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ABSTRACT

A study was made of the impact of Job Training Partnership Act (JTPA) Title II-A on the earnings and employment of four target groups (adult women and men and female and male out-of-school youth) over the first 18 months after random assignment to a treatment group that had access to the program or a control group, which did not. The study involved 17,000 JTPA applicants throughout the country from November 1987 through September 1989. Follow-up interviews were conducted at least 18 months after assignment to one of the groups. Some of the findings were the following: (1) JTPA Title II-A had generally positive effects on the earnings and employment of adults in the study sites; (2) access to the program increased the average earnings of the adult women in the treatment group by an estimated $539 or 7 percent of the control group mean; (3) earnings of adult men rose $550 or 4.5 percent over that of the control group, and 2.8 percent more of the enrolled men were employed than the control group; (4) the program had little or no effect on the average earnings of female youth; and (5) the program reduced the earnings of male youth by $854 (8 percent). Findings were influenced by barriers to employment such as race, language, and ethnicity. The study concluded that JTPA is helping to raise the earnings of many people, especially adults, but it also is not helping some groups. It suggested finding new ways to serve such populations. (11 references) (KC)

A report to the
U.S. Department of Labor
Larry L. Orr, Project Director

The National JTPA Study

Title II-A Impacts on Earnings and Employment at 18 Months

Executive Summary

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Bethesda, Maryland Abt Associates Inc. May 1992

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The National JTPA Study

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Reports in the National JTPA Study

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The National JTPA Study: Impacts and Costs of Title II-A. Bethesda, Md.: Abt Associates Inc., 1993.

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This Executive Summary, and the report on which it is based, represents the ideas and efforts of many persons from different organizations who worked together as an unusually effective team. The co-principal investigators for the National JTPA Study impact and cost-benefit analyses are Howard S. Bloom, New York University, Larry L. Orr, Abt Associates Inc., and Judith M. Gueron, Manpower Demonstration Research Corporation (MDRC). Fred Doolittle, MDRC, is Project Director for implementation

of the study and process analysis. Stephen H. Bell, Abt Associates Inc., and George Cave, MDRC, are the senior economists responsible for the impact analyses of adult women and youths, respectively.

Other members of the research team who made extensive contributions to the 18-month impact analysis and this Executive Summary include Johannes (Hans) Bos of New York University, Winston Lin and Robert Kornfeld of Abt Associates Inc., Cyril Toussaint of Manpower Demonstration Research Corporation (MDRC), and Wendy Campbell of Research Findings in Print. Hans and Winston provided substantial input to the analysis that produced the findings in the report and wrote portions of its appendices. In addition, Winston made major methodological contributions to the analysis and Hans, with Wendy, designed the exhibits and this document. Hans, Winston, and Cyril did the computations for the report. Robert contributed much of the analysis for one of the appendices of the full report. Wendy served as the editor of the report and wove together the many threads from many authors to make it speak with one voice.

A major role in crafting the report was played by Judith M. Gueron, president of MDRC, and co-principal investigator of the study, and Stephen Kennedy, Chief Social Scientist of Abt Associates Inc., and technical reviewer for the study. Both Judy and Steve had a major influence on the structure, content, and focus of the report.

Other members of the research team who contributed to the report include Marjorie Morrissey of the National Opinion Research Center (NORC), who served as survey director for the First Follow-up Survey; Michelle Wood of Abt Associates, who supervised the collection and processing of the Background Information Forms; Robert Teitel, Kevin Ward, Peter Hurley, Aniruddha Bonnerjee, David Bell, Rhonda Byrnes, and Neelima Grover, all of Abt Associates, who prepared the data base for the 18-month analysis; and Robin Weiss-Castro, Kristen Kamp, and Margie Washington, who prepared this volume. At MDRC James Kemple and John Wallace served as liaisons between the impact analysis and the implementation analysis; Colleen Galvin assisted in preparing the impact analysis for youths; and Robert Winthrop contributed to Chapter 3 in the report.

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Steve Corona and Betty Lou Nault—Northeast (Fort Wayne) Indiana

Robert Ballantyne and Bonnie Pisarik—East Central (Cedar Rapids) Iowa

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Irma Caballero and Billie O'Dowdy—Corpus Christi/Nueces County, Texas

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Executive Summary

THE National JTPA Study was commissioned by the Employment and Training Administration of the U.S. Department of Labor (DOL) in 1986 to measure the impacts and costs of selected employment and training programs funded under Title II-A of the Job Training Partnership Act of 1982, which is targeted to serve economically disadvantaged Americans. This Executive Summary presents estimates of the impacts of the program on the earnings and employment of adults and out-of-school youths in 16 local service delivery areas during the first 18 months after acceptance into the program.

The report on which this Executive Summary is based presents interim findings of the study (Bloom, Orr, Cave, Bell, and Doolittle, forthcoming). Estimates of longer term program impacts on earnings, employment, and welfare benefits, and an analysis of program costs and benefits, will appear in the final report of the study (forthcoming, from Abt Associates Inc.). A companion report on the study's implementation (Kemple, Doolittle, and Wallace, forthcoming), describes the JTPA programs operated in the study sites and the types of JTPA-funded services provided to members of the study sample.

The National JTPA Study

This study grew out of the recommendations of the Job Training Longitudinal Study Advisory Panel, a group of nationally recognized experts in employment and training research formed to advise DOL on the evaluation of JTPA (Stromsdorfer et al., 1985). After reviewing evaluations of the Comprehensive Employment and Training Act (CETA) programs, the Panel concluded that the only reliable way to measure the impacts of employment and training programs was to conduct a classical experiment, in which program applicants are randomly assigned either to a *treatment group*, which is allowed

access to the program, or to a *control group*, which is not. Random assignment assures that the two groups do not differ systematically in any way except access to the program. Thus, subject only to the uncertainty associated with sampling error, any subsequent differences in outcomes between the two groups can confidently be attributed to the program. These differences are termed the *program impacts*.

Although random assignment designs have been used to evaluate a number of demonstration projects and state programs, the Employment and Training Administration was the first federal agency to apply this approach to an ongoing national program. Because of its rigorous design, the National JTPA Study provides the first fully reliable estimates of the impacts of the largest employment and training program sponsored by the federal government.

In the National JTPA Study 20,601 JTPA applicants in 16 service delivery areas (SDAs) across the country were randomly assigned to the treatment group or the control group over the period November 1987 through September 1989. The earnings and employment outcomes of both groups were then measured through follow-up surveys and administrative records obtained from state unemployment insurance agencies. Data on the baseline characteristics of the two groups were collected as part of the program intake process, and information about the employment and training services received was obtained from follow-up surveys and SDA records.

The study sites were not chosen to be representative of the nation in a statistical sense, but they do reflect the diversity of local programs and local environments in JTPA.[1] In particular, the performance of the sites during the study period, as measured by JTPA performance indicators, was not noticeably different from that of all SDAs nationally.

The 18-Month Impact Analysis

This report provides estimates of the impact of JTPA Title II-A on the earnings and employment of four *target groups*—adult women and men (ages 22 and older) and female and male out-of-school youths (ages 16 to 21)—over the first 18 months after random assignment. Adult women make up 30 percent of the national JTPA population; adult men,

1. See Bloom, Orr, Cave, Bell, and Doolittle (forthcoming) and Kemple, Doolittle, and Wallace (forthcoming) for comparisons of the 16 study sites with all SDAs nationally.

25 percent; and out-of-school youths, 23 percent. In-school youths, who are not included in this study, form the remaining 22 percent.

