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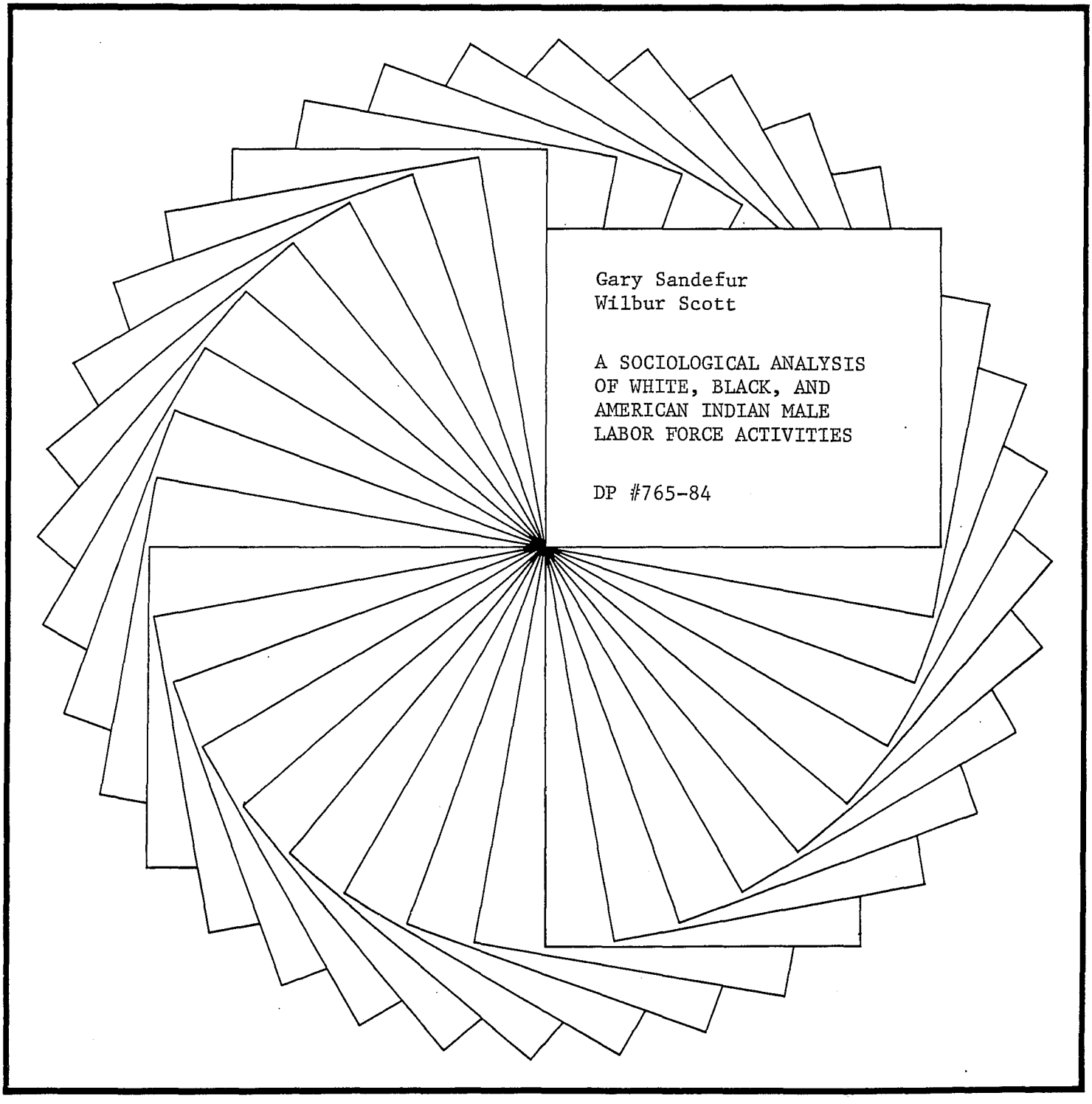

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A Sociological Analysis of White, Black, and American Indian Male Labor Force Activities

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Abstract

This paper examines the labor market activities of black, white and American Indian males from a sociological perspective. The results indicate that though American Indians and blacks have less favorable labor market outcomes than whites, the reasons that account for these differences are not the same for the two minority groups. In particular, Indians seem to suffer more from poor health and geographical isolation than blacks, whereas blacks experience more discrimination. Sociological theories provide a useful substantive framework for interpreting these different experiences.

A Sociological Analysis of White, Black, and American Indian Male Labor Force Activities

Though American Indians are generally recognized as one of the most disadvantaged and underpriveleged groups in American society, relatively little is actually known about their socioeconomic condition in general or about a key determinant of this condition--their activities in the labor market. One reason for the lack of attention by researchers and policy makers is that American Indians are one of the smallest of American minority groups. According to the 1980 Census, American Indians constitute only .6 percent of the U.S. population (U.S. Bureau of the Census, 1981). Consequently, reliable and useful data on American Indians are difficult to obtain and, further, Indians simply are less likely to attract attention from researchers, given the more obvious problems and concerns of larger, more visible minority groups.

The existing research on the labor force activities of American Indians suggests that their labor market experiences differ dramatically from those of blacks and whites. In an analysis of labor force participation and labor supply, using the 1976 Survey of Income and Education, Trosper (1979) reported that a greater percentage of Indian male heads of households (86 percent) participated in the labor force in 1975 than did their black counterparts (82 percent). The participation rate of white male households heads was 85 percent. The labor supply of Indian male household heads in 1975 (1619 hours worked) also exceeded that of black (1552) but not that of white (1829) men heading households. Finally, the number of weeks worked during 1975 for Indian men (35.7) was lower than that for white men (40.1) or black men (37.1).

In an analysis of wages of men aged 20-54, using the same 1976 Survey of Income and Education, Sandefur and Scott (1983) found that the average hourly wage of whites exceeded that of Indians and blacks, but that the difference between the two minority groups was not significant. Further, American Indians were more likely to experience health problems and to be employed in peripheral industries than were blacks and whites. Sandefur and Scott concluded that the characteristics of American Indian individuals (education, health status, and labor force experience) were the most important factors in explaining their lower wages, while for blacks there was a much greater "cost" or disadvantage associated with being a member of a minority group.

In this paper, we attempt to develop and test a sociological model of the determinants of labor force participation (working vs. not working) and labor supply (annual hours worked) of American Indians following, but elaborating upon, the model of wages developed and tested by Sandefur and Scott (1983). The major motivation for doing this is to fill another gap in the literature that compares the experiences of American Indians with those of whites and blacks. We are particularly concerned with pursuing two questions suggested by the earlier work of Trosper (1979) and Sandefur and Scott (1983): To what extent does the geographical isolation of Indians in reservation states and nonmetropolitan areas help account for their differing patterns of participation and supply compared to whites and blacks? In what occupations and industries are Indians concentrated, and how does that concentration help account for the different labor force participation rates and labor supply of Indians?

