

**Residential and Household Poverty of American Indians
on the Wind River Indian Reservation**

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ABSTRACT

Poverty among American Indians living on reservations in the United States remains a widespread and seemingly intractable problem. In order to address this problem it is imperative that researchers examine poverty and poverty policy longitudinally in order to better understand factors that contribute to poverty, to assess attendant personal and social consequences of persistent poverty, and to evaluate programs on reservations intended to reduce the impact of poverty or expedite individuals' movement out of poverty.

This paper examines the persistence of poverty on the Wind River Indian Reservation (WRIR) located in central Wyoming. Like many reservations, WRIR is characterized by its residents' low incomes, high unemployment, and high poverty rates. Home to the Eastern Shoshone and Northern Arapaho, the Reservation is unique in having conducted a census of households on the Reservation in 1987. The detailed information on households and individuals has been used extensively in support of reservation grant applications and in setting policy goals. The 1987 survey, with significant modifications, was replicated during the summer and early fall of 1998 as a joint effort by the Joint Business Council of the Eastern Shoshone and Northern Arapaho tribes, Bureau of Indian Affairs, Indian Health Service, various Wyoming State agencies, the University of Wyoming, and Johns Hopkins University. The present project has (1) restored and analyzed the 1987 data, (2) created pooled panel data of matched 1987 and 1998 residences, (3) and analyzed the tenacious hold of poverty within this population. This report describes poverty as related to education, per capita income payments, employment and unemployment. Geographic Information System (GIS) was used to examine the spatial distribution of survey information as part of our effort to more closely analyze our data and disseminate the information as widely as possible to all potential users on and off the Wind River Indian Reservation. This analysis provides a significant guide for the examination and design of poverty programs in the past and future.

Introduction and Overview

The widespread and persistent poverty of American Indians has been documented, described and analyzed in official censuses, survey research projects, and ethnographic studies throughout this century. Over the past two decades the income disparity between American Indians and other population groups and even among Indians in the United States has become more dramatic. The median family income (in 1989 dollars) of all American Indian families declined by 5 percent from 1979 to 1989. Median family income for American Indians in 1990 was \$21,750, which was about 65 percent of the median family income of \$35,225 for all U.S. families. When one looks only at married couples, American Indian couples earn \$71 for every \$100 earned by all U.S. married couples. The income of American Indian single female householders in 1990 was 62 percent as much as that of all female householders.

Data for poverty reveals the same disadvantages for Indians. Between 1979 and 1989 the percent of American Indian families below the poverty level rose from 24 percent to 27 percent, while the poverty rate for all U.S. families hovered around 13-14 percent. For single female householders the picture was more dismal, with half of female-headed Indian households in poverty compared to 31 percent for the U.S. as a whole.

Examining only those Indians living on reservations or trust lands (437,431 of the 1,959,000 persons recorded by the 1990 census), one finds that, compared to non-reservation Indians, income drops by approximately half and poverty levels increase appreciably, to about 51 percent of all Indian households. These data raise questions about selective migration. Most likely, the lack of employment opportunities leads to the out-migration of the most talented and better educated individuals from Indian reservations, exacerbating both the exceptionally high unemployment rates and low incomes among reservation Indian people.¹ There is, however, considerable human capital that is not utilized on reservations, as we show below.

Explanations of American Indian Poverty

Several recent case studies of Montana tribes superbly describe the underlying social and psychological disruptions associated with income deprivation. O'Neill's *Disciplined Hearts*, sensitively describes the essence of poverty and the trials of family, kin, and tribal responsibility when structural impediments like limited employment opportunities, access to capital, or access to social resources such as advanced education retard the likelihood of success. Resulting alcoholism, fatalism and suicide speak to the damaged social environment in which many Indians reside. *In Sisters in the Blood*, Ardy Bowker presents a moving portrayal of the impact of external institutions and shifting internal social organization on reservations. Bowker's study focuses on women's education within the context of women "dropping out" of the school system and the long-term impact of this on not only the women but also the reservation as a community. Bowker, like O'Neill, describes a cycle of rejection, exploitation and poverty that seems to pervade Indian reservations. However, the above writers also point to the possibility of addressing persistent poverty in creative and effective ways. With greater understanding of the complexity of life on the reservation and a commitment to the participation of the poor themselves in the design and implementation of programs, existing resources can be used to address the needs and desires for improved lives within the cultural context and collective economies of the reservation.

