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Discrimination and Human Capital: A Challenge to Economic Theory & Social Justice

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This article reports findings of a study using the National Longitudinal Survey of Youth (NLSY79) to test the rational choice theory that discrimination discourages investments in human capital. Nearly 60% of the study sample (N=5585) reported job-hiring discrimination (race, nationality, sex, or age) between 1979 and 1982 and they were found to invest more in job training programs and additional schooling between 1983 and 1998 than those reporting no such discrimination. White males were found to have the greatest advantage over black males and females in regard to job training and over black females in regard to additional schooling. Findings suggest that appeals to affirmative action policies and programs based on race and sex remain warranted.

This article assesses the effects of perceived discrimination on investments in human capital. It uses a nationally representative sample of youth ages 14–22 in 1979 to test the theory that in job markets containing discrimination, blacks and women will invest relatively less in programs designed to augment human capital, such as education and training. At issue is how market mechanisms or transactions of their own accord affect the stock of human capital upon which the country's productive capacity depends. To the extent blacks and women in general and blacks and women who experience job-hiring discrimination in particular invest less in education and training than whites in general and white males in particular, as this rational choice theory predicts, then a case can be made for non-market mechanisms such as

affirmative action to ensure greater access to programs designed to increase human capital and thereby level the playing field.

In the preceding scenario, markets fail to stop discrimination and may result in a vicious circle. Because of discrimination, members of the relevant groups perceive that their investments in human capital do not pay relative to others and they are less likely to invest in human capital; because of this lower investment, discrimination persists or increases because its statistical rationality increases; and because of this effect, investments decrease, and so on. There is a total net loss to society since less investment in human capital results in lower productivity. Intervention into the market is necessary to break the circle or end the spiral. Social justice makes economic sense to the extent affirmative action policies and programs or other such non-market interventions increase opportunities for investments in human capital that in turn enhance the productive capacity of the nation (Arrow, 1972; Lundberg & Startz, 1983; Sunstein, 1997).

Method

Data and Sample

Data for the study were obtained from the 1979 cohort of the National Longitudinal Survey of Youth (NLSY79) which comprised a representative sample of 12,686 noninstitutionalized youth in the U.S. aged 14 to 22 in 1979 when first interviewed. Respondents were interviewed annually through 1994 and in 1996 and 1998 and asked a range of questions regarding labor market experiences and family characteristics. The NLSY79 sample was deemed particularly suitable for this study because employment-related discrimination questions were included in the 1979 and 1982 surveys, while the cohort was still relatively young. It thereby afforded an opportunity to assess the effects of discrimination on human capital investment as the cohort matured and careers developed.

For the 1998 survey, 8,399 respondents were interviewed, a 66.2% unweighted retention rate (79% weighted). Respondents in 1998 differed on some sociodemographic measures from those in 1979, with the major difference in annual family income (\$16,726 vs. \$10,195). In 1979 they were also slightly younger (17.6 vs.

17.9 years old), less educated (10.3 vs. 10.5 years of schooling), from larger families (4.70 vs. 4.26 members), with proportionately more blacks (14.3% vs. 13.6%, weighted) and proportionately more women (51.4% vs. 49.2%, weighted). Differences in part reflected cessation of interviews with the 1643 members of the economically disadvantaged, non-black, non-Hispanic supplemental sample beginning in 1991. Documentation about the national sample was found in the *NLS Handbook 1999* (Center for Human Resource Research, 1999a) and the *NLSY79 User's Guide 1999* (Center for Human Resource Research, 1999b).