ALTERNATIVE THEORETICAL MODELS

Analyses of racial differences in labor market outcomes (e.g., wages, earnings, and prestige) and racial differences in the process through which these outcomes occur has a long and distinguished history in sociology as well as in economics. In this paper we discuss five alternative, in some ways competing and in some ways complementary, theoretical positions that may help explain racial differences in labor market outcomes: (1) status attainment and human capital theory; (2) the internal colonial model; (3) split labor market theory; (4) the new structuralism; and (5) the cultural deficiency approach.

The dominant theoretical paradigms used to guide past research have been the status attainment model in sociology and human capital theory in economics. Though these appraoches are by no means identical, they overlap considerably in their application and their results. In these models, labor force outcomes are viewed as determined by individual characteristics and resources. The characteristics include education, labor force experience, health, region, and marital status (Becker, 1974; Featherman and Hauser, 1978; Mincer, 1974). In this theoretical context, the comparatively unfavorable labor market outcomes of minority group members can be viewed as the results of two distinct factors: (1) members of minority groups are hampered by a comparative lack of individual resources--i.e., they enter the labor market with less education and poorer health than whites; (2) members of minority groups encounter discrimination in the marketplace. This discrimination can take two forms. First, members of minority groups may suffer simply from being a member of a minority group. In other words, there is a "cost" associated

with being black, Indian, or a member of any group which is not culturally dominant or is distributed less favorably in the opportunity structure. Second, minority group members may receive "lower returns" to such resources as experience and education in the labor market. These factors have been discussed in detail by Duncan (1969) in his classic analysis of the double disadvantage of being black in American society.

The alternative theoretical positions have not been as widely used in the analysis of racial differences in labor market outcomes. The internal colonial model argues that racial minorities in the United States (specifically blacks, Mexican Americans, and American Indians) were systematically excluded from participating in industrial capitalism. During the early and middle parts of the twentieth century, however, the demand for labor in the industrial Northeast and Midwest attracted a substantial portion of the black population to urban, industrialized areas, and some writers suggest that the black internal colony has moved to central cities (Clark, 1965; Wilhelm, 1970).

American Indians have not experienced extensive urban relocation, probably owing to three major factors. First, they were never part of the economy of the United States. From the beginning, the U.S. government sought to acquire Indian lands, natural resources, and precious metals and to relocate tribes in areas not desirable to whites. Blacks, on the other hand, were from the beginning an integral part of the American eocnomy. They first served as slaves, the key element in plantation agriculture, then as sharecroppers and tenant farmers in the post-bellum agricultural system, and finally as low-paid industrial labor in

the industrialized Northeast and Midwest. Second, the geographical isolation of American Indians was more pronounced than that of blacks. Indian reservations were usually located far from either industrialized areas or productive agricultural areas. Third, the quasi-sovereign status of American Indians led to a self-containment and independence from economic developments in the dominant white society. In effect, Indians were not forced to confront and deal with dominant white society to the same extent that blacks were. Indians remained a predominantly rural, isolated group. This isolation and exclusion is undoubtedly one source of their poorer socioeconomic status.

A related approach, split labor market theory, is based on the claim that minority group workers have occupied a distinct position in the American economy--that of cheap labor, in contrast with two other important groups, more expensive white labor and capitalists (Bonacich, 1972, 1975, 1976). Bonacich's (1976) analysis of black labor in contemporary capitalism suggests that many American blacks are confined to poorly paid, unstable jobs with little or no protection from fluctuations in the economy. As capital flees the Northeast and Midwest in search of cheaper labor in the South and Southwest and in other countries, the position of urban minority workers deteriorates. Better paid and trained white workers are more capable of obtaining the remaining jobs, or of following capital to other parts of the country. Further, expensive labor is more likely to be given assistance in moving.

There have been no attempts to apply this model to the situation of American Indians. Key features of this model may be applicable. Though American Indians were never fully integrated into the American economy,

that integration is now underway, facilitated by several factors: the relocation of American industry to the Southwest, providing American Indians with greater access to jobs; governmental policies initially implemented in the 1950s to encourage American Indian movement from reservations to urban areas (the 1980 Census indicates that for the first time in American history, over 50 percent of American Indians live in urban areas); and governmental policies initiated during the 1970s to assist tribes in attracting industries to reservations and rural areas. These factors have gradually increased the involvement of American Indians in the U.S. economy. Given their lack of education and skills, and lack of experience in industrial work, they may be filling some of the lower-paid positions traditionally filled by blacks in the industrial North. In other words, American Indians may serve as another source of cheap labor for American industry in the Southwest.

A third model, the new structuralism, is based on the assumption that the process of American economic development has resulted in a dual economy. The most popular variant of this approach divides the economy into two industrial sectors, the core and the periphery (Beck, Horan, and Tolbert, 1978). Some analysts view "the state"--i.e., local, state or federal governmental jobs--as a separate sector (Hodson, 1977). The core industries are generally characterized by a relatively few, larger, capital-intensive firms. Peripheral industries are less concentrated and have smaller, more labor-intensive firms. The relative wealth and power of core firms enables them to reward their workers better. A variant of this approach divides the economy into occupational sectors, usually primary and secondary occupations (Doeringer and Piore, 1971). Primary

occupations are those with comparatively high skill levels, high rewards, and employment stability. Secondary occupations are unskilled, with low rewards and high rates of turnovers and layoffs. The connection between the industrial and occupational sectoral schemes is that primary occupations should be more characteristic of the core than of the periphery, while secondary occupations should be more characteristic of the periphery than of the core.

At one time, researchers felt that the differences in labor force outcomes for blacks and whites were partially due to the overrepresentation of blacks in the periphery (Beck, Horan, and Tolbert, 1978). Subsequent research has shown that the apparent overrepresentation of blacks is a methodological artifact of the sectoral division scheme used (Daymont, 1980). There is, however, clear evidence that blacks in fact are overrepresented in secondary occupations (Bibb and Form, 1977).

Although there has been very little research on the sectoral distribution of American Indians, two characteristics suggest that they might be overrepresented in both peripheral industries and secondary occupations as compared to whites or even blacks. The geographical isolation of Indians means that their access to core industries is more limited than that of whites or blacks. Thus they are likely to be overrepresented in agriculture and other peripheral industries. Further, their lack of access to core industries should increase their concentration in secondary occupations such as common labor and service work. Second, American Indians have low levels of education compared to whites and are younger; they therefore have less labor force experience than blacks, and less education than whites. This should impede their ability to obtain primary occupational jobs in core industries.

