DOCUMENT RESUME

ED 075 524 UD 013 458

AUTHOR Carroll, Stephen J.; And Others
TITLE Evaluation Results for the Los Angeles Women's Job Corps Center.
INSTITUTION Rand Corp., Santa Monica, Calif.
SPONS AGENCY Office of Economic Opportunity, Washington, D.C.
REPORT NO R-745-OEO
PUB DATE Sep 71
NOTE 81p.
AVAILABLE FROM Communications Dept., Rand Corp., 1700 Main Street, Santa Monica, Calif. 90406 (no price quoted)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Basic Skills; Changing Attitudes; Cognitive Development; Economically Disadvantaged; Educational Diagnosis; *Job Training; Nonresidential Schools; *Program Evaluation; Residential Programs; Self Concept; *Vocational Training Centers; *Womens Education; Young Adults
IDENTIFIERS California; *Los Angeles Womens Job Corps Center

ABSTRACT

In June 1969, The Rand Corporation was funded by the Office of Economic Opportunity to evaluate an experimental commuter program operated by the Los Angeles Women's Job Corps Center (LAWJCC). An earlier report has described the evaluation design [ED 052 372]. This report presents the results of the empirical analysis. In the interest of deriving useful evaluative information for program administrators within a reasonable period, short-term indicators of long-term outcomes must be used. This study examines the relative effectiveness of the commuter program in terms of three such short-term indicators: corpswomen's cognitive gains, changes in corpswomen's work-relevant attitudes, and the length of time that corpswomen remained in the Center. With respect to cognitive gains, the main finding is that any influence of residence upon cognitive gain, as measured by changes in Job Corps Test and Stanford Achievement Test scores, is in a negative direction. Significantly positive increases in reading and mathematics, as measured by the tests, occur while women are at the LAWJCC. There was considerable evidence either that the accuracy of measurement of cognitive gain varies from one test to another, or that the tests measure different dimensions of progress. Resident corpswomen are substantially more likely to leave the Center within 90 days of entry than are commuter corpswomen. (Author/JM)

R-745-OEO
September 1971

Evaluation Results for the Los Angeles Women's Job Corps Center

Stephen J. Carroll, David H. Greenberg and Patricia O. Katsky

A Report prepared for

OFFICE OF ECONOMIC OPPORTUNITY

Rand
SANTA MONICA, CA. 90406

The research reported herein was performed under contract with the Office of Economic Opportunity, Executive Office of the President, Washington, D. C., 20506. The opinions expressed herein are those of the author and should not be construed as representing the opinions or policy of Rand or of any agency of the United States Government.

R-745-OEO
September 1971

Evaluation Results for the Los Angeles Women's Job Corps Center

Stephen J. Carroll, David H. Greenberg and Patricia O. Katsky

A Report prepared for

OFFICE OF ECONOMIC OPPORTUNITY

Rand
SANTA MONICA, CA. 90406

Bibliographies of Selected Rand Publications

Rand maintains a number of special subject bibliographies containing abstracts of Rand publications in fields of wide current interest. The following bibliographies are available upon request:

Aerodynamics • Africa • Arms Control • Civil Defense
Combinatorics • Communication Satellites • Communication Systems
Communist China • Computer Simulation • Computing Technology
Decisionmaking • Delphi • East-West Trade • Education
Game Theory • Health-related Research • Human Resources
Latin America • Linguistics • Maintenance • Middle East
Policy Sciences • Pollution • Population
Privacy in the Computer Age • Program Budgeting • Public Safety
SIMSCRIPT and Its Applications • Southeast Asia
Space Technology and Planning • Statistics • Systems Analysis
Television • Transportation • Urban Problems • USSR/East Europe
Water Resources • Weapon Systems Acquisition
Weather Forecasting and Control

To obtain copies of these bibliographies, and to receive information on how to obtain copies of individual publications, write to: Communications Department, Rand, 1700 Main Street, Santa Monica, California 90406.

Published by The Rand Corporation

PREFACE

In June 1969 the Office of Economic Opportunity awarded Rand a contract to evaluate the programs of the Los Angeles Women's Job Corps Center. The Center had just begun an experimental program and the focus of the evaluation was on comparing the effectiveness of the experimental program with that of the traditional residential program operated by the Center for the past five years.

To estimate fully the relative effectiveness of the two programs, we would have to observe what happens to participants over the long term. However, if program administrators are to receive useful evaluative information within a reasonable length of time, short-term indicators of long-term outcomes must frequently be used. For this reason, this Report focuses on comparing the in-program experiences of participants in the commuter and residential programs.

The authors owe much to Mary Dolittle, Director of the Los Angeles Women's Job Corps Center, and her staff. Their active cooperation helped to smooth the many difficult steps in the analysis. Jacquie Richman, the Center's Research Director, developed most of the data sources and directed the entire data collection effort. The authors owe specia' thanks to Rand colleagues Robert Levine and Malcolm Palmatier, as well as to Paul Geyer of OEO for commenting on earlier drafts. The would also like to acknowledge the contribution of Linda Kleiger, Anthony H. Pascal and S. James Press, who worked on earlier phases of the study.

SUMMARY

In June 1969, The Rand Corporation was funded by the Office of Economic Opportunity to evaluate an experimental commuter program operated by the Los Angeles Women's Job Corps Center (LAWJCC). An earlier report has described the evaluation design.* This Report presents the results of the empirical analysis. In the interest of deriving useful evaluative information for program administrators within a reasonable period, short-term indicators of long-term outcomes must be used. In this study we examine the relative effectiveness of the commuter program in terms of three such short-term indicators: corpswomen's cognitive gains, changes in corpswomen's work-relevant attitudes, and the length of time that corpswomen remained in the Center.

We found that much of the residential population at the LAWJCC is composed of what might be described as the "old" poor -- women from unbroken, self-supporting homes in rural areas or small towns, often with a fairly high level of education, who are willing to work in low-status jobs for low wages. They were seldom familiar with an urban environment.

The LAWJCC commuter group, in contrast, is composed to a large extent of what might be called the "new" poor -- women typically from the two major minority groups of blacks and Mexican-Americans, who grew up in crowded urban ghetto conditions and on welfare, and who left school early and yet were knowledgeable enough in the ways of the city to find employment in white-collar jobs for reasonably good wages.

With respect to cognitive gains, our main finding is that any influence of residence upon cognitive gain, as measured by changes in Job Corps Test (JCT) and Stanford Achievement Test (SAT) scores, is in a negative direction. The gains of commuters did not systematically

*S. J. Carroll et al., Evaluation Design for the Los Angeles Women's Job Corps Center, RM-6373-OEO, The Rand Corporation, December 1970. The longitudinal study called for in this design was later cancelled.

differ from the gains of residents. Once differences in individual characteristics were controlled for, however, residency appeared, if anything, to have an adverse effect. Still, the magnitude of this effect is so small as to be apt to have little influence on the corpswoman's future.

