

**Analysis of Associations between  
Contemporaneous Job Corps  
Performance Measures and  
Impact Estimates from the  
National Job Corps Study**

Executive Summary

January 31, 2011

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Contract Number:  
DOLQ091A20941/DOLU101A21559

Mathematica Reference Number:  
06808.300

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## EXECUTIVE SUMMARY

Job Corps is the nation's largest vocationally focused education and training program for disadvantaged young people. It serves young men and women between the ages of 16 and 24 at 124 center campuses nationwide, primarily in residential settings. The program's goal is to prepare young people for successful careers. Each year, Job Corps serves more than 60,000 students at a cost of about \$1.5 billion, which is more than 60 percent of all funds spent by the U.S. Department of Labor on youth training and employment services. To examine the effectiveness of Job Corps, the Department's Employment and Training Administration sponsored the National Job Corps Study (NJCS) in 1993.

The NJCS used survey and administrative earnings records data to estimate the Job Corps program's average impacts on students' employment and related outcomes. From late 1994 to early 1996, nearly 81,000 young people nationwide were randomly assigned to either a treatment group, who were allowed to enroll in Job Corps, or a control group, who were not allowed to enroll for a period of three years. NJCS findings are based on comparisons of the outcomes of about 9,500 treatment group members in the research sample and 6,000 control group members. The main impact analysis found that Job Corps improved education and training outcomes (such as the receipt of General Educational Development and vocational certificates and time spent in school), significantly reduced criminal activity, and improved earnings and employment outcomes in the two years after program exit, although the longer-term analysis did not demonstrate that impacts were sustained beyond the two-year period.<sup>1</sup>

The NJCS also examined the extent to which impacts (average treatment-control differences) on key outcomes were associated with the aggregate overall center performance measure used by Job Corps. The NJCS found that impacts on key outcomes were *not* associated with the overall aggregate measure of center performance.<sup>2</sup> Students in higher-performing centers had better outcomes; however, the same pattern was observed for the *control* group members who would have been assigned to those centers.

This study extends the previous work analyzing the relationship between Job Corps performance measures and center-level impact estimates from the NJCS. We examine whether adjusting performance measures for student characteristics results in positive statistical associations between performance measures and impacts. Using linear regression, we constructed new measures of center performance that adjust for differences in individual and local area characteristics of center participants to measure the component of center performance that is not explained by these characteristics. We ran separate regressions on data from ETA-652 intake forms and from the NJCS baseline survey, adjusted not only the aggregate measure but also component performance measures in the Job Corps categories of program achievement, placement, and quality/compliance, and considered three years' worth of performance measure data. Our goal was to test for any associations between center-level impacts and unadjusted or adjusted performance measures.

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<sup>1</sup> Schochet, Peter Z., John A. Burghardt, and Sheena M. McConnell. "Does Job Corps Work? Impact Findings from the National Job Corps Study." *American Economic Review*, vol. 68, no. 5, December 2008, pp. 1864-1886.

<sup>2</sup> Schochet, Peter Z., and John A. Burghardt. "Do Job Corps Performance Measures Track Program Impacts?" *Journal of Policy Analysis and Management*, vol. 27, no. 3, summer 2008, pp. 556-576.

We address the following research questions:

- Are center performance rankings changed by regression adjustment?
- To what extent are regression-adjusted performance measures better able to distinguish between centers with larger impacts and those with smaller impacts?
- Are there specific performance measures (either unadjusted or adjusted) that are more associated with impacts than others or the summary (overall rating) measure that was used for the NJCS?

Figure 1 illustrates the steps in our analysis. First, we gathered performance measure data for all three years of the NJCS. After linking NJCS participants to Job Corps centers using intake counselors' predictions of center assignment (available for both the treatment and control groups), we aggregated student characteristics to the center level. Then, we used regression models to adjust center performance measures for average student characteristics. We calculated NJCS impacts at the center level for seven different outcome measures, including educational services, educational attainment, arrests, and earnings. Finally, we compared adjusted and unadjusted performance measures (including different components and different program years) to center-level impact estimates.