In contrast to the status attainment model and the three alternative structural models of racial differences in labor force outcomes, which view differences as consequences of the interplay between the structure of the American economy and the characteristics of individuals, the remaining model, which we term the cultural deficiency model, views these differences as at least partly due to cultural and value differences between groups in American society. For example, Sowell (1975, 1981) suggests that black progress and labor market outcomes are hampered by a lack of emphasis on education in black homes and the black community, a historical lack of involvement in business, and an emphasis on immediate rather than delayed gratification. These differences have been produced by the historical experiences of blacks in the United States. Nonetheless, in Sowell's view, it is the presence of these values that prevents blacks from taking advantage of opportunities that are open to them.

Similar arguments have been made in regard to American Indians. Some scholars suggest that American Indian culture and values place a great deal of emphasis on family and community and much less emphasis on the work role than is true in white society (Wax, 1971). The geographical isolation of American Indians has allowed them to protect and retain traditional cultural values. Some observers, including a few prominent Indian leaders, have suggested that the special relationship between the U.S. government and Indians, which includes free medical care, housing assistance, and educational assistance, has produced an attitude of dependency on the part of American Indians that limits their desire to promote actively their own economic self-interests through hard work. Whether one finds such explanations politically palatable or not, they should be carefully examined, and accepted or rejected on the basis of evidence.

RESEARCH QUESTIONS

These theoretical perspectives suggest a number of factors that might help account for racial differences in labor force participation and labor supply. First, the status attainment model suggests that we "round up the usual suspects," which in this case would include labor force experience, education, health status, marital status, region, and race.

1. Labor force experience. Labor force experience is generally defined as the difference between age and years of education minus 6 (Labor force experience = Age - years of education - 6). A key assumption is that years not spent in early childhood or in school have probably been spent in the labor force. Consequently, part of the racial difference in labor force activities may be due to different levels of work experience.

2. Education. Both American Indians and blacks have lower levels of schooling than whites. Because education is an important determinant of labor force activities, it may account for part of the difference between the groups.

3. Health status. Because of their lower socioeconomic status and the lower quality of health care they receive, blacks are more likely to suffer from a limitation on their ability to work than are whites. Similarly, because of their geographical isolation as well as lower socioeconomic status and lower quality of health care, American Indians are more likely to suffer from a health limitation on their ability to work than are whites or blacks. This probably helps account for part of the differences in labor force participation and labor supply.

4. Marital status. Bowen and Finegan (1969) demonstrated that marital status increases the likelihood of participation in the labor force. Since American Indians and whites are equally likely to be married, this factor cannot help explain differences in the labor force activities of these two groups. Blacks, on the other hand, are less likely to be married than either American Indians or whites, and part of their lower levels of participation and supply may be due to this factor.

5. Region. The regional categorization schemes used by economists and sociologists in their analyses of labor force activities vary from quite simple to very complex. Generally, results show that residence in the South vs. the non-South significantly lowers labor force participation and labor supply. Since both blacks and American Indians are more likely to live in the South than are whites, this may help account for some differences.

6. Race. The effect of race can show up in two ways: there may be "cost" associated with being a member of a minority group, or members of minority groups may receive "lower returns" to education and experience than would whites; i.e., education and experience would have smaller effects on labor force participation and labor supply for American Indians and blacks than for whites. In this paper, we will examine only the second (additive) effect of race.

The alternative theoretical approaches suggest a number of other factors that we might tend to ignore if we relied exclusively on a status attainment or human capital approach. First, the internal colonial model of race and ethnic relations suggests that we pay closer attention to the geographical isolation of American Indians as a determinant of their

experiences in the labor market. To do this, we look at two separate but related pieces of evidence: the location of American Indians in states containing reservations and their location in smaller SMSAs and nonmetropolitan areas. Reservation states are predominantly rural and less populated than nonreservation states and consequently most have never been as integrated into the economy of the United States as the more populous states of the Midwest and Northeast. Further, those Indians who live in reservation states or in such nonreservation states as Oklahoma tend to reside predominantly in rural areas. This isolation in reservation states and rural areas may account for at least part of the difference in labor force participation and labor supply between American Indians and whites. Though regional factors have long been a part of human capital models of labor force outcomes, it is the internal colonial model that pinpoints the reason for the isolation of Indians: the historical process through which they were deprived of their land and resources and placed on the periphery of the American political and economic system.

The split labor market theory and the new structuralism suggest that Indians may be overrepresented in certain industries and occupations, and that this overrepresentation may account for differences in labor force participation and labor supply. In effect, the allocation of individuals into industries and occupations is an intervening mechanism which in turn affects the labor force participation and labor supply of individuals. Thus, the geographical isolation of American Indians and their exclusion from participation in the American economy has led to their overrepresentation in peripheral industries and secondary occupations.

Finally, the work of Sowell and others suggests that qualification is in order in interpreting the residual effect of race. Given the lack of explicit measures of discrimination and cultural differences, one must at least consider the possibility that Indian and black culture are partly responsible for different labor force outcomes.

DATA AND MEASURES

Data

The data used in this study were collected as part of the 1976 Survey of Income and Education (SIE) conducted by the U.S. Bureau of the Census. The SIE contains information on 151,170 households, selected independently from the 50 states and the District of Columbia. From these data, we use all Indian men, 10 percent of the white men, and 50 percent of the black men between the ages of 20 and 54. This sample yields 742 Indian men, 2516 black men, and 7722 white men. Following the procedure suggested by Featherman and Hauser (1978, Appendix B), sample statistics are weighted so that they may be generalized to the male population.

Measures

The dependent variables used in the analysis are as follows:

1. Participation: 1 = the individual worked at least some time during 1975; 0 = the individual did not work at all during 1975.

2. LNWage: the natural logarithm of the hourly wage of individuals. This variable is available only for those individuals who worked at least some time during 1975.

3. Hours: the number of hours worked during 1975. This variable is available only for those individuals who worked at least some time during 1975.

Fourteen independent variables are used:

1. Race: Black = 1 if the individual is black; 0 = otherwise. Indian = 1 if the individual is Indian; 0 = otherwise.

2. Prob(Not Work): the predicted probability of not working from a logistic regression of participation on a set of independent variables.

3. IMLNWage: the predicted (imputed) natural logarithm of the hourly wage of individuals from a regression of LNWage on a set of independent variables.

4. Education: years of education are used to construct a spline function. Education = years of education; Educ8 = years of education beyond 7 if Education is 8 or more, and 0 otherwise; Educ12 = years of education beyond 11 if Education is 12 or more, and 0 otherwise. This allows the effects of years of education to vary across three ranges: 0-7, 8-11, and 12 and above.

5. Experience: age and education are used to construct a spline function. Work experience = Age - Edcuation - 6. Exper10 = years of experience beyond 9 if Experience is 10 or more, and 0 otherwise. Exper20 = years of experience beyond 19 if Experience is 20 or more, and 0 otherwise. This allows the effects of years of experience to vary across three ranges: 0-9, 10-19, and 20 and above.

