IX. HISPANIC EMPLOYMENT AND EARNINGS

Out of the Barrio: Do Young Hispanics Benefit from Residential Job Training Programs?

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Abstract

A four-year longitudinal study, the National Job Corps Study (NJCS) was a randomized experiment in which over fifteen thousand Job Corps eligible applicants were randomized into treatment and control groups. Job Corps was found to have positive impacts in the weekly earnings of whites and others forty-eight months after randomization, but not for Hispanics. We argue that one reason for this finding is that the NJCS did not create comparable treatment and control groups for Hispanics. Given the failure of randomization for Hispanics, we employ non-experimental estimators to examine the programmatic outcome of Hispanics. Our findings suggest that the lack of programmatic gain is due to the large and unusual earnings by Hispanic controls.

Introduction

During the late 1990s, the Department of Labor sponsored the National Job Corps Study (NJCS) to assess the effectiveness and social value of Job Corps. Eligible Job Corps applicants were assigned to a treatment or control group, where the former could enroll in Job Corps, and the latter were denied enrollment for thee years. Overall, the NJCS report found that program

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participants earned 12 percent more than control-group members during the forty-eight-month follow-up survey (Burghardt et al. 2001). At the same time, however, the NJCS revealed that Hispanics that undertook Job Corps training did not have higher earnings than the Hispanic control group, a finding that could not be explained by differences in characteristics, education and training, length of program enrollment, or quality of Job Corps centers.

The objective of this paper is to provide possible explanations to these findings. In particular, we argue that the NJCS randomization, which was applied to the whole sample, did not create comparable treatment and control groups for Hispanics, and thus the Hispanic control group is not a valid counterfactual to compare the outcomes of Hispanics that completed Job Corps training. In such a case, non-experimental methods are appropriate for evaluating the programmatic outcome for Hispanics. When we apply different non-experimental estimators to the NJCS data we find smaller estimated negative effects than the original experimentally estimated impacts for Hispanics, although our estimated effects are still negative and statistically insignificant. We report evidence that the Hispanic control group is not a valid counterfactual, but we are not able to distinguish the reason why no programmatic effects are found for Hispanics with the current available data.

Job Corps Program and the National Job Corps Study

The purpose of Job Corps is to provide low-skilled and less-educated young people with marketable skills to enhance their labor market outcomes by offering academic, vocational, and social skills training in over 115 residential and training centers. Nearly seventy thousand new students participate every year at a cost of about $1 billion. Students are selected based on several criteria, including age (between sixteen and twenty-four years old), poverty status, residence in a disruptive environment such as neighborhoods with low socioeconomic characteristics, not on parole, being a high school dropout or in need of additional training or education, and citizen or permanent resident (U.S. Department of Labor 1999; Schochet et al. 2001).

From a national pool of over 80,000 Job Corps–eligible young persons, 15,386 were selected for the National Job Corps Study (NJCS) in the mid-1990s. The experimental study assigned 61 percent of the selected Job Corps–eligible young persons to the treatment group and 39 percent were assigned to the control group. The control group were not permitted to enroll in Job Corps for three years after randomization, yet they were not prevented from enrolling in other training programs. In order to assess the effects of Job Corps, both the control and treatment groups were tracked with a series of interviews immediately after randomization, with more interviews twelve, thirty, and forty-eight months after randomization.