The persistence and depth of poverty on reservation/trust lands lends itself to several interpretations. William Julius Wilson's analysis of the underclass, or the truly disadvantaged, within the

¹ Increasingly, there are tremendous income variations among tribal groups and reservations.

core of large cities seems to coincide with Jorgensen's (1971) portrayal of American Indian poverty in terms of exploitation/dependency theory in a neocolonial analysis. Paternalism and ensuing powerlessness resulting from the dependency of reservation Indians on external resources for both economic support and decision-making are central to this argument. Although the paradigm is attractive, it has to be synthesized with alternative or supplemental approaches.

Cornell and Kalt's (1990) insightful comparative analysis provides one alternative explanation. They argue that differential economic success by tribes depends on several factors: overcoming the dependency of a colonial past; variations in performance across endowments in natural and man-made resources, location, and human capital; varying outcomes of indigenous culture and tribal social organization; and differing successful (as well as unsuccessful) tribal governmental forms. Cornell and Kalt suggest that no simple explanation of reservation underdevelopment is possible. Instead, they link poverty to economic development requiring collective action by tribes. Furthermore, they argue that "when actors other than tribes involved control major decisions, the chances of *any economic development at all* are substantially reduced" (p. 105). Asserting that "economy follows sovereignty," they demonstrate that tribes with stark mismatches between culturally legitimated social organization and formal governmental structure do poorly in reaching and implementing the collective decisions required for development.

Others studying American Indian poverty suggest that the lack of entrepreneurial spirit or individual competition hampers economic development on some reservations, so that indigenous culture and social responsibility, which override individual benefit negatively, influence economic opportunities on reservations. Cornell and Kalt argue the more important point is the fit between cultural imperatives and tribal governance. Here, the concern is for the stability of sovereign governments and their ability to resolve disputes, factors that are essential to the viability of long-term investments, whether they are internal to the tribe or from extra-tribal sources.

The Wind River Indian Reservation

In 1863, 44 million acres of land in what would become central Wyoming were designated as tribal land of the Eastern Shoshone people. Much reduced in size, this area was later designated as the Wind River Indian Reservation (WRIR). Situated in what seemed to be desolate, barren land, although butted against one of the most magnificent mountain ranges in the United States (the Wind River Range contains the highest peak in Wyoming), the original 44 million acres were viewed in 1863 as expendable. By 1878, land cessions in exchange for payments reduced the reservation to 2.3 million acres. That same year the Eastern Shoshone tribe's long-term adversary, the Northern Arapaho, were forced onto the Wind River Indian Reservation, creating a situation that would encumber reservation governance for more than a century. In 1904 an additional 335,000 acres, nearly all of which is arable land, were put under the jurisdiction of the United States government, with responsibility later transferred to the Bureau of Reclamation. Many non-Indians were given parcels of land in this 'withdrawal' area in return for poorer land elsewhere on the WRIR they had acquired under the Dawes Act of 1887, allowing private sale of tribal land. (Refer to Appendix for maps of WRIR.)

Although substantially reduced in size, the WRIR contains extensive oil and natural gas fields and significant water rights on the Wind River, which originates on the reservation. By the 1970s these abundant natural resources, including fishing and hunting rights, became sources of contention with Wyoming and surrounding states. The legacy of the U.S. government's action of consigning two tribes to the same reservation has contributed to difficulties in addressing these problems. Because both tribes must jointly arrive at a consensus on how these resources are to be conserved, utilized or shared, this situation speaks directly to the issue of social and political organization as an impediment to economic

development.