The study sample (n=5585) included respondents who participated in the survey between 1979 and 1998 and for whom all relevant information, except as noted, was reported in each survey year. Omitted from the population sample eligible for the study were a small number of respondents (n=110) who in 1979 reported their race/ethnicity as other than black, white, or Hispanic (non-black, non-white). In 1998, the study sample differed from the eligible population sample (n=8341). Proportionately, there were fewer females (46.7% vs. 50.3%, weighted), fewer blacks (13.6% vs. 14.8%, weighted), and fewer Hispanics (05.0% vs. 06.9%, weighted). In addition, study participants were more highly educated (11.0 vs. 8.90 years of completed schooling) than those in the eligible population sample. Hence, the study sample data were somewhat biased toward more highly educated, white, and male respondents. Results and recommendations were made with this sample bias in mind.

Measures

The two dependent measures are job training (JOBTR83+) and years of additional schooling (ADDSCH) after 1982. JOBTR83+ comprised two groups, namely respondents who reported participation in any one of a variety of job training programs (including federally funded employment and training programs, on-the-job or OJT programs, formal military job training programs, and the like) after 1982 (coded 1) and others (coded 0). ADDSCH was determined as the difference in the highest grade of school respondents completed between 1982, the last year relevant employment-related discrimination questions were asked, and 1998, the last year of available data at the time of the study.

Discrimination status (ANYDISC) is the independent variable of main concern. It captures responses of respondents to questions about their experiences with hiring-related discrimination as they sought good jobs. It is coded such that 1 = working-age respondents (i.e., 16 and over) who reported that they believed specific types of discrimination (race, nationality, sex, or age) had caused them problems in getting a good job in 1979 and 1982 and 0 = Other, i.e., no reports of such discrimination. Hence, ANYDISC is a measure of perceived discrimination. Inverse relations are expected between ANYDISC and JOBTR83+ and between ANYDISC and ADDSCH.

Sex and race/ethnicity are paired, creating six mutually exclusive categories that are treated as dummy variables in the regression analyses described below, with White Males (WM) as the missing category. The other categories are Black Males (BM), Hispanic Males (HM), White Females (WF), Black Females (BF), and Hispanic Females (HF). Given the decreased likelihood of white males experiencing job-hiring discrimination in the U.S. relative to other sex and race/ethnicity groups, it is expected that they will have the greatest increased investments in human capital regardless of discrimination status (ANYDISC). Given the history of race relations in general and labor market discrimination in particular in the U.S., it is expected that black males and females will have the least investments (Higham, 1997; Holt, 2001; McWhorter, 2001; Pascal, 1972).

There are two psychological variables that comprise scores of commonly used measures for individual initiative and self-esteem. The Rotter locus-of-control scale (LOCUS) captures individual initiative, measuring the extent to which one perceives a causal relationship between one's own behavior and subsequent events (Boor, 1974; Rotter 1966, 1975; Watson, 1981). Scores range between 4 and 16. Higher scores signify belief in more external control, and hence weak belief in self-determination or individual initiative. It is hypothesized here that LOCUS will be inversely related to human capital investments, that is, individuals having a greater degree of internal control will be more likely to pursue job training programs and increase their education regardless of their perceptions of discrimination in finding a good job. It should be noted that the internal consistency of the scale for the whole

cohort is low (alpha: .36), with roughly comparable estimates by race and sex (Center for Human Resource Research, 1999b).

The second psychological measure, the Rosenberg self-esteem scale (SELF-EST), captures the degree of approval or disapproval toward oneself (Rosenberg, 1965). Ambiguity surrounds the role of self-esteem in regard to economic well-being and, by extension, indirectly to investments in human capital that affect economic well-being (Wilson, Ellwood, & Brooks-Gunn 1995). The scale used here, however, demonstrates high internal consistency with reliability coefficients ranging from .84 (Strocchia-Rivera, 1988) to .87 (Menaghan, 1990), depending on the nature of the NLSY sample selected. The measure is a 4-point Likert scale containing ten statements of self-approval or disapproval. Higher scores signify greater self-esteem. It is hypothesized that SELF-EST will be positively related to investments in human capital regardless of their perceptions of discrimination in finding a good job.