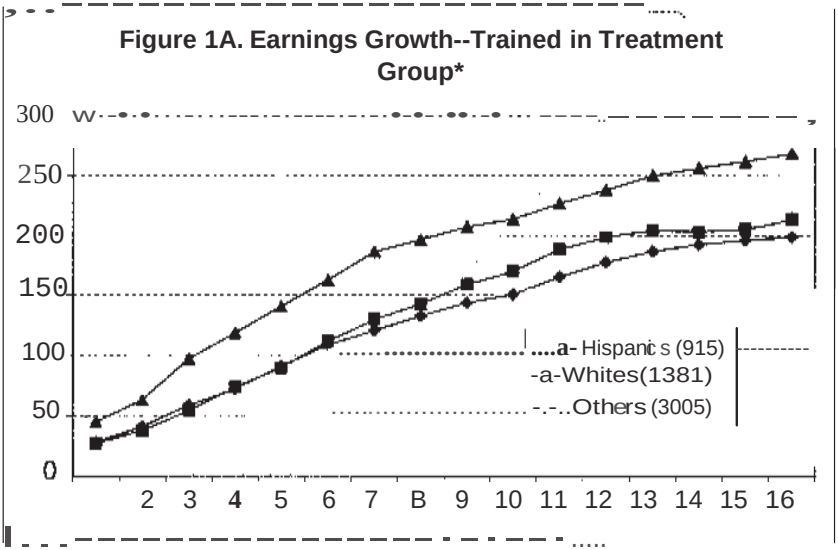
Some Features of the NJCS Data

One of the main reasons why social experiments are employed is the notion that, because of randomization, the treatment and control groups are statistically identical, and this allows direct comparisons between both groups. Of the initial intake sample of 15,386, 11,313 members completed the final forty-eight-month follow-up survey. We include those persons with a complete baseline survey and who provided income information during the forty-eight-month follow-up survey in our working sample. A table with the main variables of interest in this study by ethnic origin and randomization outcome, and the z-statistic of the test of equality of means within ethnic group are available from us upon request. Here, we summarize some of the salient features.

Given the opportunity to enroll in Job Corps, 73 percent of those in the treatment group did so, while a small percentage of the control group, 4.4 percent, also undertook Job Corps services. Tests of difference in means show that for the whole sample, randomization was successful in producing a comparable control group. However, the Hispanic treatment and control groups show significant differences at baseline in the mean number of children, mean age of oldest child, and the proportion of them living in a PMSA (this is the only demographic group with a statistically significant difference in this variable). Also, the Hispanic controls have a unique education and training outcome that distinguishes them from other groups. First, Hispanic controls with a high school diploma account for 26.6 percent of all persons who attained a high school diploma or GED, the highest percentage among all groups. Second, while 72.5 percent of Hispanic control group members took some form of training or education program, a greater percentage of Hispanic control group members (18 percent) completed a vocational program than of whites (13.4 percent) and others (15.2 percent).

To consider further differences between the control and treatment group members, Figures 1 and 2 show the growth in earnings over the sixteen-quarter period for each of the demographic groups split by individuals receiving and not receiving any training (including Job Corps), and by whether they were assigned to the control or treatment group. Within individuals receiving training (Figures 1A and 2A), whites show higher earnings in all quarters, followed by Hispanics and others. For some reason, earnings for treated Hispanics in the treatment group stagnate, while the earnings of those treated in the control group keep growing over those final quarters. Undoubtedly, this difference contributes to the negative estimate of the effect of the program.

In Figure 2B, Hispanics in the control group not receiving training show surprising growth in earnings in the first twelve quarters that allows them to overtake the level of earnings of whites for a few quarters (Hispanics do not



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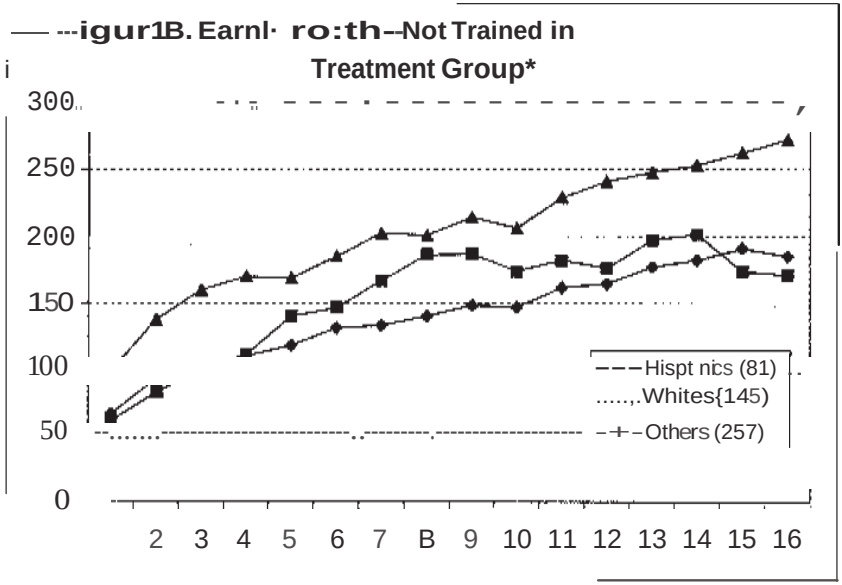