We found that significantly positive increases in reading and mathematics, as measured by the tests, occur while women are at the LAWJCC. Most, if not all, of this gain takes place during the basic education sequence, and is in fact positively associated with the number of hours of basic education actually attended.

The incoming women's personal characteristics also influence cognitive gain. Socio-economic status (as measured by family income) and maturity (as measured by age) are both positively related to gains. Women from mother-headed households appear to make somewhat greater relative progress than others. Mexican-Americans and blacks register less cognitive gain than whites. Women who made the greatest gains in reading appeared to be those who at entry were relatively strong in mathematics; conversely, those who made the greatest progress in mathematics were among the best readers at entry.

There was considerable evidence either that the accuracy of measurement of cognitive gain varies from one test to another, or that the tests measure different dimensions of progress. For the same time period, correlations between score changes on different tests were quite low. Regression results varied considerably when different tests were used in calculating the dependent variable. The JCT registered much larger increases in grade levels for both reading and mathematics than did the SAT.

While there is evidence that some women improve somewhat in job-relevant attitudes during their stay at the Center, the results indicate that the majority do not. Improvement, when it occurred, was apparently unrelated to whether a woman was a resident or a commuter. In fact, none of the measures of attitude change was systematically related to program inputs or to demographic characteristics of the incoming population.

Resident corpswomen are substantially more likely to leave the Center within 90 days of entry than are commuter corpswomen. Among corpswomen who remain in the Center for at least 90 days, residents are no more likely to depart during ensuing periods. This result holds even after controlling for differences in the characteristics of the two populations.

High school graduates are much more likely to remain in the Center for lengthy periods of time than are high school dropouts. This variable proved to be a very significant predictor of length of stay for every time period.

Demographic variables were seldom related to length of stay. The data indicated, however, that black corpswomen are less likely to terminate during their first 4 or 5 months than are non-black corpswomen. Mexican-Americans who remained through 90 days were much more likely to remain for subsequent periods than were other corpswomen who remained through 90 days.

The size of the community or the geographic region where a woman was raised is apparently unrelated to how long she remains at the Center.

The amount of time a corpswoman spends in basic education is not related to how long she remains in the program after completing basic education. Further, whether she is assigned to a work task, or to an advanced education class, or to a skill-training course after finishing basic education has little discernible impact upon how long she remains in the Center.

Finally, optimistic women (that is to say, women who scored high on the attitude test labeled "optimism") are more likely to remain in the program after the fourth month.

CONTENTS

I. INTRODUCTION, CONCLUSIONS, AND RECOMMENDATIONS

In June 1969, The Rand Corporation was funded by the Office of Economic Opportunity to evaluate an experimental commuter program operated by the Los Angeles Women's Job Corps Center (LAWJCC). An earlier report has described the evaluation design.* This Report presents the results of the empirical analysis.

THE OBJECTIVE OF THE EVALUATION

The mission of the Job Corps is to ". . . prepare young people to be responsible productive citizens by providing them the opportunity to rise out of poverty by increasing their own knowledge and skills."** In the past the residential program has been the only tool available to the Job Corps in fulfilling its mission. The traditional Job Corps is accurately described in an official statement as "a residential program . . . [for] disadvantaged young men and women aged 14 to 21, who require a change in environment in order to prepare themselves for the responsibilities of citizenship and to increase their employability."*** Thus, the commuter program represents a major departure from the traditional Job Corps approach.

To estimate the extent to which the commuter program is successful, we would have to observe what happens to participants over the long term. The primary outcome variable in an evaluation should be the corpswoman's economic situation sometime after she leaves the Center. This outcome, however, can be observed only in a long-term evaluation study. In the interest of deriving useful evaluative information for program administrators within a reasonable length of

---

*S. J. Carroll et al., Evaluation Design for the Los Angeles Women's Job Corps Center, RM-6373-OEO, The Rand Corporation, December 1970.

**U.S. Congress, Joint Economic Committee, Subcommittee on Economic Progress, Federal Programs for the Development of Human Resources, 89th Congress, 2nd Session, December 1966, Vol. I, p. 116.

***Statement by William P. Kelly, former Director of the Job Corps, before the Senate Subcommittee of the Committee on Appropriations, May 13, 1968, Washington, D.C. (Emphasis added.)

time, short-term indicators of the long-term outcomes must be used. In this study we use the three following short-term indicators to examine the relative effectiveness of the commuter and residential programs -- the objective of the evaluation.

Increase in Cognitive Skills

One of the ways in which the Job Corps attempts to improve corpswomen's economic opportunities is by increasing their cognitive skills -- their ability to think and reason. The basic education program is directly aimed at this objective. Many women, upon completing basic education, continue to develop reading and arithmetical skills in various advanced education courses. The extent to which women increase in achievement, as measured by standardized tests, is a fundamental concern of the Center's staff. The extensive research into the economic and social returns to education suggests that their concern is not misplaced.

Attitude Change

The Job Corps attempts to make participants employable, not only by providing marketable training, but also by socializing the participants into a changed perception of themselves and the role of work in their lives. Research to date has not provided clear evidence of a relationship between attitudes and economic success. However, we believe it reasonable to presume that the acquisition of positive, work-relevant attitudes is related to success in the labor market.

Length of Stay

The length of a woman's stay in the Job Corps is the third of the indicators examined in the analysis. There are several reasons for our interest in this variable. First, women who enter the Job Corps commonly have serious disabilities (inadequate education, lack of any skill or training useful in the labor market, severe personal problems -- to name just a few) that impair their ability to rise out of poverty. Job Corps staff members generally believe that their chances of helping

rease with the amount of time they have to work with her.

In many of the skill training programs offered by the Center lead to formal certification (e.g., a beautician's license, a vocational nursing license). Since certification usually depends upon completion of the training course and since a certificate is required for employment in such jobs, it is crucial that the Center "hold" the woman through course completion. Finally, the length of time that corpswomen remain in a program is viewed as a measure of that program's "quality." This view is based on the notion that women respond to help. Thus, a program that is able to hold its corpswomen must be offering them the services they require, at least in comparison with a program that is unable to hold its clients. These notions all suggest that the commuter program must keep its dropout rate to a reasonable level if it is to succeed in the long term.

THE LIMITS OF THE EVALUATION

Before presenting empirical results, we must emphasize, first, that throughout the evaluation we were concerned with relative, not absolute, effects. We do not compare Job Corps participants with nonparticipants; we attempt to estimate the differential impact of residency upon women <u>within</u> the Center. This study, therefore, is not to be interpreted as a comparison of the Los Angeles Women's Job Corps Center with other Job Corps Centers or other human resources programs.