Finally, there are three control measures: Highest Grade Completed '79 (HGC79), Previous Job Training (JOBTR79-82), and Years Employed (YRSEMP). JOBTR79-82 comprises respondents who reported participation in job training programs between 1979 and 1982 (coded 1) and others (coded 0). HGC79 is the highest grade of schooling respondents completed at the time of the 1979 survey. YRSEMP represents the number of years respondents were employed at the time of interview between 1983 and 1998.

Procedures

T-tests, Chi-square, and the general linear model (GLM) procedure are used to determine and show differences among respondents by major characteristics. Duncan's multiple-range test for post hoc comparisons is used when GLM results are found significant.

Logistic regression analysis is used to determine if Discrimination Status (ANYDISC) adds to the capacity of other measures to predict the likelihood of Job Training (JOBTR83+) and also to affect the influence of the other measures. Correlates are grouped into two models. The first or Main Effects Model comprises the independent (except ANYDISC) and control measures. The second or Expanded Model adds Discrimination Status (ANYDISC) to the main effects model. The residual chi-square statistic, Q_{RS} , of

logistic regression is used (Breslow & Day, 1980; Stokes, Davis, & Koch, 1995) to determine the overall effect and the goodness of fit of the Main Effects Model. The Main Effects Model fits more adequately when the Q_{RS} has non-significant p values ($p \geq .05$). The Odds Ratios are used to show respectively what if any effects ANYDISC has on the overall effect of the Main Effects Model as well as on the individual measures. The Hosmer and Lemeshow Goodness-of-Fit test is used as an additional support for the Expanded Model's adequacy for the data. In this case, we do not want to reject the null hypothesis that the data fit the specified model, so the higher the p -value the better.

Multiple regression analysis is used to determine the relative contribution of each of the independent and control measures or predictors to the explained variance in Additional Schooling (ADDSCH). Standardized coefficients (B s) are reported. To determine whether or not Discrimination Status (ANYDISC) affected ADDSCH beyond other measures, the Uniqueness Indicator (UI) and its accompanying F ratio are calculated. The UI and its accompanying F ratio indicate whether the R^2 , or percentage of variance, in ADDSCH accounted for by the reduced regression model containing all measures except ANYDISC differs statistically from that of the full model including all predictors (Hatcher & Stepanski, 1994).

Results

As noted, the study sample comprised 5,585 respondents. Of these, 3,453 (57.8%, weighted; 61.8%, unweighted, $\text{Chi-sq} = 14.15$, $p < .001$) reported discrimination in obtaining a good job in either 1979 or 1982. Those reporting job-hiring discrimination were 1.3 times as likely to have job training compared to those who reported no discrimination (76.9% vs. 71.8%, weighted; 75.6% vs. 71.0% unweighted) and they reported more years of additional schooling (1.00 vs. 0.88, $t = -2.7$, $p < .01$).

The first three columns under Measures in Table 1 show the percentages of respondents who reported discrimination in finding a good job and who had job training between 1979 and 1982 and after 1982 by race/ethnicity and sex groups. More than half of each group reported discrimination, ranging from highs

