenously developed government. The negative relationship between the rate of unemployment and the presence of a judicial system is expected, and reinforces the anticipated effect of checks and balances within tribal institutions. However, this relationship loses statistical significance with the introduction of the other variables in the analysis. Therefore, we cannot be certain of the impact of this effect.

Measuring Strength of Effects

Standardized coefficients compare the relative effects on a dependent variable of multiple independent variables measured in different units. Table 5 presents standardized coefficients for poverty and unemployment rate for the full-model regression.

Poverty Rate Standardized Coefficients

In the control model, the standardized coefficients show that the percentage of the educated population had the greatest relative effect on poverty. The percentage of high school graduates had the strongest effect out of all of the measures. The only continuous variable in the dependency model is the percentage employed by the government, which has a beta of 0. The strongest social cohesion model variable is the percentage of American Indian/Alaskan Native population ($\beta = 0.26$). Dummy variables must be interpreted differently because the standard of measurement is categorical, rather than continuous. Changes in standard deviation for dummy variables are somewhat meaningless because there are only two categories. With dummy variables, the beta represents the difference between the mean of the group represented and the group assigned 0s. Therefore, the beta coefficient for compacting is -.16, which is the difference

between the compacting mean and the mean for the ‘direct service’ and ‘contracting’ options.

Unemployment Standardized Coefficients

The strongest effect on the rate of unemployment is found in the social cohesion framework, which is the impact of the percentage of the population living in households with family ($\beta = -0.31$).

Table 5. Standardized Coefficients for Poverty rate and Unemployment Rate

	Poverty Rate	Unemployment Rate
	β	β
Total population	0.02	-0.01
% age 60+	0.06	0.04
Employed construction %	-0.13	-0.07
Employed manufacturing %	-0.03	-0.02
Employed agriculture %	0.10	0.03
High school grad rate %	-0.33	-0.29
Govt. employed %	0.00	0.13
No gaming	0.01	0.02
Contracting	-0.00	-0.04
Compacting	-0.16	0.06
No telephones %	0.20	0.04
Vacancy rate %	0.01	0.10
Native language %	0.05	-0.01
Living with family %	-0.11	-0.31
Native %	0.26	0.27
Early CAP participation	0.07	0.04
P.L. 477 %	0.03	0.04
No IRA constitution	0.05	-0.08
Courts	0.07	-0.09
<i>N</i>	352	352

Conclusion

An unexpected result of this analysis was the differentiation in statistical significance between the models. Several measures, such as the percentage of the population employed in the government and educational attainment were significant in the predicted directions for both models. However, the significant contradictory results for the presence of a judicial system was one of the most surprising findings. In Model 4, the presence of a court system is associated with a decrease in the rate of unemployment and an increase in the rate of poverty.

It could be argued that unemployment is slightly further divorced from localized, concentrated destitution than the poverty rate. The condition of poverty is related directly to material hardship and inability to sufficiently fulfill basic needs. However, there are many different factors that have the potential to ameliorate some of the detrimental effects of high unemployment; ability to depend on a spouse or family member, inheritance money, investment dividends, and other sources of income, etc. The presence of a judicial system therefore may be indicative of urgent need as a result of a higher crime rate. Since poverty relates more directly to destitution and hardship, it arguably is more strongly related to rates of crime, especially robbery and theft. Therefore, the presence of a court system on the reservation may reflect a higher rate of poverty as a result of a higher crime rate.

The significant contradictory results for the presence of compacting health care is also surprising. While the effect on unemployment loses statistical significance, the relationship still suggests that the two dependent variables measure and reflect differing phenomena and social processes in certain contexts. The decision made by tribal leaders to directly negotiate with the federal government in order to manage their own health care is reflective of a tribe that is effective in managing all of its programs. These programs and services are oftentimes directly and indirectly created for the purpose of decreasing or ameliorating the effects of poverty; education programs, housing, etc.

Therefore, improved social services designed specifically to address the needs of the community might have the effect of disincentivizing the unemployed population to seek employment. This theory makes more sense if the presently available unemployment

options are primarily working for the federal or state government. While contradictory and surprising findings can certainly be theorized, there is clearly a need for further research on how the different measures relate to economic development.

With the help of self-determination policies, many tribes already have successful economic strategies, and many of these successes in the realm of development are linked to greater autonomy over tribal programs. For instance, tribes that transfer the control over forestry from the BIA to their own tribe experience a productivity increase of 38,000 board feet of timber output, and the price received in the marketplace for that output increases by 4.5% (Cornell and Kalt 2010:13). The importance of fostering tribally-owned small businesses also has a demonstrated impact. The Winnebago of Nebraska Tribe's Ho-Chunk, etc. total businesses yield more than \$100 million a year in revenues and reduced the unemployment rate on the reservation from 70% to single digits (Cornell and Kalt 2010:14).