Our overall finding is that although regression adjustment changes the performance rankings of centers, *the adjusted performance ratings remain uncorrelated with center-level impacts*. In particular, we find that:

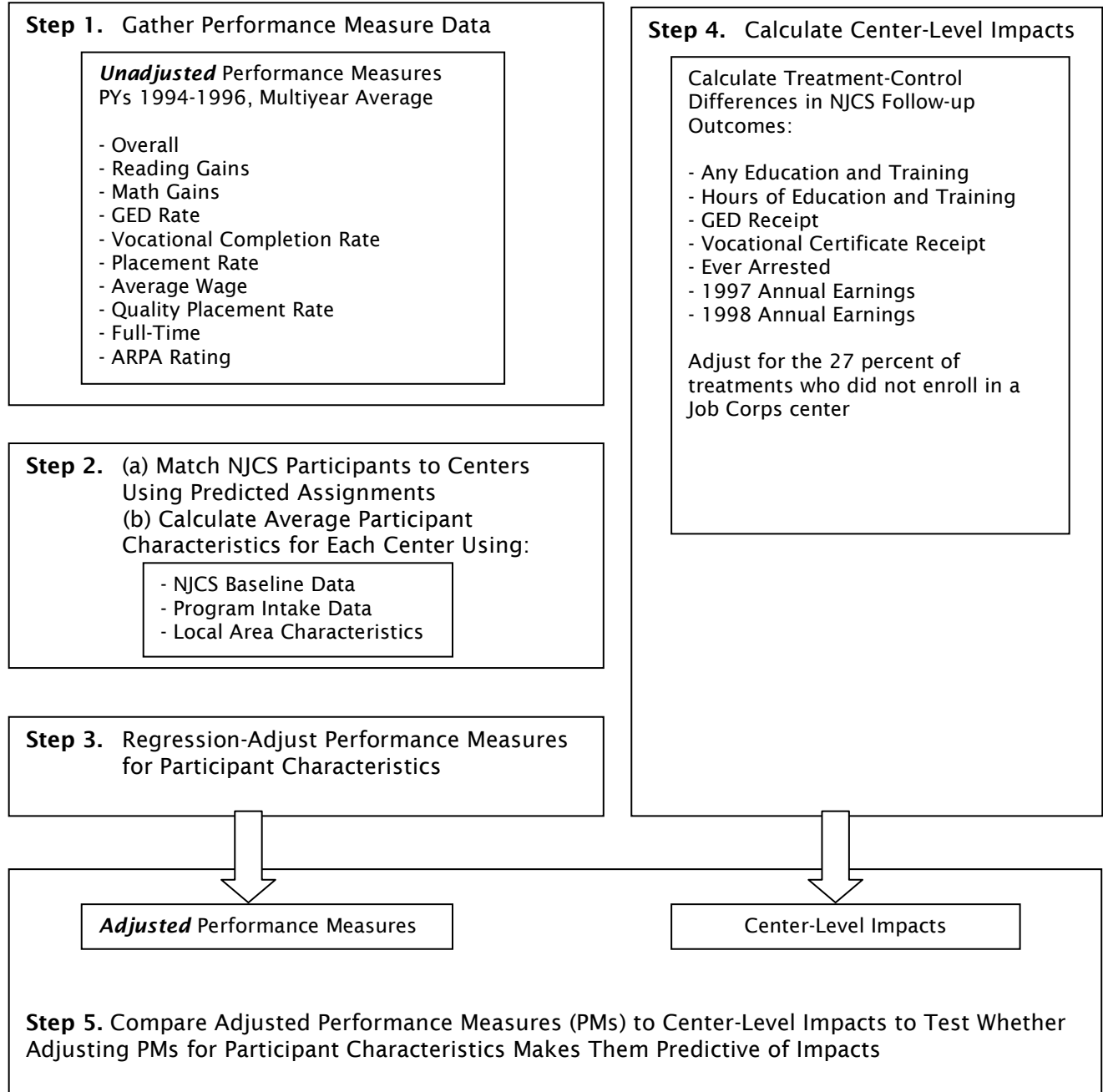
- The mix of students in high-performing centers is modestly different from students in low-performing centers (Table 1).
- Regression-adjusting for characteristics accounts for some of the variance in the performance measures and changes center rankings, albeit not dramatically. Regression-adjusted and unadjusted performance measures are positively correlated (Table 2).
- The correlations between impacts and performance measures are generally not significantly different from zero (Table 3). It is noteworthy that regression-adjusted performance measures are no better than unadjusted performance measures in this regard. We find similar results whether we use the ETA-652 data or the more detailed NJCS baseline survey data.
- Our findings hold for overall measures of performance as well as components of center performance and different program years; that is, the relationship between impacts and different performance measure components is also generally weak and shows no consistent pattern.
- Similarly, among the subgroups we analyzed, there are no particular groups of centers for which relationships between performance measures and impacts are significant.
- In contrast, when we create center-level "performance measure" constructs using treatment group outcomes from the NJCS follow-up survey data, we find them to be positively correlated with the NJCS impact estimates. Exploring these findings may be an avenue for future research.