The 1990 census found 5717 Indians on the WRIR (including the withdrawal area) along with about 1,000 non-Indians (U.S. Census 1990). Per capita American Indian income of \$4,340 and median family income of \$14,898 were well below the national average (Tiller, 1996). The 1990 Census of Wyoming found 47.8 percent of Indians living below the official poverty line, dramatically higher than the national poverty rate. Likewise, official unemployment of WRIR Indians was a staggering 32.4 percent or four times the national average in 1990. These data most likely reflect a combination of factors on the WRIR and the highly unfavorable economic conditions of Fremont County (location of the reservation) in 1990.

The 1987 Wind River Indian Needs Determination Survey (WINDS)

Out of frustration with the lack of current, accurate information on the WRIR, the Business Councils of the Eastern Shoshone and Northern Arapaho tribes, along with Community Development Services (an office of the Wyoming Department of Health and Social Services) conducted a complete census of the WRIR in 1987. A total of 1,508 usable household interviews were obtained, representing 4435 individuals (3773 Indians). Based on the characteristics of the head of household, that survey estimated the WRIR population to be 48.4 percent Arapaho, 29.2 percent Shoshone, 9.1 percent other Indian, and 13.2 percent non-Indian. WINDS focused on income, employment, housing, health, education, transportation and basic needs, with particular attention given to the perceptions and felt needs of the Reservation residents.

The WINDS Executive Summary reported the socio-economic status (SES) of residents as being much worse than SES data subsequently derived from the 1990 U.S. Census. For example, average family income (including per capita payments) for Arapahos was \$4,972, for Shoshones it was \$5,778, for other Indians \$6357, and for non-Indians it was \$12,556. Unemployment, defined as an absence of full-time employment, was an astounding 71 percent, of which 30 percent were unemployed five or more years -- people not likely to be counted as unemployed using official definitions of unemployment. Three out of four households were below the official poverty threshold. This information, according to Gary Maier, head of Wyoming Community Services and director of the survey, led to dozens of grant awards from federal, state, county and Indian offices and agencies, totaling \$22 million by 1996.

In Partnership with the WRIR

The University of Wyoming (UW) has a long-standing relationship with the Wind River Indian Reservation, accentuated by the unique one university/one reservation equation existing in the state. The University's relationship with the Wind River Indian Reservation was formally acknowledged and organized in 1994 with the creation of the University of Wyoming's Wind River Initiative. The Wind River Initiative officially represents UW in relationships with the Reservation and sometimes serves as a conduit through which needs and concerns from the Reservation are channeled to appropriate campus units and University personnel. Such needs led to the formulation and implementation in 1998 of the Wyoming Indian Needs Determination Survey project (WINDS-2).

The Joint Business Council (JBC) of the Eastern Shoshone and Northern Arapaho tribes established the agenda for WINDS-2 and authorized its conduct by University of Wyoming researchers. An advisory council composed of JBC members, individuals from Wind River Indian Reservation offices, and State of Wyoming offices was established to help design and approve the survey instrument. The best interests of the Reservation were considered at all times and the JBC's right to expect significant returns from WINDS-2 was acknowledged. Written reports and verbal

presentations to the JBC have given WINDS-2 information back to the Indian community in the variety of formats.

The 1998 Wyoming Indian Needs Determination Survey (WINDS-2)

The isolation, poverty, unemployment, and natural resource potential on the WRIR provide a valuable opportunity to evaluate a number of competing explanations of poverty and disadvantage among Indians living on a reservation or trust land. The WINDS-2 interviews contain more extensive information about the actual living conditions, education, employment, health, public safety, housing, and other features of everyday life on the WRIR than did the 1987 WINDS project. Current information is sufficient to address a variety of social needs and policy issues.

Although ethnographic case studies abound, few studies examine social status, including poverty, employment, health, and housing among American Indians over time. Even more unusual is the ability to examine individual residences and households longitudinally by means of a panel study. Matched panel data from 1987 and 1998 will be utilized extensively in forthcoming papers and articles. To our knowledge no similar data sets exist which allow both cross-sectional and matched panel analysis for any American Indian reservation.