Tribal development scholar Smith (2000) outlines an effective economic paradigm for tribes. Involvement in the export industry, import-replacement of products, and production of innovative manufactured goods characterize the development cycle. Tribes earn revenues from extractive enterprises such as mines, forestry projects, and water sales (Smith 2000:45). Tribes must also develop import-replacing industries within the goal economy in order to provide for drastic reduction of revenue leakage to border communities. Import-replacement refers to the process of entrepreneurs replacing imported goods with production from within. This generally results in an increase in retail and service activity on the reservation (Smith 2000:46). Import-replacement reduces transport distances thereby allowing production on the reservation to replace previously imported products at a cost savings. For example, relatively low wage rates on the reservations make conducting business more profitable. For the successful import-replacement to occur, tribes must develop new and innovative products. For example, the modern Navajo arts and crafts industries include world-renowned techniques for weaving and silversmithing. While Navajos originally developed these industries for domestic consumption of jewelry and blankets; these industries have become a significant source of income for many individual artisans, as well as the tribally-owned Navajo Arts and Crafts Enterprise (Smith 2000:47). The development of these new techniques and

products turn into new export industries, which provide increased or substitute import-earning income. Import-replacement becomes a new source of exports (Smith 2000:47). However, in order for this development cycle to successfully take place, the tribe must identify those industries available for import-replacement and export development. Therefore it is necessary for the local economy to have an understanding of its resource base (Smith 2000:47).

The standard model of development for city centers can also apply to reservations. This model of development focuses on import-replacement and the development of exports. Growth occurs from the import-replacement and export-development process because as import-replacement occurs, a growing number and diversity of employment opportunities develop. Furthermore, as employment earnings increase and the multiplier effect is set in motion, the region increases their imports market and may then provide new and different imports. As activity and employment increase, jobs and activity spread from the city, thereby increasing economic activity in the surrounding areas. As the process continues, there will be new uses for existing technology and new technological developments as entrepreneurial activity occurs. As the process proceeds and new businesses are opened, the capital stock of the city region will increase (Smith 2000:48). This model does not simply apply only to cities; it applies to any society striving for development (Smith 2000:49).

Import replacement benefits from the multiplier effect. According to one study, 87% of disposable income of the Navajo Nation is spent off the reservation (Yazzie 1989). An example of the multiplier effect is how money is spent, "if 87% of all dollars arriving instantly go to the border towns, 87% of the thirteen cents leaves the reservation and so on. The total effect of that single dollar is \$1.15" (Smith 2000:49). However, if the situation changes so that 87% of every dollar of income is spent on the reservation, then the single dollar creates up to \$7.69 of additional spending. Therefore, in order to increase employment and incomes within the reservation economy, the tribe must increase domestic trade or increase exports to earn increased imports "(Smith 2000:50). Interaction with the global economy is absolutely necessary. Without this interaction, reservations face continued isolation (Smith 2000:50). Therefore, most tribes need to combine the strategies of import-replacement, enhance the impact of the multiplier effect

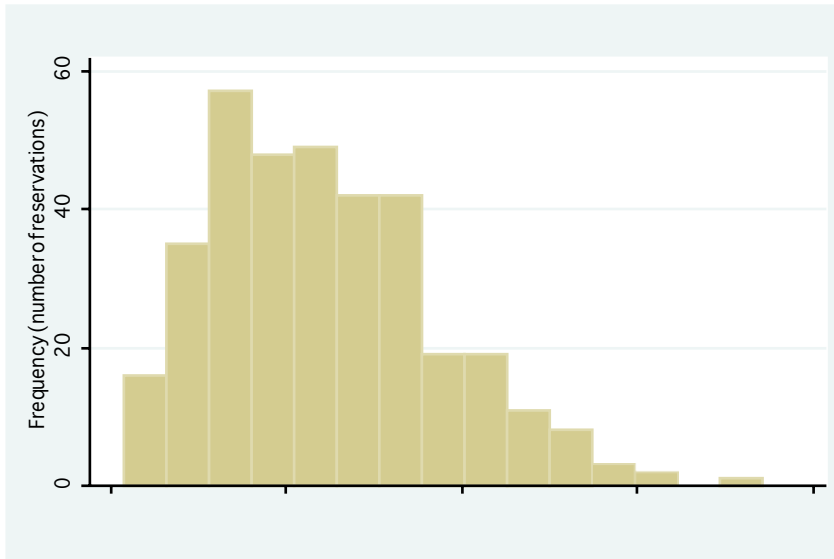
and increase exports. As a result, the increase in revenue and employment opportunities will contribute to a reduced reliance on government employment” (Smith 2000:50).