Table 1

Differences in Study Measures by Race/Ethnicity and Sex Groups

Race/Ethnicity & Sex Groups	Measures							
	ANYDISC %	JOBTR83+ %	JOBTR79-82 %	ADDSCH Mean	HGC79 Mean	LOCUS Mean	SELF-EST Mean	YRSEMP Mean
BM (N=768)	70.6	67.2	46.5	0.78	10.78	13.90	32.73	09.67
WM (N=1460)	53.1	74.8	48.4	1.04	11.20	14.02	33.16	11.94
HM (N=390)	66.4	68.7	45.6	0.83	10.51	13.98	31.87	11.30
BF (N=890)	69.0	78.9	48.5	0.84	11.07	13.92	32.36	08.87
WF (N=1631)	59.9	75.3	46.1	1.02	11.28	14.01	32.53	10.07
HF (N=446)	63.9	71.3	40.2	1.00	10.33	13.96	31.39	08.66
Statistics	$\chi^2 = 98.4$ p > .001	$\chi^2 = 38.5$ p > .001	$\chi^2 = 10.6$ p > .06	F = 5.9 p > .001	F = 37.5 p > .001	F = 1.9 p > .10	F = 16.6 p > .001	F = 107.1 p > .001
Post Hoc Comparisons (alpha = .05):								
ADDSCH:	WM, WF, HF > BF, HM, BM							
HGC79:	WF, WM, BF > HM > HF; WF > BF							
OLCUS:	WM, WF, HM, HF, BF, BM							
SELF-EST:	WM > BM, WF, BF > HM > HF							
YRSEMP:	WM > HM > WF > BM > BF, HF							

Note: Definitions of measures appear in the text. The degrees of freedom for each GLM Main Effects F value are 5, 5579.

of 70.6% for black males and 69.0% for black females to lows of 53.1% for white males and 59.9% for white women. Between two-thirds and four-fifths of each group reported job training after 1982, ranging from highs of 78.9% for black females and 75.3% for white females to lows of 67.2% for black males and 68.7% for Hispanic males. Between 40% and 50% of all groups reported job training between 1979 and 1982.

The last five columns in Table 1 show means and their respective F values of additional schooling, highest grade completed in 1979, Rotter locus of control scores, Rosenberg self-esteem scores, and years of employment between 1983 and 1998 by race/ethnicity and sex groups. Between-group differences of these measures appear in the lower half of Table 1. In 1979 white females and males and black females had the highest levels of education, over 11 years of completed schooling each, although white females had a significantly higher level than did black females (11.28 vs. 11.07) and Hispanic females had the least (10.33). White males and white and Hispanic females completed one year or more of additional schooling, while black females and males and Hispanic males completed less than .85 years. White males scored highest on the Rosenberg self-esteem scale (33.16), while the scores of black males (32.73) and white and black females (32.53 and 32.36 respectively) were higher than that of Hispanic males (31.87), who in turn had higher scores than Hispanic females (31.39). White males reported significantly more years of employment (11.9) than any other group, followed by Hispanic males (11.3), white females (10.1), black men (9.7), and black and Hispanic females (8.9 and 8.7 respectively). No differences were found on Rotter locus of control scores.

Table 2 shows the results of the logistic regression analysis on the job training measure JOBTR83+. The Q_{RS} statistics ($\chi^2 = 21.2$, $df = 1$, $p < .001$) indicate that the Main Effects Model failed to fit the data adequately and suggest that Discrimination Status, ANYDISC, adds to the predictive capacity of the model. The Hosmer & Lemeshow Goodness-of-Fit statistics ($\chi^2 = 4.8$, $df = 8$, $p = .77$) corroborate these findings, reaffirming that the Expanded Model adequately fits the data. On the whole, the addition of ANYDISC to the model barely changed the influence of other measures found significant in the Main Effects Model to affect

Table 2
Logistic Regression Results on Job Training

<i>Independent Measures</i>	<i>Main Effects Model Odds Ratio (CI)</i>	<i>Expanded Model Odds Ratio (CI)</i>
Discrimination Status (ANYDISC)		1.35 (1.19 1.53)
Locus of Control (LOCUS)		
Race/Sex—Dummy Variables ¹	0.95 (0.90 1.00)	0.95 (0.90 1.00)
Black Male (BM)	0.85 (0.70 1.04)	0.81 (0.66 0.99)
Hispanic Male (HM)	0.87 (0.68 1.12)	0.84 (0.65 1.08)
Black Female (BF)	1.86 (1.36 2.08)	1.62 (1.31 2.00)
White Female (WF)	1.22 (1.03 1.45)	1.20 (1.01 1.42)
Hispanic Female (HF)	1.28 (1.00 1.65)	1.26 (0.98 1.62)
Self-Esteem (SELF-EST)	1.04 (1.03 1.06)	1.04 (1.03 1.06)
Control Measures		
Highest Grade Completed '79 (HGC79)	1.09 (1.04 1.13)	1.09 (1.05 1.14)
Previous Job Training (JOBTR79-82)	1.49 (1.31 1.69)	1.47 (1.30 1.67)
Years Employed (YRSEMP)	1.07 (1.06 1.09)	1.07 (1.06 1.09)
Max-rescaled R ²	0.067	0.073
Q _{RS}	$\chi^2 = 21.2$ $df = 1$, p < .001	$\chi^2 = 4.8$ $df = 8$, p = 0.77
Hosmer & Lemeshow Goodness-of-Fit		