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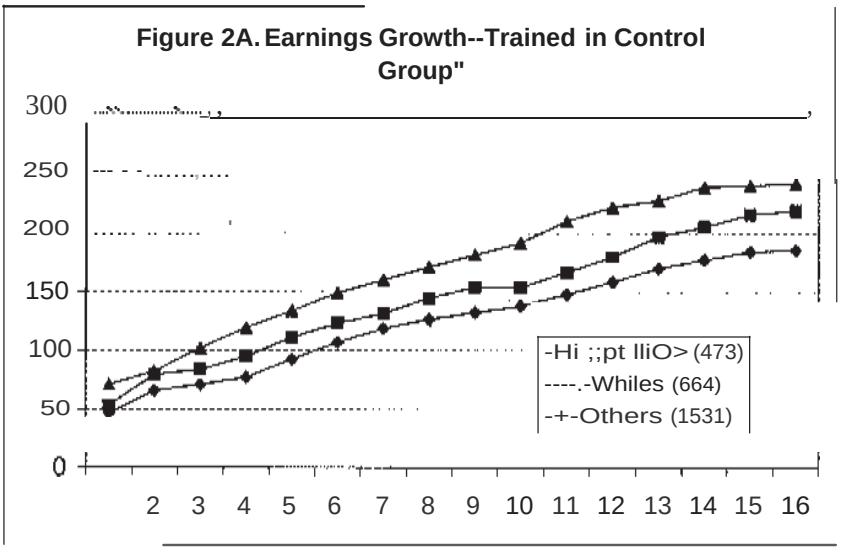

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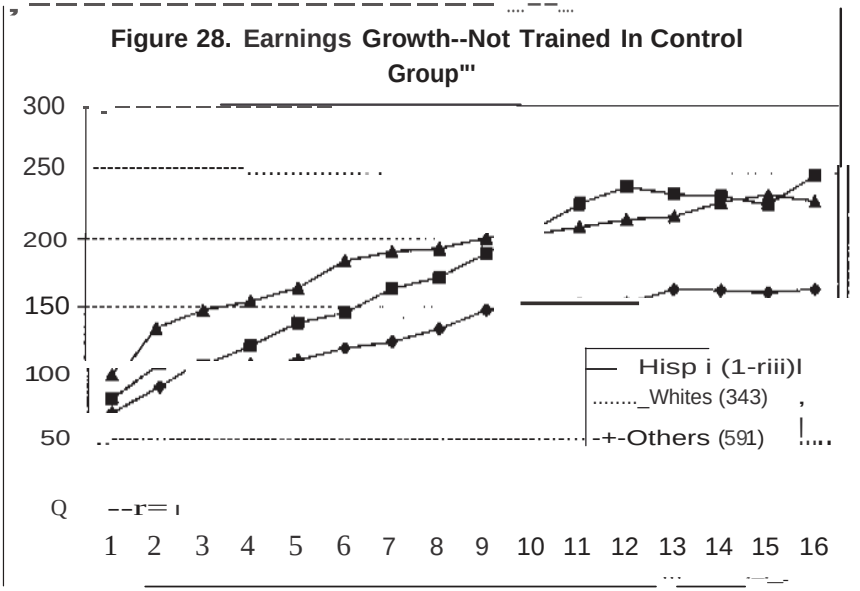

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earn more than whites in any other subgroup in any other quarter). While the earnings growth for this Hispanic subgroup also stagnates, the previous high growth allows them to finish with higher earnings than whites in this subgroup, and comparable to the earnings of whites who receive training. It is interesting to note that Hispanics show the highest earnings growth within those receiving training in the treatment group (13.82 percent) and within those receiving training in the control group (9.24 percent). Additionally, Hispanics not receiving training in the control group have high earnings growth (8.14 percent), which is significantly higher than the growth of any other group not receiving training, either in the control or treatment group, by over 1.5 percentage points. There is, therefore, some evidence that the Hispanic control group that does not receive training is somewhat different from whites and others in the same category.

Insights from Non-experimental Estimators

Since individuals in the control group have access to alternative programs, and a large number of individuals indeed enrolled in them, we can define the following two parameters that can be estimated under some assumptions. The first one is the (average) treatment effect of Job Corps relative to other training programs available to eligible applicants, known as the effect of the program (Heckman et al. 2000). The second parameter is the effect of training relative to no training at all, called the effect of training (Heckman et al. 2000).

The assumption that the control and treatment groups are comparable is not valid under certain situations. As the data show, just over 27 percent of those randomized into training never actually enroll in Job Corps, while slightly less than 72 percent of those in the control group enroll in substitute training. It is possible that those that enroll are somehow different than non-enrollees. If we are interested in evaluating the effect of training and relax the assumption that the training inside and outside Job Corps provides the same mean benefits, then randomization no longer yields comparable treatment and control groups, and non-experimental methods are necessary to obtain estimates of the benefits of any training. Additionally, as mentioned above, given that randomization was used for the whole sample and not applied specifically to the different demographic subgroups, then randomization does not guarantee that the treatment and control groups by race are comparable. This might be particularly true for Hispanics, as they represent the smallest group (compared to whites and others), and since they are more likely to be geographically concentrated: 44 percent of Hispanics, in contrast to 35.8 percent of others and 15.6 percent of whites, live in a PMSA.