The Fremont County Planning Office, in support of the WINDS-2 project, assembled a complete list and location guide of all households on the WRIR. These data were placed into a Geographic Information Systems (GIS) file, along with compatible files from WINDS and WINDS-2 that were appended to a composite GIS map file. By spatially locating all households this project offers new opportunities for understanding and addressing both structural and spatial factors contributing to and appropriate for mitigating persistent poverty. This spatial presentation, having taken appropriate steps to insure confidentiality of information to participants in the WINDS-2 project, is now available on the University of Wyoming Spatial Data Visualization Center web site.²

WINDS-2 interviews were conducted throughout the summer and early fall of 1998. All interviewers were residents of the WRIR. The interview coordinator, a resident of the Reservation, shared both Arapaho and Shoshone ancestry. Every household on the WRIR was selected for inclusion in the survey. If more than one family lived in the same residence, an individual from each family was interviewed.³ Interviews were conducted in 83 percent of all Indian homes and 61 percent of all non-Indian homes.

The 1998 Wind River Indian Needs Determination Survey (WINDS-2) established the number 3800 and Eastern Shoshone number 1600. The remaining 680 are Indians of other tribes. population of the WRIR at 7680 persons. Of these, 1600 are non-Indians. Northern Arapahos These figures do not include residents of the town of Riverton, which lies within the boundary of the reservation, nor does it include the area within the boundaries of the WRIR designated as Bureau of Reclamation land.

Initial Findings from WINDS and WINDS-2

The findings reported here are for Indians who reside on the Wind River Indian Reservation. In this paper we examine particular patterns of poverty and income of Arapaho and Shoshone respondents. Unless designated as Indians of one of these tribes, the analysis is for all Indians living on

² The spatial data can be found at <http://www.wims.sdvc.uwyo.edu>. Refer to Appendix.

³ A family or household was any person or group of persons who identified themselves as a separate household, having their own source of income, which was not shared on a regular basis with other persons.

the WRIR.

Employment and Unemployment on the WRIR. In our analysis, to be unemployed means that one is employable but does not have paid work. Only unemployed persons who could reasonably be expected to have a job are considered unemployed. Unemployed persons may be seeking work or may be discouraged workers who have given up trying to find a job. Persons who work seasonally but are not working at the time of the interview are included among the unemployed.

There are several reasons an adult may be temporarily or permanently unemployable. Some have full-time responsibilities caring for another person, such as primary responsibility for young children, a disabled family member, or an elderly person in the family in need of, but without, accessible home health care or daycare. Unemployable people are those who consider themselves homemakers, are disabled or have debilitating medical problems, are elderly non-working adults, or are otherwise retired from the paid labor force. They are not counted among the unemployed.

Using these criteria in 1998, we found that 38.1 percent of Indians on the WRIR ages 18-64 are unemployed, and more than 82.9 percent of these persons would like to work but are unable to find a satisfactory job. Long-term unemployment is common, and there is considerable movement of people between jobs. Among those looking for work, median length of time was slightly more than one year. When asked if they had ever moved from the WRIR to take a job, more than a third of respondents answered in the affirmative. Among the unemployed, 71 percent said they *would* leave the reservation in order to find work (though 35 percent are currently *unable* to leave the reservation at present).

Among Indian adults on the WRIR age 18-64, 47 percent were working for a wage or salary during at the time of the interview. The labor market reflects a geographic area with an economy lacking manufacturing and assembly operations, few private sector service jobs, and few opportunities for professionals and technical experts. More than half of employed people are either state, local or federal government employees. The distribution of employed individuals by occupational category is shown in Table 1.

Table 1 includes persons who are working less than full-time. Among employed males, 15.2 percent indicate they are working less than 36 hours a week, while 22.6 percent of employed females work less than 36 hours a week. For male and female household heads these figures are 14.2 percent and 20 percent, respectively.