6. Health: 1 = some health limitation on the ability to work; 0 = no health limitation.

7. Reservation: 1 = living in a non-South reservation state at the time of the interview; 0 = living in a nonreservation state at the time of the interview. Reservation states include Alaska, Arizona, California, Colorado, Idaho, Iowa, Kansas, Michigan, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, Wisconsin, and Wyoming.

8. South: 1 = living in a southern state at the time of the interview; 0 = living in a nonsouthern state at the time of the interview. Southern states are Delaware, Maryland, West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Mississippi, Alabama, Arkansas, Louisiana, Oklahoma and Texas.

9. Large Metro: 1 = living in a metropolitan area with a population of 250,000 or more; 0 = otherwise. Residence in smaller SMSAs was not identified in the SIE microdata.

10. Mar Stat: 1 = married; 0 = otherwise.

11. Other Fam Earns: yearly earnings from employment of other family members.

12. Nonemp Income: yearly income from all nonemployment sources including transfer payments such as welfare.

13. Manual: 1 = employed in a manual occupation during 1975; 0 = employed in a nonmanual occupation. This information is available only for those individuals who worked at least part of 1975. In part of the analysis, we use a more detailed occupational breakdown.

14. Periphery: 1 = employed in a peripheral industry during 1975; 0 = employed in a core or state (governmental) industry during 1975. The core/peripheral scheme used here is that of Beck, Horan, and Tolbert

(1978). This information is available only for those individuals who worked at least some time during 1975. In part of the analysis, we use a more detailed industrial breakdown.

Methods

We utilize four separate techniques in the analyses below. First, we perform a multivariate analysis of variance (MANOVA) to determine if the means of the variables differ significantly between whites and the two minority groups taken together, and between the two minority groups taken separately. We also use MANOVA to examine differences in means of the variables for Indians across four residential categories: nonreservation state and nonlarge metropolitan area, nonreservation state and large metropolitan area, reservation state and nonlarge metropolitan area, reservation state and large metropolitan area. We compare reservation state means to nonreservation state means, large metropolitan means to nonlarge metropolitan means, and test for the interaction of these two residential variables.

Second, we perform a logistic analysis of participation in the labor force, defined in this analysis as working vs. not working. If we assume that participation (y) is an independent binary random variable taking values 0 or 1, with

$$(1) \qquad \Pr(y = 1) = p,$$

the general logistic regression model is as follows:

$$(2) \qquad \log \left(\frac{p}{1 - p}\right) = BX,$$

where X is a vector of independent variables, and B is a vector of coefficients. Thus, equation (2) represents a model that is linear in the logits. Maximum likelihood estimates of B are obtained and reported below.

Third, using the predicted probabilities based on the results of estimating equation (2), we perform an ordinary least squares (OLS) analysis of the determinants of wage corrected for selectivity bias (Berk, 1983; Heckman, 1979). This model can be represented as follows:

(3) LNWage = CZ,

where Z includes the predicted probability of not working [Prob(Not Work)], as well as some elements of X.

Finally, using the predicted or imputed LNWage, IMLNWage, in order to correct for possible errors in respondents' estimation of hours worked, and Prob(Not Work) to correct for selectivity bias, we perform an OLS analysis of annual hours worked. This model can be represented as follows:

(4) Hours = DV,

where V includes all elements of X, excluding experience. In effect, experience is assumed to affect the probability of working and wage, but not annual hours worked. This is done to deal partly with the endogeneity of wage. That is, wage is partly determined by hours worked, as well as being a determinant of hours worked. Consequently, an instrumental variable, experience, is required to identify the model. A technically more rigorous test would involve the use of two-state or

three-stage least squares. We plan to utilize these techniques in future work.

RESULTS

Initial differences in labor force participation and labor supply characteristics are presented in Table 1. A bivariate F-ratio, "Overall F" in the table, tests the relationship between the racial variable and subsequent labor characteristics. Two additional F-ratios pinpoint the locus of overall statistical significance by comparing white vs. nonwhite means and then black vs. Indian means.

Whites are more likely to have worked in 1975 (.93, or 93 percent) than are blacks (88 percent) or Indians (89 percent), and fewer whites that year lived below the poverty line (6 percent) than did blacks (14 percent) or Indians (16 percent). These differences between whites and nonwhites (the weighted average of the black and Indian figures) are statistically significant; i.e., the chances that these differences are due solely to sampling error are less than one out of a hundred. However, the differences between the black and Indian percentages for these two characteristics are not statistically significant; i.e., percentage variations this small are typical--exceed 5 percent--when sampling two groups who do not differ on these characteristics. Blacks and Indians also have similar levels of education (11.06 and 10.81 years) and of income from sources other than employment ($1046.16 and $1043.89). Whites, as a group, have a substantial advantage on both counts (12.71 years and $1317.28). Finally, blacks and Indians share important labor force characteristics: they are more likely than whites to be employed

Table 1

Means of Variables for White, Black, and Indian Men, Aged 20-54

Dependent Variables	Race or Ethnicity			Comparisons		
	White	Black	Indian	Overall F[a]	White vs. Nonwhite	Black vs. Indian
Poverty	.06	.14	.16	116.17**	106.29**	2.50
Work 1975	.93	.88	.89	38.18**	38.14**	0.64
Health Limit	.10	.14	.18	27.87**	50.66**	7.97**
Married	.84	.70	.85	132.26**	39.04**	57.59**
Large Metro	.66	.80	.46	183.36**	6.99**	264.54**
South	.31	.49	.41	173.34**	149.66**	8.73**
Reserv State	.32	.15	.42	194.34**	9.69**	168.08**
Other Fam Earn ($)	4282.28	3615.67	2882.78	21.57**	39.21**	6.18**
Non Emp Inc ($)	1317.28	1045.16	1043.89	10.58**	12.53**	0.00
Experience (yrs)	17.74	19.72	17.64	37.15**	10.67**	16.31**
Education (yrs)	12.71	11.06	10.81	361.03**	470.73**	2.91
N	7722	2516	742			
Periphery	.36	.36	.49	20.76**	17.30**	41.51**
Manual	.53	.76	.77	247.01**	307.26**	0.53
Hours 1975	2097.04	1913.89	1946.99	102.95**	104.64**	1.53
Earn 1975 ($)	12,969.06	9101.04	9847.34	187.28**	209.83**	0.34
Wage (hrly $)	6.34	5.08	5.32	22.99**	27.71**	0.01
N[b]	7218	2185	654			

Table 1, continued

Source: Survey of Income and Education, 1976.

Note: Dependent variables are defined in the text.