Second, we have necessarily focused on near-term rather than far-term effects. The objective of the Job Corps is to help women rise out of poverty. The proximate objectives on which we focus in this Report are important only insofar as they are valid indicators of long-term success. This phase of the evaluation is, in fact, only one part of what must be a two-part analysis. Our results should be viewed as tentative until sufficient longitudinal data on corpswomen's post-participation success becomes available.

Third, time limitations on the data curtailed analyses of changes in attitudes and skills. The data we received from the Center cover only the twelve months from June 1, 1969 through May 29, 1970. Most

women who enter the Center enroll in training programs requiring over nine months to complete, but only a small proportion of our sample entered the Center during the first three months of this period. Thus, our sample can be roughly divided into two groups: dropouts and women who were still in the Center on May 29, 1970. (There are only nine program graduates in our sample of 506 corpswomen.) Consequently, we could not include in the analyses measures of success in skill-training. Our investigation of attitude changes while in the Center was also severely limited.

Finally, we have not included costs in the analysis. The on-going resident program was funded on a per-capita basis at an annual rate of approximately $5,250 per corpswoman. To ensure equitable treatment of commuters, the Center was obliged to establish a separate system of cost accounts. The commuter program was funded, also on a per-capita basis, at an approximate annual rate of $5,329 per corpswoman. Because of these fiscal arrangements, any direct comparison of costs between the two programs would indicate negligible differences, on a per-woman basis. However, we feel that it would be erroneous to conclude that the programs are equally costly. The financial ground rules imposed on the Center's staff effectively precluded experimenting with alternative expenditure levels. In particular, the option of expanding (or contracting) the size of a program by spending less (or more) per corpswoman was closed.* Substantive conclusions regarding the true relative costs of the two programs could only be derived from an extensive cost analysis -- a task beyond the resources available in this study.

---

*There was, of course, the option of spending less per corpswoman and returning the surplus funds to Washington. This would scarcely be acceptable behavior on the part of a staff charged with the responsibility of doing as much as possible to aid its clientele.

PLAN OF THE STUDY

A brief description of the Los Angeles Women's Job Corps Center and of the women who entered each of the Center's programs is provided in Section II. Section III summarizes the analysis and presents the more important results. A list of the variables examined in the course of the evaluation is given in Appendix A. Appendices B, C, and D present technical details of the analyses of cognitive skills, attitude change, and length of stay, respectively. In the interest of brevity, we do not describe the evaluation design or the data-collection process. The interested reader is referred to a previous Report.*

CONCLUSIONS AND RECOMMENDATIONS

Mindful of the limits of the evaluation described above, we submit the following conclusions and recommendations:

1. By far the most important result from the empirical analysis concerns the apparently superior performance of commuters. Commuter corpswomen are substantially less likely than residents to drop out of the Center during their first three months, and are no more prone to drop out thereafter. Controlling for population differences strengthens this result. Furthermore, when other factors are controlled for, commuters are found to register greater cognitive gains both during basic education and during their entire stay at the Center. Attitude changes while at the Center are about the same for residents and commuters. Thus, in terms of the proximate outcomes considered in this study, commuters clearly perform at least as well as residents and by several measures they do substantially better. Accordingly, we recommend that the commuter program at LAWJCC be continued.

2. The two populations, residents and commuters, differ substantially in their characteristics. The commuter program serves a population not served by the traditional resident program. Of

---

*S. J. Carroll et al., Evaluation Design for the Los Angeles Women's Job Corps Center, RM-6373-OEO, December 1970.

particular importance in this respect is the substantial proportion of commuters who must care for dependent children and would, therefore, find it difficult to reside at the Center. Since this study concerned only the LAWJCC, our results cannot be generalized to what might happen if similar programs were instituted elsewhere. Nevertheless, the potential ability of a commuter-type program to serve segments of a population not reached by resident programs (and vice versa) should not be overlooked. Since our results provide no reason to believe that commuters will not perform as well as residents, we recommend that similar commuter programs be instituted on an experimental basis in other residential Centers.

3. We have examined a number of demographic variables in terms of proximate outcomes. We found that Mexican-American corpswomen are more likely than other corpswomen to remain at the Center for long periods of time. There is no evidence that Mexican-American women are less motivated than others; in fact, they are less likely to be absent from basic education classes. Despite their superior attendance records, however, these women consistently register lower cognitive gains during basic education, even after controlling for other factors. These results carry particularly important implications for the commuter program; the proportion of Mexican-Americans is substantially greater among commuters than among residents, and we suspect that the Center has not fully adjusted to the relatively large influx of Mexican-American women that accompanied the commuter program. We recommend that the Center staff pay particular attention to the needs of the Mexican-American corpswomen. Instituting an "English as a second language" program should be considered, as should a special pre-orientation program.

4. Regardless of residency status or background, corpswomen consistently registered larger gains during basic education on the Job Corps' own achievement tests than on the Stanford Achievement Tests. This was true for both reading and mathematics. Interestingly, measured grade levels at entry were quite similar on the two sets of tests. We found that hours of attendance in basic education exercised

a powerful influence on gains registered by the Job Corps tests, a much weaker influence on gains measured by the SAT tests. These results support the possibility that the material treated in basic education is closely related to skills tested by the Job Corps' own instruments. To discover the precise relation between the two sets of tests would require an analysis of the tests themselves, a task beyond the scope of this study. We recommend that the Job Corps undertake a study of the relationship between these two batteries of tests with a view toward establishing whether stressing the concepts tested in the Job Corps battery is consistent with the Job Corps' educational objectives.

5. The analysis of length of stay indicated that women who drop out of the Center during the first 90 days tend to be young, non-black high school dropouts, who lived with neither parent prior to entry and who score relatively low on the entry Stanford mathematical test. We recommend that counseling activities be focused on such women soon after their entrance.

6. Throughout this study we have focused on proximate outcomes, on the assumption that a woman who performs well with respect to proximate outcomes is more likely to succeed in adult life than a woman who performs less well. Before much reliance can be placed on the evaluative results, the accuracy of this assumption must be verified. We recommend that the Job Corps undertake a longitudinal evaluation to determine which, if any, proximate outcomes are valid indicators of program efficacy over the long run.

7. Often data necessary to the evaluation of program performance are not scheduled for collection until a woman's departure. As a result, such data are frequently not obtained. Also, serious sampling biases can occur. For example, women who decide to terminate and are antagonistic toward the Job Corps may refuse to take attitude tests. We recommend that the Job Corps collect performance data at routine intervals, whenever possible.