The analysis is based on a sample of 17,026 sample members whose First Follow-up Survey interview was scheduled at least 18 months after random assignment.[2] For each target group, we estimated impacts for a number of different subgroups, defined by the types of program services recommended for them and by their baseline characteristics.

Because the study was designed to measure the effects of JTPA as it normally operates, the analysis investigates which JTPA-funded services were working well for those recommended to receive them; the analysis does not assess possible alternatives to the existing program. By identifying those groups for whom Title II-A is having positive effects and those for whom it is having no effect—or even a negative effect—we hope to help policymakers in their efforts to identify and improve those parts of the program that need improvement. This analysis cannot, however, tell policymakers *how* to improve the program, since it does not compare alternative programs for similar people. Rather, it measures only the effects of the existing program on the people it actually served over the study period.

In the remainder of this Executive Summary we first provide an overview of the estimated effects of the program on the earnings and employment of the four main target groups—adult women and men, and female and male youths. We then present more detailed findings for adult and youth subgroups in turn, and conclude with implications of the findings for the JTPA program and future research.

Overall Impacts on Earnings and Employment, by Target Group

JTPA Title II-A had generally positive effects on the earnings and employment of adults in the study sites. As shown in the top panel of Exhibit S.1, access to the program increased the average 18-month earnings of the adult women randomly assigned to the treatment group ("JTPA assignees") by an estimated $539, or 7.2 percent of the control group mean. Access to the program also increased the percentage of women employed at some time during the follow-up period by 2.1 percentage points. Because these estimates are

2. Within this 18-month study sample, First Follow-up Survey data are available for 14,446 sample members, or 84.8 percent of the sample.

Exhibit S.1 Impacts on Total 18-Month Earnings and Employment: JTPA Assignees and Enrollees, by Target Group

	Adults		*Out-of-school youths*	
Impact on:	*Women* (1)	*Men* (2)	*Female* (3)	*Male* (4)
		Per assignee		
Earnings				
In $	$ 539***	$ 550	$ -182	$ -854**
As a %	7.2%	4.5%	-2.9%	-7.9%
Percentage employed[a]	2.1**	2.8**	2.8	1.5
Sample size (assignees and control group)	*6,474*	*4,419*	*2,300*	*1,748*
		Per enrollee		
Earnings				
In $	$ 873[b]	$ 935[b]	$ -295[b]	$ -1,355[b]
As a %	12.2%	6.8%	-4.6%	-11.6%
Percentage employed[a]	3.5[b]	4.8[b]	4.5[b]	2.4[b]

a. At any time during the follow-up period.
b. Tests of statistical significance were not performed for impacts per enrollee.
* Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

statistically significant (as indicated by the asterisks beside them), we take them to be reliable evidence of positive impacts on earnings. In this analysis we accept only statistically significant estimates as evidence of real program effects.

The estimated program impacts on the earnings of adult men—an earnings gain of $550, or 4.5 percent, and an increase in the percentage employed of 2.8 percentage points—were similar in size to those for adult women, but the estimated impact on earnings was not statistically significant.

In contrast to the findings for adults, the program had little or no effect on the average earnings of female youths (a statistically *in*significant earnings loss of -$182, or -2.9 percent), and the program actually reduced the earnings of male youths—as evidenced by a large, statistically significant loss of -$854, or -7.9 percent, over the 18-month period. Access to JTPA had no significant effect on the employment rates of either female or male youths.

The estimates discussed above are average impacts on the earnings and employment of all sample members assigned to the treatment group. Although all of these assignees were

given access to JTPA, not all of them actually enrolled in the program. The bottom panel of Exhibit S.1 presents our best estimate of program impacts on the earnings and employment of *JTPA enrollees* (assignees who were later enrolled).[3]

Estimated impacts per enrollee—both gains and losses—were about 60 percent to 70 percent larger than impacts per assignee, depending on the target group. The estimated earnings gains of adult women and men who were enrolled in JTPA were $873 and $935, respectively. Impacts on youths were earnings losses of -$295 for females and -$1,355 for males. The impact of the program on the percentage of enrollees in each target group who were employed ranged from an increase of 2.4 percentage points for male youths to an increase of 4.8 percentage points for adult men.

It is important to understand that the impact per assignee and the impact per enrollee are not two different estimates of the overall effect of the program. They simply spread the total estimated program effect on the sample over a larger group (assignees) or a smaller group (enrollees). Thus, the two sets of estimates are entirely consistent; they just measure different concepts. In the remainder of this Executive Summary, we focus on the estimated impacts per assignee, because they are the most reliable, direct experimental evidence of the effects of the program.

Impacts on earnings reflect program effects on both the amount of time treatment group members worked and how much they were paid per hour worked. Exhibit S.2 shows estimated impacts on the average number of hours worked and average earnings per hour worked over the follow-up period, expressed as percentages of the corresponding control group means. The percentage impacts on these two *components* of earnings approximately sum to the percentage impact on total earnings per assignee.[4]

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3. To derive estimates for enrollees, it was necessary to assume that there was no impact on the earnings and employment of nonenrollees. There is evidence, however, that about half of all nonenrollees had some contact with the program after random assignment and received some—usually minimal—program services. As a result, the estimates in the bottom panel probably overstate somewhat the true impact per enrollee, while the estimated impacts per assignee understate the true impact per enrollee. Thus, the true impact on enrollees probably lies somewhere between these two estimates. The estimates for enrollees also adjust for the fact that 3 percent of the control group were enrolled in JTPA, despite the experiment's embargo on their participation.

4. Because the impacts on earnings per hour worked were estimated indirectly, we did not calculate significance levels for these impacts.

Exhibit S.2 Percentage Impacts on Total 18-Month Earnings and Its Components: JTPA Assignees and Enrollees, by Target Group

Percentage impact on:	*Adult women (1)*	*Adult men (2)*	*Female youths (3)*	*Male youths (4)*
Earnings per assignee	7.2%***	4.5%	-2.9%	-7.9%**
Hours worked per assignee	3.7	4.5**	-4.7	-6.8**
Earnings per hour worked	3.4[a]	0.0[a]	1.8[a]	-1.2[a]
Sample size	*6,474*	*4,419*	*2,300*	*1,748*

a. Tests of statistical significance were not performed for impacts on earnings per hour worked.
* Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

As shown in the exhibit, the 7.2 percent increase in earnings for adult women reflects a combination of a 3.7 percent increase in hours worked and a 3.4 percent increase in average hourly earnings among those who worked. The earnings gain for adult men, on the other hand, was entirely attributable to a 4.5 percent rise in hours worked, with no increase in hourly earnings.

Among female youths a -4.7 percent *reduction* in hours worked more than offset a 1.8 percent *increase* in hourly earnings to produce the negligible impact on total earnings that we saw earlier. Among male youth the -7.9 percent loss in total earnings was primarily attributable to a decrease in hours worked (of -6.8 percent).

Overall, then, JTPA appears to have had modest positive effects on the earnings and employment of adult women and men, little or no effect on the earnings and employment of female youths, and substantial negative effects on the earnings and employment of male youths.

Findings for Subgroups of Adult Women and Men

The impacts presented in the previous section are estimates of the average effect of the program on each target group in the study sample. Because JTPA provides a number of different employment and training services to a wide range of program applicants, it is important to analyze how program impacts varied with the type of service offered and the characteristics of the applicants. In this section we therefore present estimates of program impacts on the earnings of *subgroups* of adults, defined by the services program intake staff recommended for them and by selected personal characteristics.