As a reference, using an experimental estimator similar to the one employed in the original NJCS study (which adjusts for enrollment in Job Corps

by treatment and control group members) shows that the impact on wages in quarter sixteen on those that completed Job Corps is as follows: treated Hispanics earned a statistically insignificant $15 less per week relative to their control group, while whites and others earned a statistically significant $46 and $22 more, respectively (all income is in 1995 dollars). These estimates are similar to the ones reported in the NJCS study.

We report in Table 1 the estimated effects of Job Corps and any training on weekly earnings in quarter sixteen using the following non-experimental estimators: differences-in-differences (*DID*), sample selection (*SS*), and matching estimator (*ME*). Given the *DID* estimates, we infer that the effect of time-invariant differences in covariates and unobserved traits fails to explain the observed lack of an effect of Job Corps on Hispanics, while the *DID* estimates of the effect of training Hispanics are positive but statistically insignificant.

We employ the widely used sample selection (*SS*) model by Heckman (1979), using randomization into the experimental treatment group as an exclusion restriction. A salient feature of the *SS* results is the evidence of selection into training based on unobservable characteristics: the selection variable (λ) is statistically significant in most cases. There is evidence of negative selection for whites and others, suggesting that the unobserved factors that influence the probability of receiving training are negatively correlated with the unobserved factors influencing earnings or the probability of working. Interestingly, the results for Hispanics suggest a positive relationship between the unobservable characteristics in the selection into training equation and those in the outcome equation. These findings suggest that what motivated Hispanics to enroll in Job Corps and any training was different from what motivated other ethnic groups.

The *ME* we employ is the bias-corrected simple matching estimator of Abadie and Imbens (2002). This matching estimator is easy to implement, and has desirable large-sample properties and good finite-sample properties compared to other matching estimators available.[1] The *ME* interestingly shows for Hispanics that the estimated effect of Job Corps is positive while the effect of any training is negative, although both are statistically insignificant.

Further Analysis of the Hispanic Subsample

Hispanic Controls versus Non-Hispanic Trained Groups

To address our suspicion that the Hispanic control group might be different from the other demographic control groups, we undertake the experiment of matching individuals in the Hispanic treatment group with individuals in the control group of a different race. Conversely, we match non-Hispanic individuals who received training with Hispanic individuals who did not. The results of this experiment are in the first four columns of Table 2.

TABLE 1

Non-experimental Estimators

	All		Hispanics		Others		Whites	
Training Variable	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Differences-in-Differences								
Ever Job Corps	13.10	0.04	–27.76	0.34	19.58	0.00	27.47	0.00
N	10233		1774		5795		2664	
Ever any training	38.09	0.00	3.11	0.94	48.14	0.00	47.39	0.00
N	9983		1732		5665		2596	
Self-Selection Correction								
Ever Job Corps	23.96	0	–19.78	0.16	50.78	0	23.75	0
λ	–10.54	0.03	19.68	0.1	–33.75	0	–7.27	0.23
N	10044		1734		2601		5709	
Ever any training	77.98	0	–84.77	0.08	136.33	0	97.55	0
λ	–27.68	0.01	54.45	0.05	–67.05	0	–33.88	0.02
N	9670		1664		2501		5491	
Matching Estimator								
Ever Job Corps	15.36	0.00	5.61	0.31	16.09	0.00	16.21	0.04
N	10042		1734		5707		2601	
Ever any training	31.08	0.00	–2.04	0.55	38.78	0.00	26.36	0.02
N	10115		1734		5763		2632	

Note: The dependent variable in the DID estimator is the change in earnings between weekly earnings at baseline interview and in average in 16th quarter, and quarter 16 weekly earnings in all other estimators.

TABLE 2

Using the Matching Estimator to Compare Hispanics to Other Demographic Groups and to Hispanics from Census (Average Treatment on the Treated (ATT) for Average Weekly Earnings in Quarter 16)

	Treated Hispanics with non-treated non-Hispanics		Treated non-Hispanics with non-treated Hispanics		Treated Hispanics with non-treated whites		Treated whites with non-treated Hispanics		Treated Hispanics with Hispanics from Census	
Training Variable	Coefficient	p-value	Coefficient	p-value	oefficient	p-value	Coefficient	p-value	Coefficient	p-value
Ever Job Corps	–4.75	0.65	10.59	0.15	–108.90	0.00	53.08	0.00	127.61	0.00
N	5362		4680		2231		2104		8484	
Ever any training	45.58	0.00	–16.12	0.21	47.74	0.00	24.45	0.16	129.30	0.00
N	2721		7394		1946		2433		9227	

Note: Variables included in the matching: highest grade completed at baseline; whether had a GED or HS diploma at baseline; age; city size lived in at baseline; whether English, Spanish, or other was native language; whether married or cohabitating at baseline; and whether head of household at baseline.