In the course of the study we obtained several additional results that do not directly lend themselves to policy recommendations:

- o The program variables included in the analysis, with the exception of residency, proved not to be systematically related to the length of time corpswomen remain in the Center. Our measures were crude, however, omitting certain program services such as counseling.
- o Cognitive gains were directly related to hours of attendance in basic education.
- o Cognitive gains were not related to hours of attendance after basic education.
- o The lengths of time corpswomen remained in the Center after basic education were unrelated to their cognitive gains during basic education.
- o Women whose attitudes toward the world -- as measured by the "optimism" tests -- were relatively positive tended to drop out less frequently after basic education.
- o None of the measures of attitude change was systematically related to the program inputs as we were able to measure, or to the demographic characteristics of the incoming population.
- o A minority of Corpswomen appeared to improve somewhat in job-relevant attitudes while at the Center; the majority apparently did not.

II. THE LOS ANGELES WOMEN'S JOB CORPS CENTER: BACKGROUND

The LAWJCC, located in downtown Los Angeles, provides basic education, counseling, vocational training, and related services to young women, 16 to 21 years old, from impoverished families. Since its inception in 1965 the Center has operated as a residential facility; until the summer of 1969 all women enrolled in the program, approximately 315 at any one time, resided in the Center itself. In June 1969 the Center was funded to operate an experimental program for women commuting daily from points within the Los Angeles area. At any one time just over 100 women are enrolled in the commuter program. These commuters participate in the same basic education and vocational training classes as the residents and are afforded the same support services, such as counseling and medical services. Commuters are also included in informal after-hours Center activities.

The Center's training program is essentially the same for both residents and commuters. Upon entry into either program a woman begins a two-week orientation sequence. During this period corpswomen are introduced to the Center's staff and facilities. They are told what the Center expects of them and what they may expect from the Center. The women take a number of tests, drawn for the most part from the Stanford Achievement Test series, and begin to interact with the Center's counselors.

After the orientation period the corpswomen are given about eight weeks of basic education emphasizing reading and arithmetical skills.* Each woman begins her basic educational work at a level consistent with her previous achievement as measured by the Stanford tests. She is allowed to work at her own pace, aided by the basic education instructors. The educational materials were designed for the Job Corps and are used at all Job Corps Centers.

---

*Depending upon her progress in basic education and the educational requirements of the skill-training program she wishes to enter, a particular corpswoman may spend more or less time in basic education.

Interspersed with basic education classes are counseling sessions and classes in "life skills." The counselors acquaint [illegible] with the skill-training pr[illegible]m which they may choose, and aid them in choosing a program consistent with their abilities and aspirations. In the life skills classes the corpswomen receive instruction in a variety of areas ranging from the basic principles of personal hygiene to cooking and sewing.

Once the basic education period is completed, the corpswoman is free to move into one of a variety of vocational training programs. The stated philosophy of the Center is that she is free to choose any training and the Center will attempt to provide it, often by contracting with an outside training institution. However, she is assisted in making her decision by the Center staff, who base their recommendations upon their assessment of her abilties and potential. Depending upon the availability of open "slots" in the chosen vocational program, the corpswoman may spend some time waiting to begin her training. During this waiting period the Center typically provides some pre-vocational training.

Women have been traditionally recruited into the on-going residential program by the Women in Community Service (WICS), a nation-wide volunteer organization. About 50 percent of the residents come from the Western states; most of the remainder are from the old South. At any one time 25-30 states are usually represented among the approximately 300 women in the Center's resident program. In addition, the U.S. territories of Guam and Puerto Rico have typically been represented. Very few of the residents are from the immediate Los Angeles area.

During the summer of 1969 the WICS contract was terminated by the Department of Labor. Recruiting responsibility was turned over to the various state employment services. Coincidentally with the shift in recruiting responsibility, demographic characteristics of the Center's population began to change. Women from urban areas of the Midwest and Northeast Coast began to appear in substantial numbers for the first time. Representation from the old South declined, and enrollees from Hawaii and the island territories ceased to appear altogether.

The WICS contract was renewed early in 1970. It is not yet clear whether the demographic profile of the Center will, as a result, move back toward its original distribution.

Women for the commuter program are recruited separately, by a staff employed by the LAWJCC for this purpose. The commuters' homes are clustered in three areas of the city -- a predominantly black area not far from the Center, a predominantly Mexican-American area in East Los Angeles, and a more racially and ethnically mixed area located at a greater distance from the Center in the vicinity of Los Angeles harbor. This geographic clustering of enrollees was necessary to facilitate the transportation of participants.

We examined entry characteristics of the 501 corpswomen who entered the Center between June 1, 1969 and May 29, 1970 and remained in the program for at least one week. Table 1 reports percentage distributions by residence status for each of a number of variables. Corpswomen occasionally refused, or were unable, to answer a question. In other cases questionnaires were lost or never given to a corpswoman. At the head of each subcolumn in Table 1 we report the number of corpswomen in that category for whom we had valid information. The tests of statistical significance were based on analyses of frequency distributions.

As Table 1 makes evident, corpswomen who participated in the commuter program differ in important ways from the comparable resident population. Commuters, for example, tend to be older and to have relatively more education.* The two groups also differ significantly in regard to racial distributions.** The proportion of blacks in

---

*Both differences are due to the relatively greater proportion of 16-year-olds in the resident program. A Job Corps regulation required that commuters be at least 16-2/3 years old.

**For this analysis, what we have chosen to call "ethnicity" was divided into three categories: Black, Mexican-American, and Other. The "Other" category is almost exclusively Caucasian, but includes a sprinkling of Oriental girls and girls from the Pacific Islands.

Table 1

PERCENTAGE DISTRIBUTIONS OF CORPSWOMEN'S CHARACTERISTICS BY RESIDENCY

Characteristic	Residents	Commuters
Age[a]	(317)	(183)
16	16.7	4.9
17	23.0	29.0
18	21.8	21.9
19	18.3	19.7
20	13.9	14.8
21	5.7	9.8
22	.6	0.0
Ethnicity[a]	(295)	(175)
Black	47.5	52.6
Mexican-American	14.9	30.9
Other	37.6	16.6
Highest Grade Completed[a]	(288)	(169)
9 or less	36.1	21.9
10	22.6	36.1
11	11.8	21.9
12	29.2	18.9
13 or more	.3	1.2
Marital Status[a]	(312)	(183)
Married	1.6	12.0
All others	98.4	88.0
Number of Dependent Children[a]	(312)	(183)
0	89.1	60.1
1	9.0	30.1
2 or more	1.9	9.8
Parents in Household[a]	(293)	(174)
Not living with parents	22.2	30.0
Mother only	27.1	37.5
Father only	3.2	2.7
Both parents	47.5	28.9
Size of Community[a]	(286)	(174)
City	48.3	75.9
Town or Country	51.7	24.1
Welfare Status[a]	(316)	(183)
On welfare	30.7	61.7
Not on welfare	69.3	38.3

Table 1 - (continued)

Characteristic	Residents	Commuters
Previous Employment	(292)	(169)
Never worked	35.3	34.5
Had 1 or more previous jobs	64.7	65.5
Type of Most Recent Job[b]	(189)	(111)
Domestic	21.7	8.0
Office Worker	12.2	26.8
Waitress	13.8	7.1
Unskilled Factory	6.8	9.8
Other	45.4	48.3
Earnings on Most Recent Job[a]	(189)	(111)
Less than $1.65/hour	57.1	30.6
At least $1.65/hour	42.9	69.4

[a]Differences between the two distributions with respect to this variable are significant at the 1% level.