SERVICE STRATEGIES RECOMMENDED

For purposes of this analysis, members of the study sample were classified into three *service strategy subgroups* based on the services program intake staff recommended for each sample member prior to random assignment.[5] Applicants recommended for classroom training in occupational skills were placed in the *classroom training* subgroup. Those recommended for on-the-job training (OJT) were placed in the *OJT/JSA* subgroup (so named because many of the treatment group members in this subgroup were enrolled in job search assistance while searching for either an on-the-job training position or an unsubsidized job). Because JTPA staff often recommend combinations and sequences of services, applicants placed in either of these subgroups may also have been recommended for any of several other services, including job search assistance, basic education, work experience, or miscellaneous other services. Those applicants recommended for one or more of these services—but neither classroom training in occupational skills nor on-the-job training—were placed in the third subgroup: *other services*.[6]

As shown in Exhibit S.3, nearly half of all adult men in the sample were recommended for the OJT/JSA service strategy, with the remainder about equally divided between the classroom training and other services strategies. Women were more likely than men to be recommended for classroom training (44 percent versus 25 percent) and less likely to be recommended for OJT/JSA (35 percent versus 49 percent).

It is important to note that program intake staff made their recommendations based on the employment needs and qualifications of the individual applicants, as well as their personal preferences. The service strategy subgroups therefore differed from one another not only in terms of the service recommendations but also in terms of personal characteristics.

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5. Service strategy subgroups were defined based on the services recommended rather than the services received for two reasons. First, it was not possible to identify control group members who were comparable to the treatment group members who received particular JTPA services, whereas it *was* possible to identify control group members who were recommended for the same services as treatment group members. Second, and more fundamentally, since program staff can recommend services but cannot ensure that applicants participate in those services, recommended services represent the operative program decision to be evaluated.

6. A few applicants designated for this other service subgroup were recommended for classroom training in occupational skills or on-the-job training as part of "customized training."

Exhibit S.3 Service Strategies Recommended: Adult JTPA Assignees, by Gender

Service strategy	*Adult women (1)*	*Adult men (2)*
Classroom training	44.0%	24.6%
OJT/JSA	35.0	48.7
Other services	21.0	26.7
Sample size	*4,465*	*3,759*

Enrollment Rates and Duration, by Service Strategy Subgroup

After assessment and recommendation of services, two-thirds of the applicants accepted by intake staff were randomly assigned to the treatment group, which was allowed access to JTPA, and one-third were assigned to the control group, which was excluded from JTPA for 18 months.[7]

As noted above, not all treatment group members would ultimately become enrolled in JTPA. Enrollment rates differed by service strategy subgroup, but overall they were quite similar for adult women and men. Within the treatment group as a whole, 65 percent of adult women and 61 percent of adult men were enrolled in JTPA at some time during the 18-month follow-up period. Enrollment rates were highest in the classroom training subgroup (73 percent and 71 percent for adult women and men, respectively) and lowest in the OJT/JSA subgroup (55 percent and 57 percent, respectively).

The duration of enrollment in the program also differed by service strategy, ranging from a median length of about 2 months for women and men in the OJT/JSA and other services subgroups to median lengths of enrollment of 4 to 6 months in the classroom training subgroup. There was little difference by gender in the duration of enrollment except that women in classroom training tended to stay in the program about two months longer than men.

7. This embargo on services to control group members was successfully implemented. Over the course of the 18-month follow-up period, only 3 percent of control group members became enrolled in JTPA.

SERVICES RECEIVED, BY SERVICE STRATEGY SUBGROUP

Within the *classroom training subgroup* the most common JTPA services received by treatment group members who became enrolled in the program were classroom training in occupational skills and basic education. Enrollees in the *OJT/JSA subgroup* were most likely to receive on-the-job training or job search assistance, or both. In the *other services subgroup* the most common services adults received were job search assistance and miscellaneous services, such as job-readiness training. Exhibit S.4 shows that between 82 percent and 89 percent of the enrollees in each service strategy subgroup received one or both of the two most common services received by members of that subgroup. Thus, the three service strategy definitions represent distinctly different mixes of services actually received, as well as services recommended.

The impacts of the program do not depend solely, however, on the JTPA services received by those in the treatment group. Instead, the impacts reflect the *difference* between the services received by those given access to JTPA and the services they would have received if they had been excluded from the program. That is, the benchmark against which we measure the effects of JTPA is the services available and used elsewhere in the community, not a total absence of services. Our measure of the services the treatment group would have received if they had been excluded from the program is those received by the control group, who were excluded from the program.

Since we measure impacts per assignee (treatment group member), the relevant comparison is in terms of services per assignee, including those who were never enrolled in JTPA. As expected, the largest treatment-control group difference in the *classroom training subgroup* was in receipt of classroom training in occupational skills. Among adult women 49 percent of the treatment group received this service, whereas only 29 percent of the control group did. Among adult men these figures were 40 percent versus 24 percent.

Adult treatment group members in the *OJT/JSA subgroup* were much more likely than control group members to receive on-the-job training. Twenty-nine percent of the women and 27 percent of the men in the treatment group in this subgroup received OJT, whereas less than 1 percent of the corresponding control groups received this service, since OJT is typically not funded by non-JTPA providers. We were not able to measure control group receipt of job search assistance from non-JTPA providers, and so we could not estimate the treatment-control group difference for that service.

Exhibit S.4 Most Common JTPA Services Received by Treatment Group Members Who Were Enrolled in the Program: Adults, by Gender and Service Strategy Subgroup

	% of enrollees receiving one or both services	
Two most common services in service strategy subgroup	*Adult women (1)*	*Adult men (2)*
	Classroom training subgroup	
Classroom training in occupational skills/basic education[a]	88.8%	85.5%
	OJT/JSA subgroup	
On-the-job training/ job search assistance	87.8%	86.5%
	Other services subgroup	
Job search assistance/ miscellaneous[b]	82.3%	88.7%
Sample size	*2,895*	*2,305*

a. "Basic education" includes Adult Basic Education (ABE), high school or General Educational Development (GED) preparation, and English as a Second Language (ESL).

b. "Miscellaneous" includes assessment, job-readiness training, customized training, vocational exploration job shadowing, and tryout employment, among other services.

As noted earlier, the most common JTPA services provided to adults in the *other services subgroup* were job search assistance and miscellaneous services. Around 25 percent of adult treatment group members in this subgroup received the former service, and around 30 percent received the latter. We were unable to measure receipt of these services from non-JTPA providers and therefore cannot estimate the treatment-control group difference.

On the basis of these data, we conclude that JTPA represented a substantial increment to the services that were available at the 16 study sites, at least in the cases of the classroom training and OJT/JSA subgroups, for which we could measure the increment.

Impacts on Educational Attainment, by Service Strategy Subgroup

An intermediate effect of the incremental services received by the treatment group was an increase in educational attainment among those high school dropouts who received some

employment or training service during the 18-month follow-up period. Dropouts made up around 30 percent of the adult target groups.

As might be expected, the increase in educational attainment was greatest among those dropouts recommended for the *classroom training* service strategy. Exhibit S.5 indicates that nearly 30 percent of the adult dropouts in the classroom training treatment group received a training-related high school diploma or General Educational Development (GED) certificate, whereas only 11 percent of the control group did—for impacts in the cases of both genders that were highly significant. There were smaller, but still statistically significant, increases in the proportions of female dropouts in the *other services subgroup* and male dropouts in the *OJT/JSA subgroup* who attained a high school credential as a result of the program. But there were no significant effects on educational attainment among women in the OJT/JSA subgroup or men in the other services subgroup.