[a]Test of bivariate relationship between race or ethnicity and the dependent variable.

[b]Data for this second set of variables are reported for workers only.

* p less than .01.
** p less than .001.

in manual occupations (76 percent, 77 percent, vs. 53 percent), work fewer hours than whites (1913.89, 1946.99 vs. 2074.04), and earn less than do whites ($9101.04, $9847.34 vs. $12,969.06).

On the other hand, Indians and blacks differ from whites, and from each other, in several important respects. Indians are the most likely of the three groups to experience health problems which impair employment (18 percent vs. 10 percent, 14 percent), to have the least amount of income generated by other family members ($2882.78 vs. $4282.28 vs. $3615.67), and to be employed in the periphery of the labor market (49 percent vs. 36 percent, 36 percent). They also are the most likely to reside in a state having a reservation (42 percent, vs. 32 percent, 15 percent).

Finally, Indians are the least likely to reside in large metropolitan areas (46 percent vs. 66 percent, 80 percent).

Table 2 contains a description of the industrial and occupational characteristics of whites, blacks and Indians. A quick scan of the industries in which each are employed reveals that the distributions of the three groups are remarkably similar. The percentages of blacks and Indians who did not work in 1975 (12 percent and 14 percent) are slightly higher than the corresponding figure for whites (7 percent); the greatest divergence in the figures for those who did work occurs in the percentages employed in construction trades: 10 percent for whites, 7 percent for blacks, and 15 percent for Indians. Other than that, the percentages are virtually the same. Blacks and Indians, however, do differ from whites in the kinds of work they do within these industrial categories. About a third of whites (32 percent) were employed in professional and

Table 2

Industrial and Occupational Distribution of White, Black, and Indian Men, Aged 20-54

	White		Black		Indian	
A. Industries						
No Work	.07		.12		.11	
Agriculture	.03		.03		.06	
Mining	.01		.00		.02	
Construction	.10		.07		.15	
Dur Manuf	.17		.17		.15	
Nondur Manuf	.09		.10		.09	
Trans; Utilities	.08		.11		.09	
Wholesale	.05		.03		.02	
Retail	.11		.09		.09	
Finance	.05		.03		.02	
Service	.17		.17		.12	
Government	.07		.08		.06	
B. Occupations						
No Work	.07		.12		.11	
Professionals	.17	.32	.08	.14	.07	.15
Managers	.15		.06		.08	
Sales	.06		.01		.02	
Clerical	.06		.07		.04	
Crafts	.22	.37	.14	.41	.27	.51
Operatives	.15		.27		.24	
Laborers	.04		.10		.08	
Farm Mgrs	.02		.00		.02	
Farm Lbrs	.01		.02		.02	
Service	.06		.12		.06	

managerial slots; the corresponding figures for blacks and Indians are 14 percent and 15 percent. Conversely, over half of Indians (51 percent) hold jobs as craftsmen or operatives and 41 percent of blacks are so employed. In comparison, only about a third of whites (37 percent) fall into these two occupational categories.

The general picture which emerges from these two tables is that blacks and Indians incur similar disadvantages in important labor supply and labor force participation characteristics. However, they differ from each other primarily in terms of residential distribution: blacks are essentially located in the South and in large metropolitan areas, while Indians reside in less metropolitan areas and in states outside the South. Perhaps this residential difference accounts for much of the overrepresentation of Indians in the periphery of the labor market, an overrepresentation which may be defined in contrast with either blacks or whites. Blacks are as likely as whites to be employed in the core of the labor market and they are more likely than either whites or Indians to live in large metropolitan areas, which generally confers economic advantage. This residential pattern of blacks and Indians raises an important theoretical and practical question: does the urbanization of Indians produce the advantages that whites enjoy, or simply result in geographical relocation without substantial improvement in economic position, as has been the fate of blacks?

Some clues to answer this question may be gained by comparing the labor supply and labor force characteristics of Indians residing in various locations. Table 3 contains such figures for Indians residing in both reservation and nonreservation states and in both large metropolitan

Table 3

Means of Variables for Four Residential Categories of Indian Men, Aged 20-54

Dependent Variables	Nonreservation		Reservation			Comparisons		
	Non-Lrg Metro	Lrg Metro	Non-Lrg Metro	Lrg Metro	Overall F[a]	Non-Res vs. Res	Non-Lrg vs. Lrg Metro	Interact
Poverty	.14	.09	.25	.18	5.31**	12.18**	3.57*	0.16
Work 1975	.89	.90	.88	.89	0.17	—	—	—
Health Limit	.21	.17	.24	.10	3.84**	0.69	8.13**	1.72
Married	.94	.82	.82	.76	9.70**	14.79**	13.40**	0.72
Other Fam Earn ($)	2917.05	2641.28	3418.29	2606.79	1.15	—	—	—
Non Emp Inc ($)	910.72	921.11	1586.61	891.22	5.41**	5.05*	4.60*	6.58*
Experience (yrs)	17.14	18.59	19.70	15.51	4.40**	0.08	1.41	11.71**
Education (yrs)	10.28	11.39	10.01	11.70	10.91**	0.39	30.93**	1.41
N	141	99	405	97				
Periphery	.63	.34	.54	.58	11.51**	1.86	14.70**	16.88**
Manual	.78	.80	.79	.70	1.68	—	—	—
Hours 1975	2036.37	2041.05	1943.58	1871.91	2.78*	8.26**	0.06	1.79
Earn 1975 ($)	7,996.86	10,512.94	7,489.54	10,284.14	7.99**	0.02	23.89**	0.06
Wage (hrly $)	4.53	5.56	4.23	5.21	4.07**	0.052	11.69**	0.01
N[b]	126	81	362	85				

[a]Test of bivariate relationship between four residential categories and dependent variable.

[b]Data for this second set of variables are reported for workers only.

*p less than .05.
**p less than .01.

and smaller or nonmetropolitan areas. Indians who live in nonreservation states are less likely to live below the poverty line (14 percent, 9 percent vs. 25 percent, 18 percent) and to work more hours (2036.37, 2041.05 vs. 1943.58, 1871.91 hours) than Indians residing in states with reservations. Those who have taken up residence in large metropolitan areas report fewer debilitating health problems (17 percent, 10 percent vs. 21 percent, 24 percent), have completed more years of schooling (11.39, 11.30 vs. 10.28, 10.01), and accumulated in 1975 more earnings ($10,512.94, $10,284.14 vs. $7996.86, $7489.54) than Indians living in less metropolitan areas. Further, the combination of large metropolitan areas and location in a nonreservation state is the setting where Indians are least likely to be employed in the peripheral sector (34 percent vs. 63 percent, 54 percent, 58 percent). However, these Indians are not less likely than those Indians living in other areas to work in nonmanual occupations. Hence, the initial evidence on the question of the consequence of residence for Indians is mixed: residence carries with it an important contextual effect for Indians although, as for blacks, it does not erase Indian-white differences.