¹ Omitted category is White Males (WM).

Note: Confidence Intervals (CI) not containing the value 1.00 are significant at the .05 level.

the likelihood of job training. The Odds Ratios of most measures, including self-esteem (SELF-EST), white females (WF), and Hispanic females (HF) which were found to be significant, remained about the same. The major exceptions were black males (BM) and females (BF). In the Main Effects Model, women, regardless of race/ethnicity, were more likely than white males (WM) to participate in job training programs, while in the Expanded Model the likelihood of black women (BF) decreased from 1.86 to 1.62 times than that of WM and the likelihood of black males (BM) *not participating* in job training programs increased from a statistically insignificant 1.18 (1 / .85) to a significant 1.23 (1 / .81) times. In addition, discrimination increased the likelihood of job training. That is, youth who reported discrimination in their attempts to get goods job were 1.35 times as likely than not subsequently to participate in job training programs. Locus of control (LOCUS) had no effect in either model.

Table 3 shows the results of the multiple regression analysis on the additional schooling measure ADDSCH. The Uniqueness Index (UI = .0013, $p < .01$) and Beta weight ($B = .04$) indicate that Discrimination Status (ANYDISC) explains variation in ADDSCH beyond that of other measures in the Main Model. Discrimination in getting a good job during one's youth increases the likelihood of additional schooling, when controlling for previous level of education level (HGC79) and job training experience (JOBTR79-82) and for subsequent employment (YRSEMP). Discrimination, however, has little appreciable effect on the relative influence of most other significant measures on variation in ADDSCH. For the most part, the Beta weights (Bs) are roughly comparable. That is, compared to white males (WM), being a black male (BM) or Hispanic male (HM) decreased the level of additional education when accounting for other measures to roughly similar degrees in the Main and Expanded Models, while self-esteem (SELF-EST) was positively related to ADDSCH. Black females (BM) comprise the only exception (UI = .0015, $p < .01$). That is, compared to white males, being a black woman added to the explained variation of ADDSCH beyond that of other factors, including ANYDISC, and it did so in a negative direction, signifying a relatively decreased level of additional education.

Table 3

Multiple Regression Results on Additional Schooling

<i>Independent Measures</i>	<i>Main Model Beta Weights</i>			<i>Expanded Model Beta Weights</i>		
	<i>B</i>	<i>t</i>		<i>B</i>	<i>t</i>	
Discrimination Status (ANYDISC)				0.04	02.80**	
Locus of Control (LOCUS)				0.01	00.73	
Race/Sex—Dummy Variables ¹						
Black Male (BM)	-0.07	-04.70***		-0.08	-04.96***	
Hispanic Male (HM)	-0.04	-03.11**		-0.05	-03.27**	
Black Female (BF)	-0.04	-02.72**		-0.05	-02.98**	
White Female (WF)	0.01	00.42		0.01	00.27	
Hispanic Female (HF)	-0.01	-00.99		-0.02	-01.12	
Self-Esteem (SELF-EST)	0.15	10.98***		0.15	10.97***	
Control Measures						
Highest Grade Completed '79 (HGC79)	-0.18	-12.35***		-0.17	-12.08***	
Previous Job Training (JOBTR79-82)	-0.06	-04.51***		-0.06	-04.66***	
Years Employed (YRSEMP)	0.01	00.75		0.01	00.79	
<i>R</i> ²	0.0481			0.0494		

Note: The Uniqueness Index obtained for Discrimination Status (ANYDISC) in the Expanded Model is .0013, $F = 7.62(1, 5573)$, $p < .01$, while for Black Female (BM) the UI is .0015, $F = 8.79(1, 5573)$, $p < .01$.