In conclusion, although regression adjustment had some effect on the performance rankings, it did not make performance measures any more predictive of impacts. While the baseline covariates



explain some portion of the variance in the performance measures, important unobserved differences among centers, possibly related to their propensity to produce impacts, appear to remain.

**Figure 1. Design of Analysis of Job Corps Performance Measures and Impact Estimates**



**Table 1. Average Baseline Characteristics, by Overall Center Performance Tercile**

	Unadjusted Overall Center Performance Tercile			<i>p-value</i>
	Low	Medium	High	
<b><i>Selected NJCS Baseline Characteristics</i></b>				
<b>Demographic Characteristics</b>				
Non-Hispanic White	0.245	0.344	0.391	0.023**
Non-Hispanic Black	0.558	0.479	0.249	0.000***
Hispanic	0.139	0.106	0.227	0.017**
Other race	0.058	0.071	0.133	0.040**
Female	0.388	0.361	0.399	0.663
Native language English	0.897	0.916	0.799	0.003***
Native language Spanish	0.061	0.048	0.124	0.026**
Native language other	0.042	0.035	0.077	0.066*
Age 15-17	0.443	0.447	0.427	0.708
Age 18-20	0.395	0.401	0.415	0.498
Age >20	0.162	0.153	0.158	0.817
<b>Education and Skills</b>				
High school degree	0.151	0.152	0.191	0.034**
GED	0.042	0.047	0.057	0.147
Vocational degree	0.025	0.024	0.029	0.465
Highest grade completed 0-8	0.167	0.161	0.125	0.008***
Highest grade completed 9-11	0.659	0.657	0.649	0.803
Highest grade completed >11	0.174	0.181	0.226	0.009***
<b>Employment History</b>				
Currently working	0.202	0.205	0.228	0.203
Earnings in past year <\$1,000	0.507	0.483	0.497	0.590
Earnings in past year \$1,000-\$4,999	0.285	0.296	0.292	0.771
Earnings in past year \$5,000-9,999	0.142	0.146	0.139	0.821
Earnings in past year >\$10,000	0.066	0.075	0.071	0.596
Physical or emotional problem that limited work	0.054	0.050	0.058	0.517
<b>Family Status</b>				
Has child	0.193	0.168	0.148	0.142
<b>Socioeconomic Status</b>				
Did not receive food stamps over past year	0.574	0.602	0.630	0.088*
Received food stamps some of past year	0.058	0.074	0.065	0.092*
Received food stamps all of past year	0.368	0.325	0.306	0.035**
<b>Criminal History</b>				
Ever arrested	0.267	0.298	0.301	0.231
<b>Drug Use</b>				
Used no drugs over past year	0.711	0.663	0.622	0.001***
Used hard drugs occasionally over past year	0.040	0.058	0.101	0.000***
Used hard drugs frequently over past year	0.005	0.014	0.026	0.000***
<b><i>Selected ETA- 652 Baseline Characteristics</i></b>				
<b>Demographic Characteristics</b>				
Male	0.612	0.639	0.601	0.663
Non-Hispanic White	0.266	0.368	0.429	0.020**
Non-Hispanic Black	0.587	0.511	0.269	0.000***
Hispanic	0.109	0.079	0.197	0.020**
American Indian	0.028	0.032	0.075	0.249
Asian	0.010	0.010	0.031	0.005***
Age 14-17	0.446	0.447	0.429	0.712
Age 18-20	0.393	0.401	0.413	0.493
Age >20	0.161	0.153	0.158	0.857
<b>Education and Skills</b>				
Highest grade completed 0-8	0.178	0.175	0.124	0.002***
Highest grade completed 9-11	0.638	0.634	0.643	0.873