Impacts on Earnings, by Service Strategy Subgroup

Exhibit S.6 shows the estimated impacts of the incremental services received because of access to JTPA on the earnings of adult women and men in each service strategy subgroup. As shown in the second column of the top panel of the exhibit, program impacts on the earnings of adult women in the *classroom training* subgroup followed the expected pattern for this type of service: an earnings loss in the first quarter, representing an initial

Exhibit S.5 *Impacts on Attainment of a Training-Related High School Diploma or GED Certificate: Adult JTPA Assignees Who Were High School Dropouts, by Gender*

Service strategy subgroup	Adult women			Adult men		
	% attaining HS/GED		Impact, in % points	% attaining HS/GED		Impact, in % points
	Assignees (1)	Controls (2)	(3)	Assignees (4)	Controls (5)	(6)
Classroom training	29.2%	11.3%	17.9***	27.3%	11.3%	16.0***
OJT/JSA	9.1	10.9	-1.8	8.4	4.4	4.0**
Other services	17.4	9.8	7.6**	10.2	8.7	1.5
All subgroups	19.1	10.8	8.2***	12.7	6.7	6.0***
Sample size [a]			*1,515*			*1,258*

a. Assignees and control group members who were high school dropouts and who received some employment and training service during the follow-up period.

* Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

investment of time in training, followed by a payback period of rising earnings gains in the next five quarters, with statistically significant gains of $144 and $188 in the last two quarters of the follow-up period. The overall 18-month earnings gain of $398 for women in this subgroup was not statistically significant. This gain reflected an estimated 8.9 percent program-induced increase in the hourly earnings of women who worked, which more than offset an insignificant -2.5 percent drop in the average number of hours employed over the follow-up period (estimates not shown in the exhibit).

The estimated impacts on the earnings of adult men in the classroom training subgroup are less clear. None of the impacts on quarterly earnings was significantly different from zero, nor was the overall impact on total earnings over the follow-up period. Moreover, the program had no significant impact on the employment rate or hours of work over the follow-up period for this subgroup of men (estimates not shown). Thus, there is no evidence of a program impact on the earnings and employment of this subgroup.

In contrast to the pattern for women in the classroom training subgroup, women in the *OJT/JSA subgroup* (middle panel of the exhibit) showed an immediate and sustained positive impact on average earnings throughout the follow-up period, as might be expected with a strategy that emphasizes immediate placement in either an on-the-job training position or a regular job. Women in the OJT/JSA subgroup experienced significant quarterly earnings impacts of $109 to $144 in five of the six quarters, with an overall gain of $742 over the 18-month follow-up period.

Men in the OJT/JSA subgroup experienced estimated gains of similar magnitude in five of the six quarters and over the follow-up period as a whole, although the estimated impacts were less often statistically significant. Over the follow-up period as a whole, men in this subgroup enjoyed earnings gains of $781.

Both men and women in the OJT/JSA subgroup experienced a positive impact on hours worked; and men, on their employment rate (estimates not shown in the exhibit). Indeed, the earnings gains of both women and men in this subgroup were due primarily to increases in the number of hours worked, rather than to higher hourly earnings while employed.

In contrast to the sustained, positive impact on earnings in the OJT/JSA subgroup, the program appears to have had only a short-lived effect on the earnings of adult women, and

Exhibit S.6 *Impacts on Quarterly and 18-Month Earnings: Adult JTPA Assignees, by Gender and Service Strategy Subgroup*

	Adult women		*Adult men*	
Period	*Control mean* (1)	*Impact per assignee* (2)	*Control mean* (3)	*Impact per assignee* (4)
		Classroom training subgroup		
Quarter 1	$ 714	$ -70*	$ 1,440	$ -101
2	938	5	1,714	126
3	1,066	52	1,884	213
4	1,189	79	2,184	50
5	1,253	144**	2,171	151
6	1,230	188***	2,387	-21
All quarters	6,391	398	11,780	418
Sample size[a]		*2,847*		*1,058*
		OJT/JSA subgroup		
Quarter 1	$ 1,143	$ 144***	$ 1,757	$ 54
2	1,379	81	2,014	135
3	1,449	129**	2,133	164*
4	1,520	109*	2,199	94
5	1,546	142**	2,183	133
6	1,570	138**	2,169	201**
All quarters	8,607	742**	12,456	781*
Sample size[a]		*2,287*		*2,250*
		Other services subgroup		
Quarter 1	$ 960	$ 39	$ 1,677	$ 74
2	1,198	132	1,951	104
3	1,248	220**	2,123	44
4	1,471	22	2,199	44
5	1,535	2	2,292	13
6	1,548	42	2,274	-19
All quarters	7,960	457	12,516	261
Sample size[a]		*1,340*		*1,112*

a. Assignees and control group members combined.

* Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

virtually no effect on the earnings of adult men, in the *other services subgroup* (bottom panel). JTPA had a significant impact on women's earnings of $220 in the second quarter, followed by smaller, insignificant gains in the later quarte . The estimated impacts on hours worked quarterly (not shown) mirrored this pattern—possibly reflecting quicker placement in jobs that were similar to those the female assignees would have eventually found without access to JTPA. For men in the other services subgroup, neither the estimated impacts on quarterly earnings nor the estimated impacts on hours of work (not shown) were statistically significant.

Overall, then, JTPA led to modest, statistically significant earnings gains for adult women in at least one quarter in all three service strategies. The timing of impacts was very different across the subgroups, however, and significant for the follow-up period as a whole only in the OJT/JSA subgroup. Significant impacts on the earnings of adult men were concentrated exclusively in the OJT/JSA subgroup.

It is important to iterate that the adults in the three service strategy subgroups differed not only in the services they received, but also in their personal characteristics. Our forthcoming reports will show that program intake staff tended to recommend the most job-ready applicants for the OJT/JSA service strategy. This difference is evident not only in the data on baseline characteristics of the three subgroups (not shown here) but also in the earnings of control group members over the follow-up period, shown in columns (1) and (3) of Exhibit S.6. These figures indicate that in the absence of program services women recommended for OJT/JSA would have earned substantially more than those recommended for classroom training and somewhat more than those recommended for other services. Among men the more job-ready applicants tended to be recommended for either OJT/JSA or other services; those men recommended for classroom training earned somewhat less over the follow-up period than either of the other two subgroups.

Because of these differences in the three subgroups, one cannot extrapolate the impacts for one service strategy subgroup to the women or men served by another. We cannot, for example, conclude that the program outcomes for adult men in the classroom training subgroup would be improved by recommending them for the OJT/JSA service strategy. We can only determine which service strategies were effective *for those applicants recommended for them*. Whether another service strategy would have been more effective cannot be determined on the basis of this study, since we did not observe alternative service approaches applied to comparable participant populations.

It is also important to bear in mind that the costs, as well as the impacts, of the three service strategies were likely to have varied, as may the longer term impacts. In our final report on this study, we will present an analysis that compares the costs of Title II-A to its impacts over a longer follow-up period.