¹ Omitted category is White Males (WM).

*** $p < .001$, ** $p < .01$.

Discussion

Results of this study show that perceived discrimination when seeking a good job is a fairly common experience among young labor force participants. It thereby supports a variety of formal and anecdotal evidence of labor market discrimination in general (*Economic Report*, 1998, chapter 4). The study also shows that perceived discrimination affects subsequent investments in human capital. Sunstein (1997) theorizes that in job markets containing discrimination, blacks and women invest relatively less in programs designed to augment human capital. By extension, any group experiencing discrimination can be expected to invest less in human capital. In the aggregate, findings of this study suggest otherwise. That is, young labor force participants reporting discrimination in their efforts to obtain good jobs are more likely than those who do not experience discrimination to increase their educational levels and to participate in job training programs. Rather than depress investment in human capital, discrimination increases the likelihood of future investments.

This finding is consistent with the supply-side neoclassical model of human capital. This theory holds that discriminated groups such as African-Americans will maximize their utility by investing aggressively in education and training and thereby increase the likelihood of moving into high-opportunity labor markets. Tomaskovic-Dovey (1993) contends, however, that the neoclassic theory is weakest at this very point. His study of the general working population in North Carolina shows that blacks and women experience job segregation in low-opportunity labor markets, suggesting that the structure of the labor market does not reward and hence discourages aggressive investments in human capital. The determination of whether or not those who reported job-hiring discrimination and subsequently invested in education and job training moved into high-opportunity labor markets more so than other subjects lay beyond the scope of the study. Findings of the study, however, suggest that they did, a subject for future research.

Paradoxically, in light of the positive relationship between human capital and economic well-being, aggregate findings of this study suggest that labor market discrimination, at least in

the hiring process of relatively young labor force participants, "benefits" both society at large and those directly affected by it. To the extent discrimination actually increases the likelihood of investing in human capital, as both supply-side neoclassical theory and classical utilitarian theory would predict, society as a whole benefits (Nathanson, 1998; Roemer, 1996). Additional investments in human capital increase productive capacity that in turn theoretically leads to greater levels of aggregated material well-being. This would be the case even in a segmented labor market. Over-trained or over-educated workers in less valued or lower-opportunity occupations would bring their increased productive capacity with them and would likely be more productive than others and rewarded accordingly by commanding higher salaries or more prestigious positions within these occupations.

In addition, discrimination may also "benefit" those who directly experience it, not in the short run since they bear the cost of being denied desirable employment, but in the longer term to the extent additional human capital investment leads to greater levels of income and/or more prestigious occupations that might not have been the case otherwise. These individuals may rise up in the face of discrimination and more successfully challenge the barriers they face than might be the case otherwise. Whether or not those who experience labor market discrimination do in fact command higher paying or more prestigious jobs within lower-opportunity occupations or move into high-opportunity occupations are empirical questions that can be subjected to future research. Regardless, findings pit two rival views of social justice against one another and present a formidable challenge regarding the grounds on which to base policies and programs aimed at social betterment.