The Determinants of Working vs. Not Working

The comparison of means given above clearly indicates that black and American Indian men are less likely to work than are white men. Our first major concern is to identify which factors might help explain these differences in the likelihood of working. Table 4 contains a logistic regression model of the determinants of working at least some part of 1975. This model allows us to examine the extent to which human capital

Table 4

Logistic Regression Model of the Determinants of Working vs. Not Working

Variables	Coefficient	T-Statistic
Intercept	1.302	
Black	-.765	-8.74
Indian	-.311	-2.32
Experience	.035	8.41
Education	.082	5.83
Health	-1.637	-18.69
Reservation	-.192	-2.15
South	.186	1.83
Large Metro	.057	.73
Mar Stat	.018	.19
Other Fam Earns	.044	4.47
Nonemp Income	-.118	10.53
Chi-squared test of goodness of fit (df = 11)	713.99 ($p < .001$)	

and location help explain the differences in labor force participation between the two minority groups and whites. Labor market factors cannot be used in this part of the analysis since we have no information on occupation and industry for individuals who did not work in 1975. Family financial status is included as a control, since research in economics shows that this is an important determinant of the decision to work. The coefficients in this table represent the effects of the variables on the log of the odds ratio. In other words, a negative effect indicates that the probability of working declines as the variable increases; a positive effect indicates that the probability of working increases as the variable increases. We use the .05 level of significance ($t \cong \pm 2.00$) as the criterion for determining statistical significance.

The chi-squared test of goodness of fit indicates that this model represents a significant improvement over the assumption that each individual has an equal probability of participating in the labor force. The results show that American Indians and blacks continue to have significantly lower probabilities of participating in the labor force when human capital variables, locational factors, and family financial status are included in the analysis. The remaining variables are assumed to have linear effects on the logits. Consequently, the spline functions for education and experience are not included in this model.

The effects of the remaining variables are what one would expect, given past research on labor force participation and the theoretical discussion above. Among the three human capital measures, both years of experience and years of education have positive effects (.035 and .082 respectively). Health, which is defined as a self-reported limitation on

the ability to work, has a negative effect (-1.637), and according to the t-statistic, is the most significant determinant of whether an individual works or not.

Only one of the locational factors, reservation, has a significant effect on the probability of working (-.192). Individuals who live in a reservation state are significantly less likely to work than those who live elsewhere. This probably reflects the relative lack of industrialization of most reservation states. Neither living in the South nor in a large metropolitan area (Large Metro) has a significant effect on the probability of working.

The results for the measures of family financial conditions indicate that such conditions are important determinants of whether individuals work or not. Though marital status (Mar Stat) does not have a significant effect on the probability of working, the earnings of other family members does (.044). On the other hand, the probability of working decreases with the amount of unearned income (Nonemp Income) available in the household (-.118). The t-statistic indicates that this is the second most significant determinant of the probability of working.

The results show that those variables on which the three groups have different statistical values, such as education, health, reservation residence, and nonemployment income, are important determinants of the probability of working, but that they do not completely explain racial differences in the probability of working. Consequently, there must be other aspects of being black and American Indian in American society that explain the remaining differences.

There are at least four possible explanations of the residual racial differences. First, there may be other factors, unmeasured in this analysis, which help explain these differences. The internal colonial model suggests that this could include residence on a reservation in the case of American Indians and residence in a central city for blacks. Second, the effects of the human capital variables, locational variables, and family financial conditions may differ across the three groups. For example, the effects of education on labor force participation may be smaller for blacks and Indians than for whites. Third, the presence of a racial effect may be due to discrimination in employment practices. That is, blacks and American Indians may have fewer opportunities for employment, regardless of their other characteristics. Finally, the cultural deficiency model suggests that blacks and American Indians may choose to work less. This could be produced by cultural differences between these two groups and whites. Unfortunately it is impossible to determine which of these explanations is most appropriate with the data available in the SIE.

The Determinants of Wage

Because those who work have a market wage, it is possible to estimate the determinants of wages for working individuals. Unfortunately, individuals who do not work are usually not included in the analysis of wages. As Heckman (1979) and Berk (1983) have pointed out, this can lead to biased estimates of the determinants of wage. To correct for this possible bias, we have followed the procedure suggested by Berk.

The estimates of the probability of not working for all working individuals are saved from the analysis presented in Table 4 and included in the OLS equation for wage, which is then estimated using working individuals. Table 5 contains estimates from both an uncorrected and corrected equation, for purposes of comparison.

The results in Table 5 indicate that there are no real differences in the estimates in the uncorrected and corrected equations. The correction factor, Prob(Not Work), does not have an effect on wage. In other words, the probability of not working does not have a significant effect on the wage earned by an individual, when other variables are included in the analysis. Since there are no real differences in the two equations, we will confine our attention to the corrected equation.

The results indicate that once other variables are included in the analysis, blacks continue to have significantly lower wages than whites, but the difference between American Indian and white wages disappears. This is consistent with our earlier research (Sandefur and Scott, 1983) using these data. Consequently, we can conclude that the difference between American Indian and white wages is explained by differences in levels of human capital, locational factors, and labor market factors. However, the difference between blacks and whites is not explained by these factors.

Each of the human capital variables has a significant effect on wage. The spline function for experience can be interpreted as follows. The log of the wage increases .051 with each year of experience up to 10 years of experience. With each additional year of experience between 10 and 19, the log of the wage increases .014 (.051 - .037), and with each

Table 5

The Determinants of LN(Wage) for Men, Aged 20-54

Variables	Uncorrected Coefficient	Uncorrected T-Statistic	Corrected Coefficient	Corrected T-Statistic
Intercept	.393	--	.350	--
Prob(Not Work)	--	--	.248	1.69
Black	-.165	-12.17	-.178	-11.38
Indian	-.011	-.41	-.017	-.60
Experience	.050	15.99	.051	16.07
Exper10	-.037	-7.97	-.037	-7.94
Exper20	-.008	-2.75	-.008	-2.72
Education	.052	5.45	.054	5.59
Educ8	-.006	-.47	-.007	-.47
Educ12	.018	2.20	.017	2.15
Health	-.201	-9.85	-.250	-7.06
Reservation	-.032	-2.22	-.036	-2.43
South	-.135	-9.87	-.132	-9.52
Large Metro	.150	11.48	.151	11.56
Mar Stat	.156	10.31	.159	10.43
Manual	-.057	-3.98	-.057	-3.97
Periphery	-.082	-6.83	-.082	-6.83
R^2	.24		.24	

additional year of experience beyond 20, the log of the wage increases .006 (.051 - .037 - .008). In other words, wage increases with experience but at a decreasing rate. Similarly, the effects for education indicate that each year of education through 7 increases the log of the wage by .054. Each additional year of education from 8 through 11 increases the log of the age by .047 (.054 - .007), though the difference in effects in these two ranges is not significant. Each additional year of education beyond 11 increases the log of the wage by .064. Thus, the effect of each additional year of education on wage increases once an individual finishes high school. The final human capital variable, health, lowers the wage (-.250).