Between 1987 and 1998 the distribution of employment remained weighted toward the governmental/service sector, with most jobs created by external entities such as the Bureau of Indian Affairs, Indian Health Service, and county school districts. Shifts between 1987 and

Table 1: Percent* of Native Americans in Occupational Categories, by Sex, 1998. (N=954)

<u>Occupations</u>	<u>1998</u>	<u>Men</u>	<u>Women</u>
Secretary or clerk	12.7	2.0	22.2
Semi- & skilled construction	8.1	16.5	0.6
Maintenance	9.2	12.5	6.2
Health service	7.1	3.3	10.5
Sales worker	5.2	3.1	7.1
Social & Elderly service	5.2	4.4	6.0
Sales representative	5.2	3.1	7.1
Education service	4.6	2.0	6.9
Food service	4.4	0.4	7.9
Teacher	4.3	1.6	6.7

Ranch hand or logger	4.1	8.5	0.2
Semi- & Skilled extractive	3.4	7.4	0.0
Youth & child service	3.0	1.8	4.2
Health or other technician	2.8	2.9	2.8
Self-employed	3.3	3.8	3.0
Office supervisor	2.6	2.7	2.6
Recreation service	2.5	3.1	2.0
Transport or driver	2.4	4.7	0.4
Handler or laborer	2.2	2.9	1.6
Protective service	1.9	3.6	0.4
Manager of public organization	1.8	1.8	1.8
Private rancher or farmer	1.7	3.1	0.4
Professional	1.5	1.1	1.8
Machinist or mechanic	2.8	3.1	0.6
Manager of private firm	2.9	2.5	3.2

*Total may not equal 100% due to rounding error

1998 show the growth of employment in semi/skilled construction. An increase in health service jobs was counter-balanced by declines in educational services and ranching/farming employment. The distribution of jobs among WRIR residents is unlike typical urban or rural communities. Generally the job market reflects an extensive governmental bureaucracy that provides the best and most lucrative jobs but is controlled externally, co-opting the most talented and ambitious individuals living on the WRIR.

Table 2: Percent* of Indians in Occupational Categories, 1987 and 1998.

<u>Occupations</u>	<u>1987</u>	<u>1998</u>
Secretary or clerk	17.2	12.7
Semi- & skilled construction	3.0	8.1
Maintenance	8.9	9.2
Health service	2.1	7.1
Sales worker	3.9	5.2
Social & Elderly service	2.7	5.2
Sales representative	3.9	5.2
Education service	8.9	4.6
Food service	4.5	4.4
Teacher	6.2	4.3
Ranch hand or logger	4.5	4.1
Semi- & Skilled extractive	3.3	3.4
Youth & child service	1.5	3.0
Health or other technician	2.7	2.8
Self-employed	0.9	3.3
Office supervisor	3.6	2.6
Recreation service	1.5	2.5
Transport or driver	3.9	2.4
Handler or laborer	2.4	2.2
Protective service	2.7	1.9

Manager of public organization	1.2	1.8
Private rancher or farmer	4.5	1.7
Professional	2.1	1.5
Machinist or mechanic	2.4	2.8
Manager of private firm	1.2	2.9

*Total may no equal 100% due to rounding error

Job Training. More than two in five persons interviewed in 1998 indicated that they had received some kind of job training or were currently in a job training program. This compares to 26.6 percent in 1987. Although nearly 77 percent of surveyed individuals in 1998 were able to find a job following job training, only 38.9 percent are currently working at the skill for which they were trained. There is another side to job training. Many individuals report having been in job training many times. For them, and many others, job training can be a substitute for paid employment or a means of economic support between jobs.

Poverty on the WRIR - 1987 and 1998

Our primary interest is to explain or at least clarify the overall pattern of poverty on the WRIR. While not overlooking the unique features of this Indian reservation, the findings should be applicable to Indian reservations in similar circumstances and whose range of social problems is similar to those found on the WRIR.