The two longstanding views of social justice that findings of this study pit against each other are the classical utilitarian tradition of maximizing the greatest good and the liberal utilitarian tradition of maximizing good without making the most disadvantaged even worse off (Marshall, 1972; Rawls, 2000; Sterba, 1999). In the classical utilitarian tradition, justice is based on merit, contingent on one's contribution to the aggregate welfare. In the liberal utilitarian tradition, one's market value cannot be the measure of one's right to welfare. Reduction in the aggregate

welfare can be justified to the extent welfare measures ensure that the life opportunities or conditions of the most disadvantaged are maintained or advanced. On-going debates about affirmative action are exemplary, often pitting justice claims of blacks and women for preferential treatment on liberal utilitarian grounds against those of white males for merit-based decisions on classical utilitarian grounds (Curry, 1996; Rosenfeld, 1991).

Proponents of affirmative action contend that underrepresented minorities and women deserve preferential treatment because of pervasive racism or sexism that is directed against people of color of every class or against women in general. Everyone who benefits from white privilege or male privilege should share the cost of preference programs, but this cannot be arranged. Consequently, a few whites or males pay a high price, for example by being denied admission to prestigious law or medical schools so that people of color or women can be admitted, while the majority of whites or males emerge untouched. Despite the injustice and associated costs borne by the few in the non-preferred groups and by extension by society at large (to the extent there is a net loss of aggregate productivity due to the more talented or skilled going into lower-opportunity occupations than they originally sought), adherents of affirmative action judge that preferences should be continued, given the importance of racism or sexism in society (Isbister, 2001). Opponents of affirmative action who prefer to rely on market mechanisms to remedy the effects of discrimination argue otherwise (Powelson, 1998; Sowell, 1990 & 1981), while those who straddle the issue alter the target of who should benefit from such programs, say from an exclusive focus on race to targeting areas based on economic deprivation (Gibelman, 2000) or broadening eligibility so as to renew the nation's commitment to enable everyone to achieve the highest levels that their abilities admit (Wilson, 1999) and thereby change the criteria by which claims for preferences are to be grounded in social justice.

Given the portended "benefits" to society at large and to discriminated against individuals found in this study, neither market mechanisms nor government interventions are likely to eradicate such labor market "injustices" and social justice appeals to do so may have little or no net fruitful effect. In classical utilitarian terms, justice demands maximizing the social welfare, while in

supply-side neoclassical terms discrimination contributes to the overall common good by increasing the productive capacity of those discriminated against. This is not to say that those who experience job-hiring discrimination have no claim to social justice to correct the injustice on a case-by-case basis or that efforts of social transformation should cease or that oppression in the form of discrimination is an acceptable means of establishing priorities for policies conducive to the social good. It only suggests that those bearing the brunt of such injustice are capable victims and that portended long-run advantages might mitigate some of the practical vis-à-vis theoretical grounds or merits of their case.

Appeals to social justice may be on firmer footing pragmatically to the extent they advance public policies and private initiatives ensuring access to educational institutions and job training programs in the broadest possible sense affirming opportunity as Wilson (1999) and others (e.g., Loury, 1997; Swain, 1998) recommend. Such programs enhance the capacity and capability of individuals to enjoy a higher quality of life in a pragmatic way that also meets the aims of those advocating more structurally oriented or socially transforming means to achieve social justice (Gil, 1990 & 1998; Nussbaum, 1999; Saleebey, 1990; Sen, 1992). The unavailability or denial of such access would lead to diminished human capital investment, lower income for those discriminated in the job-hiring process, and decreased productive capacity and aggregate economic well-being, as supply-side neoclassical human capital theory, classical utilitarian theory, and some existing evidence suggest (Caputo & Cianni, 1997; *Economic Report*, 1998).