Impacts on Earnings, by Ethnicity and Barriers to Employment

In addition to the three subgroups of women and men based on service strategy recommendations, we estimated program impacts on the 18-month earnings of a number of other subgroups, defined in terms of personal characteristics measured upon application to the program. These estimates help us determine whether the impacts of the program were concentrated within certain groups or broadly distributed across all adult women or men. In this Executive Summary we present the results for two such subgroups: the major *ethnic groups* and groups facing different *barriers to employment.*[8]

Exhibit S.7 presents the estimated program impacts on the earnings of *white, black, and Hispanic* women (column 3) and men (column 6). Among women the estimated impacts differed markedly by ethnic group, with white women showing significant earnings gains of $723 over the 18-month follow-up period; black women, an insignificant earnings gain of $457; and Hispanic women, an insignificant loss of roughly the same magnitude. Moreover, separate tests of the statistical significance of the differences *among* these impact estimates (not shown) indicate the differences among the estimates are likely to represent real differences in impact. The estimated impacts for adult men also differed substantially by ethnic group, but neither the estimated impacts for individual ethnic groups nor the differences in impacts among the subgroups were statistically significant and therefore could have arisen by chance.

In an attempt to narrow the range of possible explanations for these differences in impacts among women in different ethnic groups, we estimated adjusted impacts that controlled for differences in the distributions of the major ethnic groups across study sites and across service strategy subgroups. When we controlled for differences in the

8. Other key subgroups examined in the report on which this summary is based include those defined by work and training histories, public assistance history, household income and composition, public housing status, and age (Bloom, Orr, Cave, Bell, and Doolittle, forthcoming).

Exhibit S.7 Impacts on the 18-Month Earnings of Major Ethnic Groups: Adult JTPA Assignees, by Gender

	Adult women			Adult men		
Ethnic group	Sample size[a] (1)	Control mean (2)	Impact per assignee (3)	Sample size[a] (4)	Control mean (5)	Impact per assignee (6)
White, non-Hispanic	3,541	$ 8,007	$ 723***	2,668	$ 12,929	$ 625
Black, non-Hispanic	1,981	6,829	457	1,155	10,931	957
Hispanic	744	6,775	-414	400	13,555	-741
Full sample[b]	6,474	7,488	539***	4,419	12,306	550

a. Assignees and control group members combined.
b. Including the three major ethnic groups and American Indians, Alaskan Natives, Asians, and Pacific Islanders.
Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

distributions of the three groups of women across the *study sites*, the estimated impacts for the three ethnic groups were no longer significantly different from one another. This finding indicates that the differences in estimated impacts among women in different ethnic groups are in part attributable to *differences in the sites* in which the different ethnic groups were concentrated. In particular, Hispanic women were concentrated in those sites which had lower than average impacts for women in *all* ethnic groups. Once we adjust for these differences, we see no evidence that impacts differed across ethnic groups.

To determine whether the effects of the program varied with the degree of labor market disadvantage, we estimated impacts on earnings for subgroups defined by three barriers to employment: *welfare receipt*, *limited education*, and *limited recent work experience*.[9] The first three pairs of rows of Exhibit S.8 show the estimated impacts on earnings for the subgroups of women and men facing each of these barriers, compared with all other women and men.

The mean earnings levels of control group members, shown in columns 2 and 5 of the exhibit, illustrate that these barriers were indeed serious obstacles to employment. Control

9. *Welfare receipt* is defined as receiving Aid to Families with Dependent Children (AFDC), General Assistance, or any other cash welfare benefits upon application to JTPA. *Limited education* is defined as lack of a high school diploma or GED certificate; *limited recent work experience* is defined as having worked less than 13 weeks in the year prior to application to JTPA. These three measures of barriers to employment are similar to those used in other recent studies of JTPA programs (see U.S. General Accounting Office, 1989).

Exhibit S.8 Impacts on the 18-Month Earnings of Subgroups Facing Selected Barriers to Employment: Adult JTPA Assignees, by Gender

Barrier to employment (in italic)	Adult women			Adult men		
	Sample size[a] (1)	Control mean (2)	Impact per assignee (3)	Sample size[a] (4)	Control mean (5)	Impact per assignee (6)
Receiving cash welfare	2,446	$ 5,492	$ 387	611	$ 9,541	$ -46
No cash welfare	3,500	8,965	697***	3,808	13,032	624
No high school diploma or GED certificate	1,731	6,072	416	1,249	10,353	402
High school diploma or GED certificate	4,316	8,064	681***	2,873	13,352	863*
Worked less than 13 weeks in past 12 mos.	3,022	5,555	511**	2,027	10,308	207
Worked 13 weeks or more in past 12 mos.	2,622	9,956	668**	2,392	14,320	800*
Number of barriers						
None of the above	1,361	10,971	909**	1,960	15,142	979*
One of the above	1,655	7,950	802**	1,896	12,202	214
Two of the above	1,435	5,756	379	772	8,646	202
All three of the above	488	3,703	-213	149	7,423	725
Full sample	6,474	7,488	539***	4,419	12,306	550

a. Assignees and control group members combined.
* Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

group members in all three subgroups facing these barriers earned much less over the follow-up period than other women and men.

Among both women and men the estimated impacts tended to be larger for those *not* facing the barriers in question, although among women the differences in impacts between those facing and those not facing a particular barrier were smaller than the differences among men. Separate tests for the significance of these differences indicated, however, that any differences shown here may have arisen by chance.

Because some persons who were facing one of these barriers to employment may also have been facing one or both of the other barriers, these subgroups overlap to some degree. To achieve a clearer distinction among the subgroups in terms of the overall difficulty of becoming employed, the bottom panel of Exhibit S.8 categorizes the women and men in the sample by the *number* of these barriers they were facing. Again, the average earnings of the control groups indicate that this categorization is strongly predictive of what JTPA

assignees would have earned without the program—control group earnings fall steadily as the number of barriers rises.

For both women and men the impacts were the largest in the subgroup facing none of the three barriers. For neither women nor men, however, was the difference in impacts *among* subgroups statistically significant; thus, these differences may merely reflect sampling error.[10]

Summary and Comparison with Previous Findings

Overall, JTPA Title II-A had modest positive impacts on the earnings of adult women over the follow-up period; on average, women gained $539 over the 18 months following their application. The estimated earnings gain for men was similar ($550) but was not statistically significant. These overall averages mask substantial variation in both the magnitude and time patterns of program impacts among subgroups of women and men, however.

When adult women are categorized by the service strategy recommended by program intake staff, the only ones to experience a statistically significant earning impact over the follow-up period as a whole were those in the OJT/JSA subgroup, with a gain of $742. Women in this subgroup enjoyed consistently positive, statistically significant earnings increases of $109 to $144 in five of the six follow-up quarters. Women in the classroom training subgroup experienced an earnings loss in the first calendar quarter of the follow-up period, followed by growing positive impacts and culminating in significant impacts of $144 and $188 in the fifth and sixth quarters. Program impacts on the earnings of women in the other services subgroup were significant only in the third quarter, when these women gained $220 on average; impacts for this subgroup were negligible in subsequent quarters.

Impacts for adult men were similar in magnitude to those for women, although they were less frequently statistically significant. As with the women, only those in the OJT/JSA subgroup enjoyed significant earnings gains (of $781) over the follow-up period as a whole.

10. Among the adult female subgroups, for example, there is a 46 percent chance of finding differences at least as large as those shown here even if there were no true differences in impacts among subgroups.

Estimated impacts on the earnings of men in the classroom training and other services subgroups were never statistically significant, either for the follow-up period as a whole or for individual quarters.