[b]Differences between the two distributions with respect to this variable are significant at the 5% level.

both groups is roughly the same (about 50 percent). Three-fifths of the non-black commuters, but only one-fourth of the non-black residents, are of Mexican-American descent.

There are significant differences between resident and commuter corpswomen with respect to family structure. Although both groups are predominantly single, a significantly greater proportion of the commuters are married. This difference and the fact that commuters are significantly more likely to have dependent children indicate that the commuter program is attracting women who would have difficulty residing in the Center. Of the three-quarters of all corpswomen who are still living with at least one of their parents prior to entry, the residents are significantly more likely to come from families containing both parents and the commuters to come from female-headed households. Almost one-half of the residents, but only a little over one-quarter of the commuters, are from unbroken homes. A solid majority (62 percent) of commuters come to the Center from homes receiving welfare, twice the proportion of residents (31 percent) from such homes.

Nearly one-half of the women in each program worked before entering the Job Corps; however, commuters and residents tended to have had significantly different kinds of jobs. Residents were more likely to have worked as domestics and waitresses, commuters as clerks. In general, commuters had received significantly higher wages for their work. These differences are, at least in part, attributable to the fact that residents were much more likely to have lived in non-urban environments before entering the Center. Approximately half the residents come from small towns or rural areas, whereas nearly three-quarters of the commuters have lived most of their lives in a large city.

The attitudes of entering women were obtained on scales measuring their degree of self-confidence and the degree to which they possessed

a positive view of the world ("optimism").* Table 2 presents mean self-confidence and optimism scores for corpswomen in the two programs. Overall, residents and commuters appear very similar in attitude at entry. We investigated the distribution of self-confidence scores by ethnicity and age as well as by residency status. Black corpswomen scored higher on the self-confidence scale in both the resident and commuter populations, but the differences were not statistically significant. Age was not related to these scores. On the optimism scale, black resident and commuter corpswomen again scored higher, young black corpswomen scoring higher than their older counterparts.

Table 2

MEAN SCORES ON ENTRY ATTITUDE SCALES BY RESIDENCY
(Resident-Commuter differences not significant)

Scale	Residents	Commuters
Self-confidence	24.2 (192)[a]	24.4 (96)
Optimism	34.3 (193)	34.9 (96)

[a]Cell size upon which mean is based.

In general, we found the resident population to be largely composed of what might be described as the "traditional" poor. These women were typically raised in unbroken, self-supporting homes in rural areas or small towns. They often had a fairly high level of education, but had worked in low-status jobs for low wages. They were seldom familiar with an urban environment.

The commuter group, in contrast, could be characterized as the "new urban" poor. Commuters were typically from the two major minority groups (blacks and Mexican-Americans), grew up in crowded urban ghetto

*See S.J. Carroll, op.cit., Section VI, for a discussion of the the theory and construction of these tests.

conditions and on welfare, and left school early, yet were knowledgeable enough in the ways of the city to find employment in white-collar jobs for reasonably high wages.

Among commuters there were interesting subcultural differences between non-black and black enrollees. The black commuters were more likely to have a child to support, less likely to come from two-parent homes, and somewhat more likely to possess relatively positive attitudes about themselves and their chances in the world. Non-black commuters came from more protective and sheltered environments and had comparatively less confidence in themselves and their ability to find their way in the world.

III. SUMMARY OF THE ANALYSES

METHODOLOGY

The principal statistical tool we employed was multiple regression analysis. Using these techniques, we were able to estimate the impact of each member of a set of independent variables upon a dependent variable while controlling for the influence of all the remaining members of the set. However, for any particular set of independent variables we can include in the analysis only those corpswomen for whom we have observations on every variable in the set. Unfortunately, we had observations on all the variables of interest for very few corpswomen.

Accordingly, we conducted numerous regression analyses for each dependent variable incorporating a large number of different combinations of independent variables.* Those independent variables that were never significant themselves and that never affected the significance of other variables were deleted. In using this procedure we placed strong emphasis upon consistency. That is to say, we did not accept or reject hypotheses on the basis of significance tests generated in any one regression. Instead, we were primarily concerned with whether a variable consistently had the same sign, was of the same order of magnitude, and was significant throughout the analysis. The particular regression results reported here are meant to be exemplary.

We also provide the results of tests of significance for the reported regressions. Strictly speaking, these cannot be interpreted in the traditional sense. Our procedure violates the assumptions that underlie the traditional methods of significance testing. However, it does indicate which variables consistently proved to be significant throughout the analysis.

---

*A listing of the independent variables we examined is presented in Appendix A.

COGNITIVE ACHIEVEMENT*

Corpswomen's achievements in reading and mathematics were measured by two sets of standardized achievement tests, the Stanford Achievement Tests (SAT) and the Job Corps Tests (JCT), administered at several points in time. We constructed, for each corpswoman, six measures of cognitive gain: the difference between her scores on the SAT mathematics (reading) tests given at the end of her basic education program and at her entry into the Center, the difference between her scores on the JCT mathematics (reading) tests given at the same two points in time, and the difference between her scores on the SAT mathematics (reading) tests given at the time she terminated and at the time of her entry into the Center.

Changes in Test Scores

We examined the mean initial grade level and the mean changes in these grade levels as measured by JCT and SAT. All the changes in test scores were positive.** As measured by both the JCT and SAT tests, therefore, improvements in reading and mathematical ability do occur while the girls are at the Center.

There is, however, a striking disparity in the magnitude of the improvement as it is measured by the Job Corps' own tests and by the Stanford Achievement Tests. The SAT tests suggest that during basic education reading and mathematical ability both increase by slightly over half a grade level. The mean increase in reading ability during basic education as measured by JCT is about three times greater than the increase measured by SAT, although both tests measure reading ability at entry to the Job Corps at about a sixth-grade level. The increase in mathematical ability as measured by JCT is about five

---

*The analysis of cognitive achievement is presented in greater detail in Appendix B.