Aggregate findings of the study, nonetheless, mask race/ethnicity and sex group differences in regard to type of investment, differences that are in part more consonant with the initially theorized inverse relationship between discrimination and human capital investment (Sunstein, 1997). This rational choice theory suggests a hierarchy of advantage based on race/ethnicity and sex, with white males at the apex and black females at the nadir. Caputo (1999) reports a similar hierarchical outcome in his study of economic mobility and well-being among the same cohort of youth used in the study reported here. Corcoran (1995) also reports the significant effects of race on the economic prospects of children as they mature into wage earners and parents, with

those born into black families faring worse than others. To the extent women and minorities can be shown to participate in job training programs and/or to complete less additional schooling than white males do in the face of higher rates of discrimination, then appeals to social justice to retain affirmative action policies and programs as currently understood and implemented can be further strengthened.

Bivariate findings of the present study indicate that whites in general and white males in particular experience the least job-hiring discrimination but they subsequently achieve higher levels of additional schooling than do almost all other groups. Whites in general and white males in particular retain an advantage over other groups. These findings go against the aggregate finding that discrimination increases the likelihood of human capital investment and they provide some support for the hypothesized negative relationship between discrimination and human capital investment based on rational choice theory. Paradoxically consistent with aggregate findings of the study, black females comprise the notable exception to white male advantage, reporting the second highest level of discrimination (next to black males) and the highest rate of job training. This finding lends support to the supply-side neoclassical theory. Some of the multivariate findings nonetheless suggest how white males retain their advantage over black females even in job training, thereby eroding support for the supply-side neoclassical theory and further corroborating the initially hypothesized rational choice theory. Other findings, however, suggest otherwise, lending partial support to supply-side neoclassical theory. Implications for policies and programs based on social justice vary accordingly.

Study findings show that women in general and black women in particular are more likely than white males to participate in job training programs when accounting for other factors, thereby supporting the supply-side neoclassical theory of human capital. The likelihood of doing so, however, decreases when discrimination is also taken into account, as the rational choice theory predicts. Since discrimination results in a decreased rate of participation in job training programs among black females, white males thereby retain a privileged position relative to them. Black males, however, are less likely than white males to participate

in job training programs when accounting for other factors, but the likelihood of doing so decreases even further when discrimination is also taken into account. The former finding in regard to black males and job training is consistent with the supply-side neoclassical theory of human capital while the latter finding is predicted by rational choice theory as initially hypothesized. In the case of black males and job training, the evidence again suggests that being a white male had its advantages.

In regard to achieving higher levels of education, multivariate findings show that discrimination accounts for greater variation than would be accounted for otherwise and, as supply-side neoclassical theory predicts, the relationship is positive. Taking discrimination into account, the relative influence of race/ethnicity and sex on additional schooling also increases in importance for black females relative to white males. As rational choice theory predicts, black women who experience job-hiring discrimination achieve lower levels of additional education than do their white male counterparts. Also consistent with rational choice theory, when not accounting for discrimination, black and Hispanic males complete less years of additional schooling than do white males to a statistically significant degree. However, the increased relative influence of race/ethnicity and sex on additional schooling is negligible when accounting for experiences with discrimination, thereby partially disconfirming rational choice theory.

Further, as the supply-side neoclassical theory of human capital would predict, though not statistically significant, white and Hispanic females complete more additional schooling than do white males when discrimination is taken into account beyond other factors. Hence, whatever advantages white males are able to generate as a result of discrimination in job hiring are somewhat mitigated in regard to additional educational attainment. Such is not the case with black females. Unlike black and Hispanic males who complete less education but not to a statistically significant degree when such discrimination is taken into account beyond other factors, black women complete less education than do white men to a statistically significant degree. In regard to educational attainment in the aftermath of job-hiring discrimination, the advantage clearly goes to white males and the disadvantage to black females.

On the whole, multivariate findings suggest that affirmative action policies and programs based on race and sex remain warranted. Social justice aims might be most effectively targeted to ensuring that black males have opportunities for and access to job training programs and that black women have opportunities for and access to educational institutions. Additional research is needed to adjudicate claims of rational choice and supply-side neoclassical theories regarding the effects of job-hiring discrimination in light of findings of this study. Such research should account for occupational status and income over the course of one's working history.

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