	Unadjusted Overall Center Performance Tercile			<i>p</i> -value
	Low	Medium	High	
Highest grade completed >11	0.184	0.191	0.233	0.020**
<b>Employment History</b>				
Estimated annual income \$0-\$400	0.010	0.014	0.022	0.042**
Estimated annual income \$401-\$6,528	0.236	0.265	0.283	0.210
Estimated annual income >\$6,529	0.256	0.266	0.245	0.677
Estimated annual income missing	0.497	0.455	0.451	0.377
<b>Socioeconomic Status</b>				
Receiving public assistance	0.458	0.403	0.389	0.034**
<b>Health and Health Care</b>				
Covered by health insurance or Medicaid	0.328	0.363	0.432	0.013**
<b>Local Area Characteristics</b>				
<b>Demographic Characteristics</b>				
Percentage white	0.708	0.740	0.790	0.014**
Percentage black	0.221	0.195	0.093	0.000***
Average household size	2.723	2.683	2.789	0.037**
Percentage urban	0.750	0.699	0.772	0.127
Percentage of families with a female head	0.199	0.192	0.171	0.020**
Percentage foreign-born	0.621	0.563	0.835	0.226
Total births	10512	7805	18741	0.037**
Percentage of births to teens <18 years	0.057	0.051	0.049	0.032**
<b>Crime</b>				
Deaths by homicide and legal intervention (rate)	0.000	0.000	0.000	0.012**
Percentage of population in juvenile institutions	0.000	0.000	0.001	0.023**
<b>Economic Characteristics</b>				
Percentage of families in poverty	0.140	0.121	0.121	0.129
Median household income	31726	33230	34064	0.049**
Percent households with income:				
<\$5,000	0.089	0.076	0.066	0.000***
\$5,000-\$9,999	0.107	0.104	0.101	0.339
\$10,000-\$14,999	0.099	0.095	0.097	0.590
\$15,000-\$24,999	0.186	0.184	0.187	0.810
\$25,000-\$49,999	0.320	0.330	0.338	0.003***
\$50,000-\$99,999	0.166	0.174	0.176	0.593
>\$100,000	0.032	0.036	0.034	0.707
Unemployment rate, 16+	0.061	0.060	0.067	0.117
<b>Number of Centers</b>	<b>33</b>	<b>33</b>	<b>34</b>	

Sources: Performance measure data, NJCS baseline survey, ETA-652 intake form, 2008 ARF.

Notes: All centers are weighted equally; when constructing center-level averages, baseline characteristics are weighted using the baseline weight. Terciles are based on the three-year average overall rating. The reported p-value refers to an F-test which tests whether the three groups are jointly significant.

\* Statistically significant at the 10 percent level.

\*\* Statistically significant at the 5 percent level.

\*\*\* Statistically significant at the 1 percent level.

**Table 2. Correlations between Unadjusted Center Performance and Adjusted Center Performance, All Components in All Years**

Performance Measure	Correlation Between Unadjusted and Adjusted Performance Measures							
	NJCS-Adjusted				ETA-652-Adjusted			
	PY94	PY95	PY96	Multiyear Average	PY94	PY95	PY96	Multiyear Average
Overall	0.54	0.69	0.65	0.58	0.48	0.58	0.59	0.53
Reading Gains	0.54	0.74	--	0.74	0.61	0.67	--	0.64
Math Gains	0.66	0.82	--	0.75	0.55	0.64	--	0.56
GED Rate	0.53	0.64	0.64	0.49	0.39	0.54	0.57	0.45
Vocational Completion Rate	0.63	0.71	0.71	0.77	0.63	0.65	0.67	0.65
Placement Rate	0.55	0.56	0.51	0.55	0.48	0.51	0.52	0.49
Average Wage	0.59	0.40	0.48	0.46	0.45	0.41	0.48	0.40
Quality Placement	0.74	0.66	0.65	0.63	0.55	0.53	0.54	0.49
Full-Time	--	0.55	0.65	0.56	--	0.50	0.54	0.52
ARPA Rating	0.72	0.62	--	0.66	0.60	0.62	--	0.58

Sample size = 100 centers.