Using the conventional standard of the federal government (<http://aspe.os.dhhs.gov/98gb/happend.txt>) in 1998, nearly three out of five American Indian families had an income below the Poverty Threshold. This varies across the two main tribes, with 62.4 percent of Northern Arapaho families and 49.5 percent of Eastern Shoshone families living below the Poverty Threshold. Of Indian residents on the WRIR, 67.6 percent fell below the official poverty line in 1987 (Social Security Bulletin) and 56.7 did so in 1998. Significant variation in poverty between the two dominant tribes is evident in both periods.

Table 3: Percent Distribution of Households in Poverty, by Tribe 1987 and 1998.

	<u>1987</u>	<u>1998</u>
Northern Arapaho	71.5	62.4
Eastern Shoshone	65.7	49.5

Almost three of four Northern Arapahos were poor in 1987 compared to two out of three Eastern Shoshones. Although Northern Arapahos were more likely to be in poverty both in 1987 and 1998, their percentage of poor households declined nearly ten percent. This is a significant amount, but fifty percent less than the decline in poverty among the Eastern Shoshone whose poverty rate decreased at a faster pace, dropping from 65.7 percent to 49.5 percent. Much of these shifts may be attributed to families' responses to changes in per capita income payments, discussed below.

The relationship between educational attainment and likelihood of living in poverty is hardly surprising and mirrors trends in American society that increasingly penalize individuals with less than a high school education. Job careers, regularity of employment, job-related benefits, and pay are much

less available for those with less education. As shown in Tables 4a and 4b, there is a very strong inverse relationship between educational attainment of household head and

Table 4a: Educational Attainment of Head of Poor Households, by Tribe 1987.

	Education Level of Adult Head				
	<u>0- 11</u>	<u>12</u>	<u>13-15</u>	<u>16+</u>	<u>Total</u>
Northern Arapaho	42.3	36.0	19.5	2.2	100.0
Eastern Shoshone	47.3	33.7	16.5	2.5	100.0

Table 4b: Educational Attainment of Head of Poor Household, by Tribe 1998.

	Education Level of Adult Head				
	<u>0- 11</u>	<u>12</u>	<u>13-15</u>	<u>16+</u>	<u>Total</u>
Northern Arapaho	27.7	45.1	21.4	5.8	100.0
Eastern Shoshone	34.6	38.2	23.0	4.2	100.0

likelihood of living in poverty. While educational attainment increased markedly between 1987 and 1998, the relationship between poverty status and educational attainment held firm for members of both the Northern Arapaho and Eastern Shoshone tribes.

In 1998, 25 percent of families with a head of household with 16 or more years of schooling (21 of 84 individuals) were living in poverty. Even more arresting, 60 percent of all household heads with 12 years of education or the equivalent were in poverty in 1998. Clearly, these data give every indication of the deplorable lack of opportunities and the waste of human capital on the WRIR.

While employment is considered by most Americans to be the avenue out of poverty and is the main principle behind the 1996 changes in welfare, Table 5 raises questions about this

Table 5: Percent of Heads of Poor Households Who Are Employed, by Tribe 1987 and 1998.

	<u>1987</u>	<u>1998</u>
Northern Arapaho	47.5	27.1
Eastern Shoshone	49.5	34.2

assumption. The incidence of working poor is very high on the WRIR. Employment ameliorates poverty for only about seven in ten families with an employed head of household. These data suggest that currently operating public organizations, regardless of their governmental level, provide few real opportunities for structural changes that would enhance local control, capital infusion, and the dynamic use of human capital to overcome this situation.

These trends in poverty, when juxtaposed with changes in the percent poor who are employed, reveal interesting patterns. While percent of persons in poverty decreased by almost ten percent for Northern Arapahos and over fifteen percent for Eastern Shoshones between 1987 and 1998, the percent of working poor showed an even greater decline. The percentage of poor employed declined from 45.4 percent to 17.5 percent for the Northern Arapahos, while the working poor was cut by more

than half for the Eastern Shoshones, from 54.0 percent to 19.8 percent. The rate of decline for the two tribes was almost identical (61.4 percent for the Northern Arapaho and 62.8 percent for the Eastern Shoshone).