**A test of statistical significance indicated that the mean improvement in test scores is significantly greater than zero at the .001 level in all cases.

times greater. This raises the possibility that the Job Corps is teaching toward their own tests. If this is true, changes measured by JCT would be exaggerated and actual improvements in ability would be more accurately measured by SAT.*

A comparison of the two different time spans covered by SAT indicates that there is little real difference in achievement gains during basic training and during the entire period at the Center. Changes in reading level between entry and termination are, in fact, smaller than changes during basic education. We find that the reading grade level decreased by .02 grades during the post-basic education period, while the math grade level increased by .26 grades. The first number is not significantly different from zero, but the second number is statistically significant at the 5 percent level. During basic education these girls increased their SAT reading ability by .55 grades and their mathematical ability by .61 grades. This suggests that most, if not all, of the improvement in mathematical and especially reading ability that does take place occurs during the basic education sequence.

The relations between scores on the various tests are also revealing. Among the six simple correlations among the four initial tests, for example, the strongest relations are between the two reading tests and between the two math tests. This suggests that the measurement of initial ability levels in reading or math does not depend on whether JCT or SAT is used. All six correlations, however are

*A reviewer suggested that these results may stem from biases in the respective tests. The Job Corps may have deliberately biased their test in order to show large achievement gains. Alternatively, the Stanford tests may be culturally biased whereas the Job Corps tests, being designed for use with this particular subpopulation, accurately measure their true achievement. We are disinclined to accept either hypothesis. Either, or both, sets of tests may be biased for one reason or another. But we would expect any test bias to be reflected in the absolute score a corpswoman attains on that test rather than in her change in score between two repetitions of the test. The high correlations among the initial SAT and JCT scores suggest that if the tests are biased at all they are apparently biased in the same direction to about the same degree.

relatively high, with none falling below .5, and all are of high statistical significance. Thus, relative cognitive ability as measured by one test at entry to the Center is likely to be relected by the other tests.

By way of contrast, the six correlation coefficients for the four test score changes during the basic training period are relatively small. None is above .3, only one is larger than .15, and most are not statistically significant. Similarly, the simple correlation between the SAT measured changes in reading and mathematical ability over the entire stay at the Center is only .13. These weak relationships indicate that a gain as measured by one test is seldom reflected by score changes on the other tests. This may either be because the tests measure different dimensions of achievement or because they measure the same dimension, but with varying degrees of accuracy.

Because changes in test scores are only proximate outcome variables, their value to the Job Corps depends on how well they can predict longitudinal outcomes. The low correlations between changes in scores on various tests suggest, however, that it is unlikely that they are equally valid. This constitutes an important limitation to the present study. We have no way of knowing which, if any, of our proximate outcome variables deserves our confidence: a test of which measure is the most closely related to long term outcomes must await further research.

Regression Results

Thus far we have only described the relationships among a set of proximate outcome measures. Assuming that at least some of these measures are good predictors of future success, we attempted to determine the factors that systematically influence them through multiple regression analysis.

The independent variables we examined are conveniently assigned to two categories: program services, including residency, and individual characteristics. These variables are described in detail in Appendix A.

We turn to the latter category first. It is important to note that a number of the individual characteristic variables investigated were not related to our measures of cognitive gain. Among the more important of these were formal education, school stability, prior experience in the labor market, attitudes, place of origin, and self-rating upon entering the Job Corps. The following variables do appear to be related to changes in test scores: age, socio-economic status as measured by family income, family structure, and ethnicity. Age and family income both appeared to be positively related to achievement, although the age-achievement relation was often statistically insignificant. Mexican-Americans make less gain than Caucasian women. The evidence on blacks is much weaker, but on balance they also make somewhat less progress than Caucasians. The one surprising result is for family structure. Women from father-headed households, women who lived by themselves, and women who lived with a spouse all appeared to perform about equally well. They were therefore grouped together and compared with those who lived in a mother-headed household prior to entering the Job Corps. As measured by several of the test score changes, this latter group made greater-than-average progress while at the Center.

In examining the program variables, we found one of the most important influences on cognitive gain to be hours of attendance in basic education. Its effect is consistently positive and is generally statistically significant. Depending upon the particular assumptions made, the results indicated that it would be necessary to increase basic education by around 200 to 400 hours to obtain an increase of one grade level.* This may be given greater perspective by noting that the girls in our sample averaged slightly more than 200 hours of basic education. Thus, to add one additional grade level, hours of attendance in basic education would have to be at least doubled.

---

*The most extreme result indicated that the basic education sequence would have to be increased by 1000 hours to obtain an increase of one grade level.

It should be stressed that the lowest hours estimates were invariably associated with regressions that used JCT scores as a dependent variable. In fact, some of the estimates based on differences in SAT scores suggested that a three to five-fold increase in basic education hours might be necessary before an additional grade level could be achieved. This is consistent with our earlier hypothesis that the Center tends to teach toward the Job Corps Tests, so that much of what is learned is not reflected by scores on more general measures of ability, such as Stanford Achievement Tests.

The effect of hours of training after completion of basic education is consistently positive, but it is very small and is invariably statistically insignificant. Thus, our evidence indicates that hours of training after basic education contribute little if anything toward cognitive gain. This result receives additional support when days rather than hours of training are used. Even days in advanced training -- a course of study supposedly designed to impart cognitive skills -- do not appear to influence changes in test scores.

Residency

A major reason for utilizing a regression analysis incorporating the variables so far discussed was to control for factors related to test score changes so that the influence of residency could be isolated. In fact, when we did compare corpswomen who entered the resident program with those who became commuters without controlling for other important factors, our results were rather ambivalent. Sometimes the residents appeared to have made the greatest cognitive gain and sometimes the commuters, but most of these differences were statistically insignificant. Once other important factors are controlled for, however, the relationship between residency and five of our six measures of cognitive gain is negative. Although some of the negative relations are statistically significant, the one positive relation is not. From this we conclude that, everything else being equal, to the extent there is an effect of residency on achievement, it is negative.

Thus far we have emphasized the direction of residency's influence on achievement. We now turn to the size of that influence. Rows 1 and 2 of Table 3 permit the initial grade levels and the changes in the grade levels of residents to be compared with those of commuters. Initial grade levels for residents and commuters tend to be similar; in most instances the differences are much smaller than half a grade level.

Four of the six comparisons of changes in grade levels favor commuters. The only difference that is statistically significant, however, is associated with changes in SAT reading levels during basic education, and this comparison favors the residents. The differences between residents and commuters in row 2 range from .01 to .3 with a median value of around one-fifth of a grade. As a fraction of the total change that took place (at least as measured by SAT), one-fifth of a grade level is not inconsequential. But for women who, upon leaving the Center, possess reading and mathematical ability at the sixth or seventh grade level, one-fifth of a grade more or less does not seem very consequential. There is, therefore, no reason to believe that the achievements of participants in the commuter program were either substantially better or substantially worse than the progress of participants in the residential program.