Sources: Performance measure data, NJCS baseline survey, ETA-652 intake form, 2008 ARF.

Notes: All correlations are statistically significant at the 1 percent level. NJCS-adjusted and ETA-652-adjusted ratings are based on adjustments that also include local area characteristics (from the 2008 ARF) but not center characteristics. NJCS adjustment controls for participant characteristics from the NJCS baseline survey using a forward-selection stepwise regression with inclusion and exclusion p-value thresholds of 0.20. ETA-652 adjustment controls for participant characteristics from the ETA-652 intake form, with all variables included in the model. Both adjustments use center-level averages of participant characteristics for the NJCS baseline sample. All centers are weighted equally; when constructing center-level averages, baseline characteristics are weighted using the baseline weight.

**Table 3. Correlations between Center-Level Impacts and Multiyear Average Performance Ratings (Unadjusted, NJCS- Adjusted, and ETA- 652- Adjusted)**

Outcome for Impact Estimate	Overall Rating			GED Rating			Vocational Completion Rating			Average Wage Rating			Placement Rating		
	Unadj	NJCS-Adj	ETA-Adj	Unadj	NJCS-Adj	ETA-Adj	Unadj	NJCS-Adj	ETA-Adj	Unadj	NJCS-Adj	ETA-Adj	Unadj	NJCS-Adj	ETA-Adj
Any Educational Services	-0.02	-0.06	-0.01	-0.08	0.08	-0.02	0.08	0.06	0.07	0.09	0.13	0.15	0.05	-0.75	0.04
Hours of Educational Services	0.17*	-0.03	0.08	0.02	-0.03	-0.03	0.19*	0.13	0.06	-0.01	-0.04	-0.04	0.19*	0.16	0.12
GED Receipt	0.15	-0.08	-0.10	0.12	-0.10	-0.11	0.13	0.02	-0.12	0.05	0.10	-0.08	0.13	0.06	-0.10
Vocational Certificate Receipt	0.13	-0.04	-0.01	0.00	-0.06	-0.14	0.14	0.04	0.03	-0.11	0.05	-0.07	0.23**	0.12	0.08
Ever Arrested	-0.02	-0.06	-0.09	0.02	0.07	-0.03	-0.06	-0.10	-0.12	-0.04	-0.08	-0.01	-0.04	-0.04	0.03
1997 Annual Earnings	-0.14	-0.19*	-0.22**	-0.22**	-0.32***	-0.25**	-0.08	-0.05	-0.13	0.07	0.03	-0.18*	0.03	0.04	-0.01
1998 Annual Earnings	-0.09	-0.11	-0.11	-0.28***	-0.32***	-0.23**	-0.02	-0.01	-0.01	0.05	0.02	-0.18*	0.08	0.11	0.03

Sample size = 100 centers.

Sources: Performance measure data, NJCS baseline survey, ETA-652 intake form, 2008 ARF, NJCS follow-up surveys.

Notes: Table shows the correlation based on a multiyear average of the center’s performance rating and the center-level impact estimate. NJCS-adjusted and ETA-652-adjusted ratings are based on adjustments that also include local area characteristics (from the 2008 ARF) but not center characteristics. NJCS adjustment controls for participant characteristics from the NJCS baseline survey using a forward-selection stepwise regression with inclusion and exclusion p-value thresholds of 0.20. ETA-652 adjustment controls for participant characteristics from the ETA-652 intake form, with all variables included in the model. Both adjustments use center-level averages of participant characteristics for the NJCS baseline sample. All centers are weighted equally; when constructing center-level averages, baseline characteristics are weighted using the baseline weight. Impacts are calculated using the follow-up weight and are adjusted for differences in participation across research groups.

\* Statistically significant at the 10 percent level.  
 \*\* Statistically significant at the 5 percent level.  
 \*\*\* Statistically significant at the 1 percent level.





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