These findings are most likely explained by national and international economic shifts and by policies of the Bureau of Indian Affairs over which neither tribe has much control. While the populations of both tribes have increased over the past decade, their capital assets (primarily oil and gas) have remained constant and even declined precipitously over the past three years with the drop in the value of fossil fuels. This circumstance of increasing population and declining assets creates a detrimental equation in which per capita payments (in standardized dollars) have declined from 1987 to 1998.

Table 6 shows that 45.4 percent of Northern Arapahos received all their income from per capita payments⁴ in 1987 while 54 percent of Eastern Shoshones did so that same year. Similar

Table 6: Percentage of Respondents Who Relied on Per Capita Payments for All Their Income, by Tribe and Year.

	<u>1987</u>	<u>1998</u>
Northern Arapaho	45.4	17.5
Eastern Shoshone	54.0	19.5

patterns exist for the 1998 data except that the proportion relying on per capita payments declines dramatically over the decade. Among Northern Arapahos the percentage relying exclusively on per capita payments went from 45.4 to 17.5 percent while among Eastern Shoshones singular dependence on these payments went from 54 percent to 19.5 percent. For those Indians relying on per capita payments for at least half of their income the shifts were just as disappointing and dramatic (see Table 7). Just this past spring (March 1999) per capita payments were cut in half by the BIA in response to long-term drops in the value of oil at the well-head. These data, although

Table 7: Percentage of Respondents Who Relied on Per Capita Payments for at Least Half Their Income, by Tribe and Year

	<u>1987</u>	<u>1998</u>
Northern Arapaho	67.2	28.0

⁴ Per capita payments accrue from earnings on assets held jointly by the two tribes.. The amount of per capita payment received by individuals varies by tribal membership. For Northern Arapaho and Eastern Shoshone members, per capita payments are distributed equally to the two tribes, but because more Northern Arapaho must share the tribe's portion of this money each individual's per capita payment is less than for members of the Eastern Shoshone tribe. In 1987 per capita payments were \$1300 and \$1950 for Northern Arapahos and Eastern Shoshones, respectively. Per capita payments in 1998 were \$1075 and \$2275, indicating a higher rate of new membership among the Northern Arapaho and a drop in per capita payments (in constant dollars) in the more recent period largely due to decreasing revenues from royalties on gas, oil, and mineral holdings.

coldly objective and somewhat sanitized, begin to speak to the difficulty that Indians have in planning their futures without some control over resources subject to the vicissitudes of the market place. Once again the neo-colonial social formation helps explain deprivation on Indian Reservations.

Discussion and Implications

Our work is informed by that of Cornell and Kalt's analysis of Indian poverty where poverty is attributed to four possible explanations: dependency theory, economic factors (location, human capital), social organization on reservations and political conflicts over decision making. In this paper, we examine the impact of human capital, including the role of schooling and job training on occupational careers (social mobility) and poverty. While these data suggest that some changes are taking place on the WRIR, the situation remains highly problematic. Change in the percentage of Wind River Indians living below the poverty line is moving in a positive direction but remains alarmingly high. The portion of heads of poor households living in poverty has declined significantly but also remains high and raises questions about the wage structure and underemployment. The waste of human capital is apparent in these data, especially given the increased educational attainment between 1987 and 1998. The median education gains of more than one year have not been translated into employment and earnings to a degree that poverty remains anything other than a major problem on the WRIR.