This is not to say, however, that it makes little difference to a given woman, everything else being equal, whether she is placed in the resident or the commuter program. To examine this issue, we report in the third row what we consider our best estimates of the change in grade level attributable to residency. These estimates are calculated directly from the coefficients for residency in the regressions that incorporate our full set of independent variables.* Thus, these estimates are as close as we could come to measuring the impact of residency, while holding all other systematic determinants of test score changes constant.

*See Table B-6 in Appendix B.

Table 3

CHANGE IN GRADE LEVEL ASSOCIATED WITH RESIDENCY AND WITH BEING A MEXICAN-AMERICAN

	Change over Basic Education								Change from Entry to Termination			
	JCT				SAT				SAT Only			
	Reading		Math		Reading		Math		Reading		Math	
	Residents	Commuters	Residents	Commuters	Residents	Commuters	Residents	Commuters	Residents	Commuters	Residents	Commuters
	1		2		3		4		5		6	
1. Initial Grade Level	5.89	5.87	5.25	5.29	6.06	5.73	5.75	5.49	6.09	6.26	5.93	5.49
2. Change in Grade Level	1.58	1.55	2.74	2.75	0.66	0.36	0.53	0.73	0.28	0.51	0.74	0.92
3. Change in Grade Level Attributable to Residency	-0.21		-0.30		0.18		-0.34		-0.47		-0.15	
4. Change in Grade Level Attributable to Being a Mexican-American	-0.34		-0.87		-0.41		-0.43		0.05		-0.41	
5. Number of Observations	110	126	110	126	73	66	73	66	38	45	38	45

The estimates reported in row 3 provide an answer to the following question: What would the increase in grade levels have been for girls placed in the commuter (residency) program had they instead been placed in the residency (commuter) program? To illustrate, let us look at the change in reading level during basic education as measured by JCT. Row 2 indicates that residents and commuters both improved by slightly more than a grade and a half. Row 3 indicates that, had the residents been commuters, their grade level would have increased by about 1.8 grades. Had the commuters been residents, on the other hand, their grade level would have increased only by about 1.3 grades.

Three of the estimates in row 3 are based on insignificant regression coefficients and cannot therefore be assumed to be statistically different from zero. The three remaining estimates imply that residency has a negative impact of one-fifth to almost one-half a grade. The upper end of this range is certainly large relative to the increases that actually did take place, at least as measured by SAT, but the overall impression conveyed by Table 3 is that <u>at worst</u> residency will have no more than a slightly negative impact on future success. However, this conclusion must remain tentative until more is known about the relation between changes in grade levels while at the Center and experiences upon leaving the Center.

Row 4 is similar to row 3, except that the estimates are based on the regression coefficients for Mexican-Americans, rather than for residency. With but one exception, the change in grade level attributable to being a Mexican-American is larger than that attributable to residency. This indicates that, if everything else is equal, Mexican-Americans are under a greater handicap than are residents.

ATTITUDE CHANGE

Two measures of attitude change have been utilized. Self-perceived changes in attitudes are based on a series of open-ended questions administered upon termination from the Center. On the basis of their answers corpswomen were separated into: those perceiving a positive change, those perceiving a negative change, and those seeing no change.

The second measure of attitude change is based upon two attitude tests developed by Regis Walther in a study of the Neighborhood Youth Corps.* The first Walther test provides a measure of self-confidence, and the second, labeled by Walther as "optimism," measures the degree to which the world is seen as friendly and manageable.

Since the Walther tests are presumably objective, whereas the self-perceived measures are subjective, the former might be viewed as superior. The relative merits of the two approaches, however, remain controversial.** Moreover, our Walther test data are subject to important limitations related to when the tests were given. The tests were administered at two points in time: at a Corpswomen's thirteenth week at the Center and at her termination. This means that the Walther tests cannot be used to measure attitude changes during the basic education sequence, a period when one might expect considerable change to take place. Equally important, it means that we cannot use the Walther tests to measure attitude changes among corpswomen who leave the Center during their first thirteen weeks, a group whose attitudes are likely to be adversely affected by their Job Corps experience.*** Furthermore, the final Walther tests were administered much less systematically than were the self-perceived attitude change questions.

Besides the Corpswomen for whom we have self-perceived attitude change measures but not changes in Walther test scores, there is a second, larger group for whom we have neither. This group includes those who terminated without providing the necessary data -- once a trainee decides to terminate the Center's ability to elicit her

---

*Regis Walther, The Measurement of Work Relevant Attitudes, Social Research Group, George Washington University, February 1968.

**See Walter Mischel, Personality and Assessment, Wiley & Sons, New York, 1968.

***In a regression analysis, however, we did not find a systematic relationship between length of time at the Center and any of the five measures of attitude change. This implies that leaving early terminators out of the Walther sample may not be seriously distorting.

cooperation in interviews and test taking is obviously limited -- and those who had not yet terminated when the data cutoff occurred. The attitudes of the first subclass seems likely to have disproportionately changed for the worst and those of the second subclass likely to have disproportionately improved.

Relationships Among the Attitude Change Measures*

The simple correlations among the five measures of attitude change indicate that attitude changes as measured by the Walther tests are virtually unrelated to attitude changes as perceived by the Corpswomen themselves. This is disturbing because it suggests that our two types of attitude change measures have different stories to tell; it is not clear, as we noted above, which should be considered the more reliable.

Correlations among the three self-perceived measures and between the two Walther measures are generally statistically significant. The coefficients, however, are not particularly large. This is not surprising. The three self-perceived measures, like the two Walther tests, were each designed to assess different dimensions of attitude change, and conceptually there is no reason why these dimensions must change in the same way over time. Further research is necessary before we can tell which, if any, of the five measures are useful predictors of longitudinal outcomes.

Attitude Changes While at the Center

In Table 4 we compare, for each measure, the percentage of corpswomen whose attitudes improved while they were at the Center, the percentage whose attitudes change for the worse, and the percentage whose attitudes did not change. On the basis of the "objective" Walther tests, about as many corpswomen seemed to have regressed in attitudes as have improved. On the basis of their subjective perceptions, however, more corpswomen felt they were leaving the Center with improved attitudes

*The correlation coefficients upon which the discussion in this section is based are presented in Appendix C.

Table 4

DISTRIBUTION OF ATTITUDE CHANGES WHILE AT THE CENTER
(percent)

	Walther Tests		Self-Perceived Attitude Change		
	Self-Confidence	Optimism	Self-Concept	Social Ability	View of the Future
Total	100	100	100	100	100
Improved	43.9	43.3	45.7	35.5	30.5
No change	12.1	11.9	39.3	62.1	59.1
Worsened	44.0	44.8	15.0	2.4	10.4
Number of observations	67	67	175	169	141

than thought they were leaving with poorer attitudes. Nevertheless, even on the basis of self-perception, a clear majority of terminating corpswomen indicated that they either did not change in attitude while at the Center or that they changed in a negative direction.