These impact estimates are similar in magnitude to those found in the few previous evaluations that have used rigorous experimental designs. For example, studies of state work-welfare programs in the early 1980s found impacts in the first two years after random assignment that ranged from near zero to about $200 per quarter.[11] Evaluations of demonstration programs for displaced workers in Texas and New Jersey found similar impacts on earnings in the first year after random assignment.[12]

Comparisons with the results of earlier studies are complicated, however, by the fact that the programs involved in those studies provided somewhat different services from those in JTPA and served primarily welfare populations and (for men) displaced workers. Moreover, the programs for women examined in earlier studies were, unlike JTPA, mostly mandatory, and yet had lower rates of participation in employment and training services than those of our study sample.

Finally, when adult women in the National JTPA Study sample are classified by ethnic group, significant differences in impacts on earnings emerge, with white women experiencing greater gains than minority women, particularly Hispanic women. Further tests revealed that these differences in impacts were due in part to the concentration of many Hispanic women in study sites with below average impacts for women in *all* ethnic groups. Once this factor is removed, there is no evidence that impacts differed by ethnic group.

There were no significant differences in impacts on the earnings of adult men by ethnic group. Nor were there any significant differences in impacts on the earnings of subgroups of either women or men formed on the basis of several barriers to employment—welfare receipt, limited education, and limited recent work experience. This was true both for subgroups defined based on individual barriers to employment and subgroups defined based on the number of these barriers facing them.

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11. See Gueron and Pauly (1991).
12. See Bloom (1990) and Corson et al. (1989).

Findings for Subgroups of Female and Male Out-of-School Youths

The study sample of out-of-school youths was classified into the same three service strategy subgroups as those used to classify adults: classroom training, OJT/JSA, and other services. These subgroups were based on the JTPA services recommended for sample members by program intake staff before random assignment.

Service Strategies Recommended

The service strategies recommended for youths reflect a difference in emphasis between JTPA Title II-A programs for youths and those for adults. Programs for adults emphasize employment, as evidenced by the fact that program performance standards for adults are based largely on job placement rates. In contrast, programs for youths emphasize a broader range of outcomes, with performance standards for youths based in part on "positive terminations," which include not only job placements but also participation in further training and attainment of specific job competencies.

A comparison of Exhibit S.9 and the earlier Exhibit S.3 indicates that youths were far less likely than adults to be recommended for the *OJT/JSA strategy*, especially if we compare female youths with female adults and male youths with male adults. Of the three service strategies, OJT/JSA places the greatest emphasis on immediate employment; thus, this difference between youths and adults reflects the difference between programs for youth and adults in JTPA. In addition, youths were more apt than adults to be recommended for the *other services strategy*, which, as discussed below, had proportionately more youths than adults receiving basic education.

The mix of service strategies recommended also differed between female and male youths. Female youths were more likely than male youths to be recommended for classroom training (44 percent versus 30 percent, respectively) and less likely than male youths to be recommended for OJT/JSA (23 percent versus 33 percent). The genders were about equally likely to be recommended for other services (33 percent versus 37 percent).

Enrollment Rates and Duration, by Service Strategy Subgroup

Enrollment rates overall were comparable to those for adults, with 66 percent of the female youths in the treatment group and 67 percent of the male youth treatment group becoming

Exhibit S.9 Service Strategies Recommended: Out-of-School Youth JTPA Assignees, by Gender

Service strategy	Female youths (1)	Male youths (2)
Classroom training	44.3%	29.9%
OJT/JSA	23.2	32.9
Other services	32.5	37.3
Sample size	*1,814*	*1,436*

enrolled in JTPA Title II-A at some time during the 18-month follow-up period. The highest enrollment rates were in the classroom training treatment group, in which 72 percent of the female youths and 75 percent of the male youths were enrolled. The lowest enrollment rates were in the OJT/JSA treatment group, with 58 percent of the female and 59 percent of the male youths enrolled. Other services fell between these two extremes, with enrollment rates of 63 percent for female and 68 percent for male youth treatment group members.

Out-of-school youths who enrolled in JTPA stayed in the program for a relatively brief time. Among female youths the median duration of enrollment was 4 months, about a month longer than the median for male youths. The service strategy subgroup with the shortest enrollments was OJT/JSA, with a median of about 2 months for both females and males; the classroom training subgroup had the longest enrollments, at around 5 months for females and males. The median for the other services subgroup was about 2 months for both target groups.

Services Received, by Service Strategy Subgroup

Exhibit S.10 shows that the most common services received by enrollees in each service strategy subgroup were those which distinguished it from the others. About 86 percent of female youth enrollees and about 80 percent of male youth enrollees recommended for classroom training received classroom training in occupational skills, basic education, or both. About 85 percent of female and male youths in the OJT/JSA subgroup received on-the-job training, job search assistance, or both. And about 80 percent of female youth enrollees and 83 percent of the male youth enrollees recommended for the other services strategy received basic education, miscellaneous services, or both.

Exhibit S.10 Most Common JTPA Services Received by Treatment Group Members Who Were Enrolled in the Program: Out-of-School Youths, by Gender and Service Strategy Subgroup

	% of enrollees receiving one or both services	
Two most common services in service strategy subgroup	*Female youths (1)*	*Male youths (2)*
	Classroom training subgroup	
Classroom training in occupational skills/basic education[a]	86.1%	80.4%
	OJT/JSA subgroup	
On-the-job training/ job search assistance	84.8%	84.5%
	Other services subgroup	
Basic education [a]/ miscellaneous[b]	79.5%	83.2%
Sample size	*1,200*	*976*

a. "Basic education" includes Adult Basic Education (ABE), high school or General Educational Development (GED) preparation, and English as a Second Language (ESL).

b. "Miscellaneous" includes assessment, job-readiness training, customized training, vocational exploration, job shadowing, and tryout employment, among other services.

The only obvious difference between the types of JTPA services received by youths and those received by adults was in the other services subgroup. Whereas adult enrollees in this subgroup received mainly job search assistance and miscellaneous services, youth enrollees received mainly basic education and miscellaneous services—further evidence, as noted earlier, that JTPA emphasizes immediate employment for adults more than it does for youths.

As with adults, the estimated program impacts on youths reported here reflect the *differences* between the employment and training services received by treatment group members, who had access to JTPA, and the services they would have received if they had been excluded from the program, as measured by data on control group members. Because not all out-of-school youths who were treatment group members actually enrolled in JTPA, not all of the youths received JTPA services. Moreover, a number of out-of-school youths in the control group received services from non-JTPA providers that were similar to JTPA services. Nevertheless, the differences in the services received by treatment and control group members were substantial.

The differences in service receipt varied by service strategy subgroup. In the *classroom training subgroup* about 48 percent of the female youths and 43 percent of the male youths in the treatment group received classroom training in occupational skills, whereas only 31 percent of the female youths and 22 percent of the male youths in the control group received this service. In the *OJT/JSA subgroup* 30 percent of the females and 31 percent of the males in the treatment group received on-the-job training, while less than 1 percent of both females and males in the control group received the service.

It was not possible to determine the treatment-control group difference in services received by youths in the *other services subgroup* because information on the category of services most frequently received by treatment group members, miscellaneous services, was not available for control group members. About 29 percent of the females and 35 percent of the males in the treatment group received a miscellaneous service.[13]

Impacts on Educational Attainment, by Service Strategy Subgroup

Differences in the services received by youths in the treatment and control groups produced differences in the rate at which school dropouts in these groups attained a high school diploma or GED certificate. Since half of the youths in the study sample were school dropouts, impacts on their educational attainment represent an important result of the program.