While at first sight it appears that government actions and agencies are making an important difference in peoples' lives, the situation remains one that is best understood in terms of a neo-colonial paradigm. The presence of the federal government to address problems is linked in many ways to a paternalistic relationship, contributing to a situation in which real solutions to poverty have not been forthcoming. It is obvious that, based on what is presented here, there is a vital need to rethink poverty and poverty policy on American Indian reservations. Little has changed in the past decade regarding job opportunities on the WRIR, despite Indians' improved education. This shortage of decent-paying jobs, coupled with the lack of tribal control over resources, is the major contributor to the persistence of poverty. The persistent poverty means that families have few if any investment resources and that the WRIR as an entity has little available capital for investment in economic development. Paternalism and ensuing powerlessness, resulting from the dependency of reservation Indians on external resources for both economic support and decision-making, are central to this argument. That fifty percent of all employed persons are in some fashion government employees is a telling statistic. Many of these individuals are working to address problems posed by high unemployment and persistent poverty. They are not in a position to effect structural change on the WRIR. Their success in gaining employment in an environment with chronic unemployment makes increased government employment appear to others to be a viable avenue out of poverty. It is not surprising that tribal offices seek to provide jobs by increasing their administrative scope. To call this shortsighted may be accurate but does not go far enough in proposing ways that poverty can be effectively addressed.

Several factors contribute to the pattern of employment, unemployment, and poverty. Cornell and Kalt (1990) suggest an obvious and significant reason to be insufficient economic resources, including natural resources, human capital, and access to financial capital. Location, infrastructure and characteristics of the native population all come into play as influences on the reservation economy. The irony for some reservations lies in decisions made more than a hundred years ago whereby the U.S. government located reservations in less than desirable lands which only later revealed hidden natural resources (coal, oil, gas or minerals) or eventual man-made resources (such as tourism and ski resorts) and, eventually, access to interstate highways or large populations that would support casino gambling.

These features are only partially relevant to the Wind River Indian Reservation.

Another feature of significance is tribal social organization, particularly tribal governance. The dilemma is that tribal governments, albeit sovereign, often lack stability and the capability to effectively mediate between conflicting claims, a factor that is essential to the viability of long-term investments. On the WRIR two tribes coexist in an occasionally uneasy alliance. Each has a tribal council, each has responsibility for tribal housing and Indian Health Services, and many other activities are done separately by each tribe rather than jointly. Economic development for the reservation as a whole, the responsibility of the Joint Business Council, has often been neglected, given the difficulty of forging and carrying out a joint strategy that would override conflicting claims and the particular interests of each tribe.

Relevance for Policy Formation and Grant-Funded Programs

With the capacity to work with both the WINDS and WINDS-2 data as active files, we have been able to provide answers to queries from sponsoring agencies (Wyoming Division on Aging, Wyoming Department of Family Services, Wyoming Department of Health and Social Services, the Indian Health Service, Bureau of Indian Affairs, and the Joint Business Council) as well as other groups needing to know about the current status of the population on the WRIR, changes through time, and the impact of social programs. We anticipate maintaining this data set for several years in order to respond quickly with accurate information for those needing it in their day-to-day work and for grant writing and policy formation.

WINDS and WINDS-2 data sets provide a valuable tool for locating and directing attention and resources to various categories of people on the WRIR. It will be especially valuable in efforts to improve transportation, insure public safety, provide services to the elderly and pre-school children, and improve environmental protection. These data will interface with ongoing research projects conducted by the University of Wyoming Water Research Center. It will also provide an important check on the information gathered in the 2000 Census.

While the principle motivation for carrying out the WINDS-2 project was to provide support to those working on the WRIR and agencies working with people on the WRIR, valid academic interests exist in our seeking to reassemble the WINDS data and create the matched panel data set. Many questions in the poverty literature can be addressed with this information. Spatial mapping of poverty and unemployment enhance our ability to evaluate the relationship between space and life chances. Here, the interest is in the permanency of physical space as a factor in poverty where poverty is a trait of a neighborhood in the face of physical mobility by households. The role of per capita payments over time is assessed and raises the question: Do per capita payments engender dependency? What role have external agencies such as Indian Health Service, Bureau of Indian Affairs, Fremont County Government and State agencies played in perpetuating or remediating poverty? Is there a threat to families, or is there an opportunity or need to alter this role, under the new federal welfare guidelines? And finally, what policies of economic and community development can be pursued, given the picture of the WRIR presented in our work.

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