Furthermore, the analysis of the standardized coefficients demonstrates the importance of education. Tribes should focus on subsidizing education costs for tribal members, and should incentivize specialization in industries that will be most beneficial for the tribe to gain human capital. This will vary according to tribe. Tribes must identify the industries and services most likely to be profitable. The tribal government must have an understanding of the available and potential resources. Also, the tribe must know the kinds of skills that tribal members possess. An inventory of the skills of the existing population is useful because a survey will show what skills are in high supply or demand. For example, if a survey shows individuals with child care skills are unemployed due to lack of demand, and individuals skilled in basketry are discouraged to practice their craft due to child care responsibilities, then the tribe might form a cooperative enterprise for tribal members skilled in basketry. Meanwhile, tribal members skilled in child care can open a child care service (Smith 2000:53). It is entirely feasible that a lack of awareness of the skills that are available pose a significant obstacle to development. A tribe with an awareness of its resources has gained a significant strategic advantage in planning out its economy and internal structure.

Furthermore, the tribe must aid and encourage tribal members in their individual entrepreneurial pursuits. This may include streamlining the inevitable red tape or providing assistance (Smith 2000:66). As individual incomes rise, tribal governments will pay less attention to the day-to-day issues of jobs, housing, and poverty, allowing them to address important issues such as constitutional reform. The goal of economic development is “not aimed simply at tribal resources with the mainstream economy” but instead is to increase cultural integrity and improve the day to day lives of tribal members (Smith 2000:75). The recent upturn in economic conditions for American Indians and Alaskan Natives today can be attributed to the present policies of self-determination and an increase in educational attainment. After more than a hundred years of failed efforts to improve the lives of U.S. indigenous people, it is clear that the only strategy that has ever really worked is allowing tribes to make their own decisions (Cornell and Kalt 2010:15).

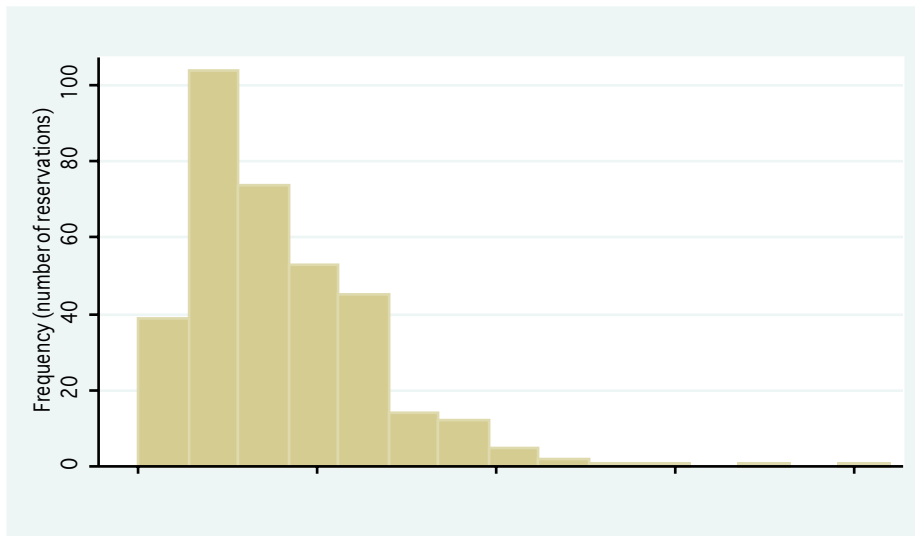
Figures

Figure 1-a. Frequency Distribution of Poverty rate



The distribution of the poverty rate shows a slightly positive skew with a long right tail. However, a significant number of cases fall to the left of peak distribution. Skewness is .68. Distribution is heavy-tailed at 3.34

Figure 1-b. Frequency Distribution of Unemployment Rate



The histogram for the rate of unemployment shows a clearer concentration around the mean than the rate of poverty. This graph shows a positive skew, with a number of cases falling to the left of the peak distribution. Skewness is 1.79. Distribution is heavy-tailed at 9.06, which means a higher probability of getting large values.

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