As shown in the fourth row of Exhibit S.11, among control group members who were school dropouts, 17 percent of the female youths and 14 percent of the male youths enrolled in an employment and training service and received a high school diploma or GED certificate after random assignment. Among the corresponding treatment group members, however, 29 percent of the female youths and 24 percent of the male youths subsequently attained a training-related high school credential. The program impact in both cases was highly significant. Impacts were also significant for male youths in all three service strategy subgroups and for females in classroom training and other services—the two service strategies that focused the most on basic education. The impacts were particularly striking for females in classroom training.

13. Many youth treatment and control group members (between 10 and 25 percent) in the other services subgroup received basic education or classroom training in occupational skills. But the treatment-control group differences in receipt were small for both of these services.

Exhibit S.11 *Impacts on Attainment of a Training-Related High School Diploma or GED Certificate: Out-of-School Youth JTPA Assignees Who Were High School Dropouts, by Gender*

Service strategy subgroup	Female youths: % attaining HS/GED, Assignees (1)	Female youths: % attaining HS/GED, Controls (2)	Female youths: Impact, in % points (3)	Male youths: % attaining HS/GED, Assignees (4)	Male youths: % attaining HS/GED, Controls (5)	Male youths: Impact, in % points (6)
Classroom training	32.9%	16.6%	16.4***	27.3%	18.3%	9.0*
OJT/JSA	9.8	6.0	3.8	14.9	4.9	10.1***
Other services	31.7	21.0	10.7**	26.1	16.9	9.1**
All subgroups	28.6	16.6	11.9***	23.9	14.0	9.9***
Sample size [a]			*1,050*			*955*

a. Assignees and control group members who were high school dropouts and who received some employment or training service during the follow-up period.

* Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

Impacts on Earnings, by Service Strategy Subgroup

As noted at the outset, the estimated program impacts on the earnings of female youths were negligible and those for male youths were substantially negative. Exhibit S.12 provides a more detailed look at these impacts for each of the three service strategy subgroups of youths during each of the six quarters of the follow-up period.

In the female *classroom training subgroup* impacts on earnings were negative and statistically significant during the first three follow-up quarters. As with adult women, these initial losses probably reflect the earnings forgone by JTPA assignees while they were attending classes. Unlike the experience of adult women, however, female youths in classroom training did not experience any significant increases in earnings later in the follow-up period. Hence, the earnings female youths lost while participating in classroom training were not offset by a payback period, at least not by the end of the 18-month follow-up.

Female youths in the *OJT/JSA subgroup* experienced a different pattern. The initial impacts on their earnings were moderately positive (and statistically significant in the second follow-up quarter), which may reflect an initial boost in employment produced by on-the-job training, job search assistance, or both. But these short-run gains were not sustained over time.

Exhibit S.12 Impacts on Quarterly and 18-Month Earnings: Out-of-School Youth JTPA Assignees, by Gender and Service Strategy Subgroup

	Female youths		Male youths	
Period	Control mean (1)	Impact per assignee (2)	Control mean (3)	Impact per assignee (4)
		Classroom training subgroup		
Quarter 1	$ 742	$ -210***	$ 1,226	$ -300**
2	909	- 189***	1,345	96
3	1,052	-150*	1,655	- 2
4	991	24	1,773	0
5	1,047	70	1,889	- 56
6	1,196	- 87	1,895	4
All quarters	5,936	- 542	9,783	- 259
Sample size[a]		*1,045*		*526*
		OJT/JSA subgroup		
Quarter 1	$ 1,002	$ 149	$ 1,651	$ -57
2	1,074	203*	1,988	- 219
3	1,252	97	2,197	- 302*
4	1,363	3	2,160	- 203
5	1,368	103	2,316	- 192
6	1,562	-146	2,452	- 339**
All quarters	7,620	410	12,765	- 1,313*
Sample size[a]		*545*		*615*
		Other services subgroup		
Quarter 1	$ 653	$ 43	$ 1,362	$ -285**
2	909	-68	1,457	- 121
3	1,023	-96	1,605	- 218
4	1,047	-52	1,751	- 276*
5	1,093	-41	1,766	- 114
6	1,001	55	1,899	- 292**
All quarters	5,726	-158	9,839	- 1,305*
Sample size[a]		*710*		*607*

a. Assignees and control group members combined.
* Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

Impacts on the earnings of female youth assignees in the *other services subgroup* were negligible in all six follow-up quarters. The mix of predominantly basic education and miscellaneous services JTPA provided to this subgroup had no perceptible impact.

The impact estimates for male youths in the *classroom training subgroup* were similar to those for their female youth counterparts. The impacts on earnings were substantially negative and statistically significant during the first follow-up quarter, again, perhaps reflecting the costs of being in class instead of employed. And as with the female youths, the impacts were negligible for this subgroup throughout the later quarters, suggesting no offsetting benefits in terms of increased future earnings.

Most striking among the findings for *male youths* were the impact estimates for those recommended for OJT/JSA or other services. Estimates for both service strategy subgroups were negative in every follow-up quarter, and were substantial and statistically significant in many quarters.

The impact on the earnings of male youth assignees in the *OJT/JSA subgroup* was -$1,313 over the follow-up period as a whole. This statistically significant earnings loss represented -10.3 percent of the corresponding control group's mean earnings. This earnings loss was due mainly to a -8.5 percent program-induced reduction in the average number of hours worked by assignees during the period; average hourly earnings among assignees who worked were largely unaffected by the program (not shown).

Earnings of male youth assignees in the *other services subgroup* were reduced by -$1,305, or -13.3 percent of what their earnings would have been without access to JTPA. This loss was due mainly to a -9.7 percent reduction in the number of hours worked, although average hourly earnings when working were also reduced by -4.0 percent.[14]

Overall, then, it appears that the negative program impact on earnings among male youths recommended for OJT/JSA or other services reflected mainly the fact that they worked fewer hours during the follow-up period than their counterparts in the control group did.

14. The percentage impacts on hours worked and on earnings per hour worked do not sum exactly to the percentage impact on total earnings because the relationship between total earnings and its components is multiplicative, not additive.

These findings for male youths are in sharp contrast to those for adult men, especially in the OJT/JSA service strategy. To determine whether these differences were due to age-related factors *per se* or differences between the JTPA programs for male youths and adults, we tested whether the findings for male youths were an extension of an age-impact trend for young male adults or a marked departure from such a trend. The results of this test were inconclusive, however, because of the small samples for the age subgroups involved.

Impacts on Earnings, by Ethnicity and Barriers to Employment

The estimated impacts on earnings for out-of-school youths did not vary systematically with the ethnic backgrounds of sample members or with the barriers to employment they faced when they applied to JTPA.

Exhibit S.13 presents the estimates by *ethnic group*. The impact estimates for female youths did not differ substantially by ethnic group, and no ethnic group experienced a statistically significant impact. In addition, separate tests of the statistical significance of the differences among the impacts on these groups (not shown) confirm the lack of a differential effect of JTPA.

Among the male youths, there were pronounced differences in the estimated impacts among the three ethnic groups. These differences were not statistically significant, however, and may therefore simply be due to chance (test not shown).

Exhibit S.13 Impacts on the 18-Month Earnings of Major Ethnic Groups: Out-of-School Youth JTPA Assignees, by Gender

	Female youths			*Male youths*		
Ethnic group	*Sample size[a]* (1)	*Control mean* (2)	*Impact per assignee* (3)	*Sample size[a]* (4)	*Control mean* (5)	*Impact per assignee* (6)
White, non-Hispanic	1,148	$ 7,076	$ -122	946	$ 12,550	$ -1,333**
Black, non-Hispanic	749	5,601	-135	522	8,164	75
Hispanic	366	5,019	-554	248	10,126	-1,238
Full sample[b]	2,300	6,225	-182	1,748	10,736	-854**

a. Assignees and control group members combined.

b. Including the three major ethnic groups and American Indians, Alaskan Natives, Asians, and Pacific Islanders.

Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

Exhibit S.14 Impacts on the 18-Month Earnings of Subgroups Facing Selected Barriers to Employment: Out-of-School Youth JTPA Assignees, by Gender

Barrier to employment (in italic)	Female youths			Male youths		
	Sample size[a] (1)	Control mean (2)	Impact per assignee (3)	Sample size[a] (4)	Control mean (5)	Impact per assignee (6)
Receiving cash welfare	701	$ 4,397	$ -391	185	$ 8,815	$ -56
No cash welfare	1,412	7,174	-154	1,374	11,292	-1,020**
No high school diploma or GED certificate	1,047	4,192	23	730	10,087	-1,144*
High school diploma or GED certificate	1,146	8,055	-437	947	11,612	-420
Worked less than 13 weeks in past 12 mos.	1,235	4,425	-31	754	8,616	-1,286**
Worked 13 weeks or more in past 12 mos.	829	8,886	-255	842	12,808	-832
Number of barriers						
None of the above	545	9,964	-260	475	13,352	-459
One of the above	790	6,552	-236	733	10,810	-696
Two of the above	675	4,486	-451	455	8,520	-1,242
All three of the above	281	2,189	660	81	7,642	-1,278
Full sample	2,300	6,225	-182	1,748	10,736	-854**

a. Assignees and control group members combined.

* Statistically significant at the .10 level, ** at the .05 level, *** at the .01 level (two-tailed test).

Exhibit S.14 presents the estimates for subgroups of youths defined in terms of the three specific barriers to employment investigated for adults: *welfare receipt, limited education,* and *limited recent work experience.* As was the case for adults, these barriers represented serious obstacles to employment for youths, as evidenced by the fact that *control group* earnings drop markedly as the number of barriers increases (bottom panel of the exhibit).

There is little evidence, however, of a systematic relationship between the number or nature of these employment barriers and the effect of JTPA on out-of-school youths. Among female youths, in particular, there was little difference between the estimated program impacts for sample members who faced each of the three employment barriers and those who did not. Furthermore, there was no clear pattern in the relationship between the estimated program impacts and the *number* of employment barriers faced. Tests for significant differences in impacts *among* subgroups (not shown) revealed none that were statistically significant.

Among male youths the differences between the impacts for sample members who faced an employment barrier and those who did not appear to be more substantial. For youths with limited education or limited recent work experience, JTPA appeared to reduce the earnings of males facing these barriers by more than it reduced the earnings of those who did not (top panel, column 6). In addition, the more barriers faced, the more JTPA reduced future earnings. These differences in impact estimates *among* the subgroups were not statistically significant, however, and so the patterns they imply are only suggestive and may in fact be due to chance. Moreover, the difference in impacts was in the opposite direction for male youths receiving welfare and those not receiving welfare.

Summary and Comparison with Previous Findings

As indicated above, JTPA Title II-A did not appreciably affect the earnings of female youths. On average, the program reduced total earnings during the 18-month follow-up period by -$182 per female youth assignee (treatment group member), but this estimated effect was not statistically significant. Nor were the impact estimates for female youths in the three service strategy subgroups statistically significant.

The findings for male out-of-school youths were very different. On average, JTPA reduced the earnings of this target group by -$854 over the 18-month follow-up period. Male youth assignees in the OJT/JSA or other services subgroups experienced large, statistically significant earning losses: -$1,313 and -$1,305, respectively. Only the estimate for the classroom training subgroup was not statistically significant.

The large, statistically significant earnings losses experienced by youths recommended for the OJT/JSA and other services strategies were due mainly to the fact that treatment group members worked fewer hours than they would have without JTPA, not that they were paid less for the hours they worked.

Findings for out-of-school youths in this study are not inconsistent with those from the two existing experimental studies of employment and training programs for out-of-school youths.[15] The first, the youth component of the National Supported Work Demonstration,

15. Although many other employment and training programs for youths have been studied in the past, the findings obtained provide little reliable information because of the methodological problems endemic to the nonexperimental research designs that were used, see the review in Betsey, Hollister, and Papageorgio, 1985.

evaluated an intensive work experience program (Manpower Demonstration Research Corporation, 1980): and the second, JOBSTART, evaluated intensive employment and training services provided through JTPA (Cave and Doolittle, 1991). The Supported Work study found negligible post-program impacts on the earnings of youth participants, who were primarily male. JOBSTART found negligible short-term impacts for female youths and large negative short-term impacts for male youths, mirroring the findings of the present study.

Both JOBSTART and the youth component of Supported Work targeted seriously disadvantaged youths, who make up only a portion of the out-of-school youth population targeted by JTPA Title II-A programs. And Supported Work provided far more intensive services than are typically available from JTPA. Hence, the three studies of employment and training programs for youths focus on different target groups and program services.

Nevertheless, none of these studies indicates that the programs examined were able to improve the earnings prospects of disadvantaged youths; and two of the three studies found that such programs actually reduced the earnings of male youths. The experimental findings to date therefore are cause for concern.

Implications of the Findings

The National JTPA Study is based on only 16 study sites, which are not a probability sample of all SDAs and may not be representative of the nation. But to the extent that these results apply to other localities, they have important policy implications.

The study has shown that JTPA is helping to raise the earnings of many of its participants, especially among the adults, but it has also identified several groups for whom JTPA Title II-A is having no effect or even adverse effects. The program failed to raise the earnings of out-of-school youths in general, and it actually reduced the earnings of male out-of-school youths recommended for the OJT/JSA and other services strategies.

Although this analysis has identified those groups not being adequately served by the program, it cannot prescribe ways to serve them better. This is because the study was designed to observe only the impacts of JTPA as it operated during the study period, not alternative ways of serving the same population.

Finding ways to improve program performance for those groups negligibly or adversely affected by the current program will require experimentation with a range of alternative service strategies for these groups *and rigorous evaluation of the results*. We cannot overemphasize the importance of rigorous evaluation of new approaches to serving these groups. Experience has demonstrated that simply trying out alternative program strategies without rigorous evaluation is not enough. As a National Research Council report concluded in a review of more than 60 youth employment and training demonstrations, "Despite the magnitude of the resources ostensibly devoted to the objectives of research and demonstration, there is little reliable information on the effectiveness of the programs in solving youth employment problems" (Betsey, Hollister, and Papageorgiou, 1985). To address this deficiency, the authors recommended greater reliance on field experiments with random assignment.

The reason it is difficult to evaluate these programs without random assignment is clear from the patterns of earnings displayed by the control groups in this study. These show that even in the absence of access to JTPA, youths' earnings would have risen rapidly and would have varied substantially across service strategies. Without random assignment, it is easy to mistake these patterns of outcomes that would have occurred anyway for effects of the program.

Finally, although the current results clearly imply the need for some programmatic changes, these results should be regarded as partial. In the final report of the National JTPA Study we will extend these findings in several ways. First, we will analyze impacts over a longer follow-up period. Growth or decline in the impacts estimated here over the period beyond 18 months could materially change the relative impacts among target groups and service strategies. Second, we will extend the analysis to include impacts on receipt of public benefits from AFDC and food stamps programs. And third, and most important, we will compare the impacts of JTPA Title II-A and the three service strategies to their costs, to determine the cost-effectivenessof the program at the 16 study sites.

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