All locational factors have significant effects on wage. Individuals who live in reservation states (-.032) and individuals who live in the South (-.135) have significantly lower wages than individuals who live elsewhere. Individuals who live in large metropolitan areas have significantly higher wages (.150) than individuals who do not live in such areas.

We assume that one's family financial situation has no effect on one's wage. However, we did include marital status in the model. Married individuals earn significantly more than unmarried individuals (.156). Finally, both measures of labor market placement have significant effects on wage. Individuals who work in manual jobs earn significantly lower wages (-.057), as do individuals who work in peripheral industries (-.082).

The most important finding in Table 5 is that, once we control for human capital variables, locational factors, and labor market placement,

black men earn less than white men, whereas the difference between Indians and whites disappears. Thus there is no residual effect of being Indian on wage, whereas there is a residual effect of being black. Further, the results indicate that the locational factors suggested by the internal colonial model and the labor market factors suggested by the new structuralism are important determinants of wage that might be ignored if one relied exclusively on the human capital and status attainment traditions to guide the research. These results raise two questions: why do these variables explain the Indian/white difference, but not the black/white difference? What explains the residual difference between blacks and whites? Sandefur and Scott (1983) devote considerable attention to these issues. The answer to the first question would seem to be that there are few differences in the way the wages of whites and Indians are determined in the American labor market, once we account for the lower levels of human capital, geographical isolation, and overrepresentation of American Indians in less favorable occupations and industries. The process through which black and white wages are determined would seem to differ dramatically. The reason for this, and the answer to the second question, might lie in any or all of the four possible explanations discussed earlier in the analysis of labor force participation: (1) unmeasured characteristics on which blacks and whites differ; (2) different effects of the variables in Table 5 for blacks and whites; (3) discrimination experienced by blacks, but not by American Indians; and (4) culturally transmitted characteristics that impede the ability of blacks to compete in the labor market.

Explanation 1 is a possibility, since the SIE provides no measures of some important determinants of wage such as on-the-job training or actual

employment experience. Sandefur and Scott (1983) examined explanation 2, and found that blacks do receive lower returns to education. However, there continues to be a disadvantage of being black even when the effects of the variables are allowed to vary. Explanation 3, discrimination, is the usual interpretation of this residual effect. Explanation 4 is a possibility that cannot be ruled out on the basis of evidence available to us. It does not seem really appropriate, however, since anthropological evidence indicates that Indian culture differs from white culture much more than does black culture. It is therefore hard to escape the conclusion that blacks experience a great deal of current discrimination in the wage-setting process that is not experienced by American Indians. The past discrimination experienced by American Indians has placed them in isolated regions of the country, with few opportunities to work in core industries or nonmanual occupations, has promoted poor health, and has led to inadequate educational opportunites. So it is the internal colonization and past discrimination experienced by American Indians and the current discrimination experienced by blacks that help explain their lower wages.

The Determinants of Annual Hours Worked

The third feature of labor force activities examined in this analysis is the number of annual hours worked. Table 6 contains four alternative specifications of the determinants of annual hours worked. Model I assumes that the only determinant of hours is race. The results for this model indicate that the number of hours worked during 1975 is significantly lower for blacks (-183.18) than for whites, and also significantly

Table 6

The Determinants of Annual Hours Worked for American Indian, Black, and White Men, Aged 20-54

Variables	Model I[a]	Model II[b]	Model III[c]	Model IV[d]
Intercept	2097.06	2208.16	1041.89	847.95
Prob(Not Work)	--	-1757.24 (-18.23)	--	1008.44 (4.34)
Black	-183.18 (-12.03)	-86.27 (-5.43)	22.04 (1.32)	-18.34 (-.96)
Indian	-150.17 (-4.55)	-69.69 (-2.13)	-82.43 (-2.62)	-107.18 (-3.36)
Education	--	--	-14.59 (-1.34)	-16.91 (-1.56)
Educ8	--	--	19.59 (1.24)	19.38 (1.23)
Educ12	--	--	-44.65 (-4.85)	-44.40 (-4.83)
Health	--	--	-64.77 (-2.67)	-229.81 (-5.10)
Reservation	--	--	64.38 (3.86)	54.99 (3.27)
South	--	--	157.40 (9.31)	184.88 (10.25)
Large Metro	--	--	-189.45 (-11.73)	-201.08 (-12.29)
Mar Stat	--	--	110.33 (5.41)	94.15 (4.54)
Other Fam Earns	--	--	-2.33 (-1.64)	.24 (.16)

--table continues--

Table 6, continued

Variables	Model I[a]	Model II[b]	Model III[c]	Model IV[d]
Nonemp Income	--	--	-44.61 (-17.23)	-56.02 (-15.19)
IMLNWage	--	--	782.66 (19.44)	893.25 (18.76)
Manual	--	--	-139.98 (-8.07)	-130.52 (-7.74)
Periphery	--	--	9.11 (.64)	17.42 (1.21)
R^2	.02	.05	.14	.14

[a]Assumes that race is the only determinant of hours worked.

[b]Controls for selectivity bias.

[c]Includes all variables, without controls for selectivity bias.

[d]Full model, controlling for selectivity bias.

lower for American Indians (-150.17) than for whites. This model explains only 2 percent of the variance in hours worked.

Model II is the same as Model I, except that we have controlled for selectivity bias. The results for Model II indicate that the higher the predicted probability of not working, the fewer hours worked in 1975. Further, the addition of this variable to the equation substantially reduces the effect of race. However, both blacks (-86.27) and American Indians (-69.69) worked significantly fewer hours than whites in 1975. This model explains 5 percent of the variance in hours worked.

Model III is the full model of hours worked, without controlling for possible selection bias, whereas Model IV is the full model of hours worked, including a control for possible selection bias. We discuss these two models simultaneously, noting any substantial differences in the effects of variables in the two models. First, the effect of the Prob(Not Work) in Model IV is significant and positive (1008.44). This indicates two things: selection bias may be important in an analysis of annual hours worked; and there are other variables in the analysis which cause the effect of the bias variable to shift from negative in Model II to positive in this model. In fact, when Model IV is estimated with the omission of Health and Nonemp Income, the effect of the bias variable is negative and significant. However, it is not the coefficient of the selectivity bias variable, but instead the sensitivity of the other variables in the model to the inclusion of this term, that is important.