Taken together, these results seem to indicate that Hispanics receiving training (Job Corps or any type) compare favorably with non-Hispanics not receiving it, whereas when non-Hispanics receiving training are compared to Hispanics not receiving it, the previously estimated positive effects shrink dramatically and sometimes become statistically insignificant. We regard these results as further supporting evidence for the hypothesis that the Hispanic subgroup, especially those not receiving any training, is particularly unique in various unobserved ways that make it a very suspect control group.

Evidence from a Control Group Drawn from the 2000 Census

We further experiment with an alternative control group of Hispanics constructed from Census 2000 data, again using the *ME*. Even though we take particular care in drawing a comparison group with similar characteristics as the eligible applicants to Job Corps, the use of such a control group is disputable. However, it is possible that, if the Hispanic control group members exhibit implausibly high outcomes, the comparison with this more representative alternative control group should circumvent this problem. The results in the last two columns of Table 2 show that the estimated effect using the Census data as a control group is large and statistically significant. While this suggests that Hispanic individuals in the treatment group are clearly better off than those in the Census control group, we hesitate to attribute this exclusively to the effect of training and regard these results as suggestive only.

Some Potential Explanations for the Lack of Programmatic Effects on Hispanics

We consider two possible explanations to the lack of effects in earnings of Job Corps and training on Hispanics: sample attrition and geographic mismatch. Unreported figures of the change in samples for each ethnic group due to attrition reveal that the change in sample sizes is not uniform across ethnic groups: whites and others have a dropoff in sample size of between 16.9 to 18.5 percent, while for Hispanics the decline is 21.5 percent. The other overall pattern is that the reduction in sample size is greatest with program-group members, 22.5 versus 18.7 percent for control-group members, respectively.

A consistent pattern with the Hispanic sample is the extent to which they reside in large cities. Among the non-treated, 47.7 percent of Hispanics, 35.8 of others, and 14.3 percent of whites reside in a PMSA. This characteristic may play a significant role in the findings above. Heckman, Ichimura, Smith, and Todd (1998) stress the importance of comparing individuals in the same geographic locations to control for potential differences in the local labor markets. We believe this is a potentially important factor to control for given the

documented differences in the Hispanic subpopulations. In an unreported table available upon request, we demonstrate that treated Hispanics living in PMSAs average $36.3 less per week than non-treated Hispanics. This effect exists only among Hispanics, as treated and non-treated whites and others have statistically equal earnings in PMSAs. We are in the process of obtaining the restricted-use data to address its potential effect in the estimated impacts.

Conclusions

Our findings shed some light on the NCJS study's results for the Hispanic subsample. While in many cases the non-experimental estimators we employ find zero or negative effects of Job Corps for Hispanics, our examination of the data shows that Hispanics exhibit some unique characteristics, especially among the nontrained control group. A more detailed analysis of the possible explanations for this finding will be addressed in the future.

We suspect that the Hispanic control group, especially the untrained, pose problems when used as a comparison group, and it is this group that is partly responsible for these outcomes. We find that the programmatic effects of treated Hispanics improve when compared to non-Hispanics not treated, while the effects of treated non-Hispanics decrease substantially and sometimes become insignificant when they are compared to nontreated Hispanics. These results hold even when including only whites in the non-Hispanic group, who traditionally have higher earnings than Hispanics.

We also compare treated Hispanics to an ad hoc control group constructed following Job Corps eligibility guidelines from the 2000 Census, finding that treated Hispanics fare extremely well compared to the Census control group, which we regard as additional evidence that the Hispanic control group is somehow odd. We believe that the reason why randomization did not yield comparable Hispanic treatment and control groups is that it was applied to the whole sample and not to the different subpopulations of interest, such as Hispanics. In this respect, this study raises some concerns that policy makers and social experiments should keep in mind.

Across the estimates we obtain in this paper with different methodologies, we still find that Job Corps appears to have insignificant effects on Hispanics. Our ultimate goal, which we have not accomplished here, is to find explanations for this result. It remains possible that Job Corps training for Hispanic youth is no more effective than substitute training programs. However, in our view, the most important issue that needs to be considered is the impact that local labor markets in large metropolitan areas have on Hispanic youth.

Note

1. Abadie and Imbens (2002) provide some Monte Carlo evidence about the finite-sample properties of the bias-corrected estimator.

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