In both Models III and IV, the difference between blacks and whites is insignificant. This means that including human capital variables, locational variables, family financial conditions, and labor market

variables in the explanatory equation accounts for lower black labor supply. On the other hand, the labor supply of Indians and whites continues to differ significantly (-107.18). That is, even when other factors are accounted for, Indians work fewer hours than whites. In fact, the addition of these factors to the explanatory equation in no way reduces the difference between Indians and whites.

The early years of education have no effects on labor supply. Each year of education prior to grade 8 decreases labor supply by 16.91 hours, but this effect is not significant. The years of education between grades 8 and 11 increase labor supply by 2.47 hours, but this effect is also not significant. Years of education through high school and beyond decreases hours by 41.93 hours per year, and this effect of education is significant. The effect of the other human capital variable, health, differs substantially in the corrected and uncorrected models, being substantially larger in the corrected model (-229.81), which indicates that one would conclude that health is less important than it really is if one did not control for selectivity bias.

Each of the locational variables has a significant effect on annual hours worked. Individuals in reservation states (54.99) and in the South (184.88) work significantly more hours than individuals in nonreservation states outside the South. On the other hand, individuals in large metropolitan areas work significantly fewer hours (-201.08). Among the family financial variables, both marital status and nonemployment income have significant effects on annual hours worked. Married men work more hours (94.15) than unmarried men. Each thousand dollars of nonemployment income reduces annual hours worked by 56.02. Other family earnings are not a significant determinant of annual hours worked.

Two of the labor market factors, IMLNWage and Manual, have significant effects on annual hours worked. Each additional dollar per hour in wages increases hours worked by 893.25. Manual workers work 130.52 hours less per year than do nonmanual workers. Peripheral-sector workers do not differ significantly from core-sector workers in hours worked.

In sum, the variables included in Models III and IV account for much of the difference in black and white labor supply. This is because blacks have significantly lower levels of three key factors that increase hours worked--they have lower wages, are less likely to reside in reservation states, and less likely to be married. The difference in wage would seem to be particularly important. Further, blacks have significantly higher levels of three key factors that decrease annual hours worked--poor health, residence in large metropolitan areas, and location in manual occupations. Though American Indians have lower wages and poorer health than whites, and are more likely to be in manual occupations, these differences in key determinants of labor supply do not explain the Indian/white difference.

As with labor force participation and wage, there are four possible explanations of the remaining difference between whites and Indians. First, Indians may differ from whites in important characteristics that are unmeasured in this analysis. For example, the lower supply of Indians may be due to their isolation on reservations and/or in rural areas, where there are simply fewer opportunities to work. Second, some variables may have different effects for Indians than for whites--e.g., American Indian labor supply may not be as responsive to wage as is white labor supply. Third, American Indians may experience discrimination in

the labor market that leads to lower labor supply. However, this explanation is less plausible if they are not discriminated against in the wage-setting process. Finally American Indinas may simply choose to work less. This would agree with some anthropological analyses of Indians which show that Indians place more emphasis on nonwork roles than white Americans. Lower Indian labor supply would therefore not be totally due to Indian disadvantages, but also to different cultural priorities and individual choices. However, there is no way to determine definitively if this is the case without additional information that is unavailable in the SIE.

SUMMARY AND CONCLUSIONS

The results of this paper clearly show that not only do blacks and Indians differ in particular characteristics from whites, but that the two minority groups differ in statistically significant and substantively important ways from each other. The racial differences shown in this analysis include the following:

1. Blacks and American Indians are likely to work less, earn lower wages, and work fewer hours than whites. They have lower levels of education and are more likely to have health limitations on their ability to work. American Indians are more likely to have health limitations than blacks, are less likely to live in a large metropolitan area, and are more likely to be in a peripheral industry than are whites or blacks. Thus, the level of human capital and the location of American Indians would seem to place them at a greater disadvantage than blacks. These differences in the levels of human capital and in geographical and labor

market location of the two minority groups can be traced to their different historical experiences. In effect, American Indians remained isolated and were excluded from participation in the American economy for a more extensive period than blacks.

2. The effect of the isolation of American Indians can also be observed in the levels of human capital, labor market location, and labor market activities of different groups of Indians. American Indians who live in nonreservation states are less likely to live below the poverty line, and they work more hours than Indians who live in reservation states. Those Indians who live in large metropolitan areas report fewer health problems, are more educated, and make more money than those who live in smaller metropolitan or nonmetropolitan areas. Consequently, there seem to be real advantages for Indians associated with living in areas where Indians traditionally have not lived. There may also be some selectivity in the migration of American Indians; the youngest and most educated Indians may be those who leave rural and/or reservation areas.

3. The differences in labor force participation of the two minority groups and whites are not completely explained by differences in human capital, location, or family financial status. Racial differences persist after controlling for these factors. These residual differences could be due to unmeasured determinants of labor force participation, to differences in the effects of the determinants measured, to discrimination, or to culturally induced individual choices by blacks and Indians that promote nonparticipation.

4. The difference between the wage of American Indians and whites disappears when human capital measures, geographical location, and labor

market location are included in the wage equation. However, the difference between blacks and whites persists. Again, there are four possible explanations of this residual difference.

5. The difference between the annual hours worked of blacks and whites disappears when human capital measures, geographical location, labor market location, and family financial status are included in the analysis. The difference between Indians and whites persists. Again, there are four possible explanations of this residual difference.

If we consider all of these results together, it is possible to arrive at some conclusions regarding the comparative labor force activities of these three groups of prime-aged males. First, the different historical experiences of blacks and Indians, including their different internal colonization experiences, the timing of their integration into the American economy and the fact that Indians have remained a very rural population, have produced measurable differences in the characteristics and labor force activities of these two groups. Consequently, simple explanations of labor market outcomes in terms of discrimination or lower human capital cannot be indiscriminately applied to the situations of these two, or for that matter any other, minority groups in American society. Researchers must be aware of the historical context within which groups have operated in order to understand contemporary racial inequality.

Second, this research indicates that sociological theoretical perspectives other than status attainment theory and human capital theory have important applications in the study of labor force activities. In particular, the internal colonial model and the new structuralism seem to

be important for helping us understand the different situations of blacks and American Indians.

Conservatives and liberals will continue to argue over whether residual differences in labor market outcomes are due to discrimination or culturally induced individual choices. The evidence in this paper does not allow one to choose between these alternative explanations, or the other two less emotionally charged explanations. However, it is difficult to believe that blacks choose to earn less, or that they purposely engage in activities that lower their wages relative to whites. Consequently, discrimination seems to be the most likely explanation of this difference. On the other hand, the view that Indians choose to work less is supported by much anthropological research on traditional Indian cultures. We do not and cannot come to such a conclusion based on our evidence, but we do admit that it is a possibility.

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