Our finding that attitudes improved on balance as reported by the trainees themselves, but not as measured by the more objective Walther tests, is similar to the results of research on hallucinogenic drugs.* Subjects frequently report that taking the drug was a powerful experience, sometimes stating that one experience will affect their entire life. Psychological tests, however, have indicated little change. It is unclear whether this indicates that persons unrealistically tend to magnify the importance of experiences in their recent past or that available tests are not very useful indicators of change. Some of the disparity between the objective and the subjective measures may also be associated with the failure to give the initial Walther tests until the thirteenth week at the Center.

*See W. H. McGlothlin, Sidney Cohen, and Marcella S. McGlothlin, Short Term Effects of LSD on Anxiety, Attitudes and Performance, P-2757, The Rand Corporation, June 1963.

The disparity between the objective and the subjective measures prevents a final conclusion as to whether the Center is able to effect an overall improvement in attitudes. It is most reasonable to conclude that although a minority of trainees probably do improve somewhat in attitude, the majority do not.

Residents vs. Commuters

A comparison of resident and commuter attitude changes appears in Table 5. To facilitate the comparison, corpswomen perceiving a negative change were combined with those not perceiving a change; the Walther results reported in Table 5 are the mean percentage change in scores between the initial and the final tests.

None of the differences between commuters and residents with respect to either self-perceived or objective attitude measures are significant. Although the changes on the Walther tests are positive, no change is significantly greater than zero at the five percent level. Thus, without controlling for differences in the characteristics of the two populations or for differences in the services each receives, we may conclude that attitude changes for residents and commuters are about the same.

To introduce controls for other factors that may influence attitude change we experimented with regressions incorporating various subsets of the independent variables listed in Appendix A. It was hoped that in addition to isolating the influence of residency on attitudes, the regression analysis would suggest individual characteristics and program services (other than those directly associated with residency itself) that are related to changes in attitudes.

The results of the regression analysis were disappointing. The analysis was rendered difficult by relatively small sample sizes and by sampling biases. The results were extremely sensitive to variations in the set of independent variables and to variations in sample composition.* Based on the best evidence we could assemble, we concluded that

*Because of missing information, the sample composition was itself a function of which independent variables were used.

Table 5

MEASURES OF CHANGES IN ATTITUDES

	Walther Tests[a]				Self-Perceived Attitude Change[b]					
	Self-Confidence		Optimism		Self-Concept		Social Change		View of the Future	
	Change	No. Observ.	Change	No. Observ.	Change	No. Observ.	Change	No. Observ.	Change	No. Observ.
Residents[c]	2.1	48	4.3	48	47.4	114	37.3	110	30.8	91
Commuters[c]	5.0	19	7.9	19	42.6	61	32.2	59	30.0	50
All	2.9	67	5.3	67	45.7	175	35.5	169	30.5	141

[a]Change on the Walther Tests is measured as the mean percentage change in test scores between the initial test and the test at termination.

[b]Change in self-perceived attitude is measured as the percentage of reporting corpswomen who indicate a positive change.

[c]None of the differences between residents and commuters are statistically significant at the .1 level.

neither the program inputs nor the individual characteristics that we could measure are systematically related to our measures of attitude changes.*

Although the regression results were disappointing, they nevertheless consistently pointed to one major conclusion: no matter what measure of attitude change or combination of independent variables was used, residency was not statistically associated with attitude change. On the basis of our best evidence, therefore, the service of residency appears to exert little or no influence on the attitudes of corpswomen.

LENGTH OF STAY

Our data extend only through May 29, 1970, and many of the women in the sample had not terminated by that date. For these corpswomen we do not, of course, know when they left the Center, if, in fact, they are not still corpswomen today. However, we do know how much of the program they completed by that date. For example, if a corpswoman entered the Center sometime in February 1970, and had not terminated by the end of May 1970, we have no idea of how long thereafter she remained in the Center. But we could include her in an analysis of the factors that induce women to remain in the Center through the first 90 days of her program. We could not include her (or anyone else who entered the Center after January 1970) in an analysis of the factors related to the completion of the first 120 days of a program. Similarly, when we examine the probability that a corpswoman will make it

*There are at least three possible explanations for this result, and we have no way of determining which is the best. The first is that little or no real change in attitudes took place; the second is that there was a change, but our measures inadequately captured it. These explanations imply that the differences between corpswomen indicated by our measures are essentially meaningless. The third explanation is that changes in attitudes while at the Center are essentially random or unrelated to the individual characteristics and program inputs that we have measured. There may, of course, be other characteristics or inputs we have not measured that are related to attitude change. An important example is counseling.

through the first 180 days of her program we must restrict the analysis to those who entered the Center prior to December 1969.*

This restriction is reflected throughout the analysis. Rather than simply investigate the factors related to corpswomen's length of stay, we chose an arbitrary point in time, restricted the sample to women who entered the Center prior to that time, and examined the factors related to the number of days between our point in time and May 29, 1970 that members of the sample remained in the Center.** Of course, as the point in time becomes further removed from May 29, 1970, the size of the sample was reduced and the statistical results become less accurate. Because of this problem we focused on 90, 120, 180, and 240 day lengths of stay; sample sizes for longer periods of time were too small to support the statistical tests.

Completion Rates

We began with an examination of the overall completion rates for residents and commuters (see Table 6). Our results clearly indicate that, overall, commuters tend to remain in the Job Corps for significantly longer periods of time. We find, for example, that over 80 percent of the commuters remain in the program for at least 90 days, whereas one-third of the residents leave the Center within their first 90 days. Similarly, two-thirds of the residents drop out within 8 months (240 days) of entering the Center. On the other hand, the Center has held over half the commuter corpswomen for at least that long.

The analysis also suggested that the disparity in completion rates between residents and commuters narrows as the time period grows longer. In order to examine this possibility more carefully, we have calculated "conditional" completion rates for residents and commuters (see Table 7).

---

*For convenience, we assume 30-day months throughout the discussion.

**If, for example, our point in time was December 1969, we attempted to find, for corpswomen who entered the Center prior to that date, the determinants of the number of days (up to a maximum of 180) that they remained in the Center between December 1969 and May 29, 1970.

Table 6

OVERALL COMPLETION RATES

Length of Period (days)	Residents (percent)	Commuters (percent)	Total (percent)
90[a]	66.0 (153)[c]	83.7 (135)	74.4 (288)
120[b]	56.2 (137)	74.4 (125)	65.0 (262)
180[b]	50.4 (121)	60.5 (114)	55.1 (235)
240[b]	33.3 (81)	50.6 (83)	42.1 (164)

[a]Difference between residents and commuters is significant at the .05 level.

[b]Difference between residents and commuters is significant at the .10 level.

[c]Numbers in parentheses indicate the sample sizes upon which completion rates are based.

Table 7

CONDITIONAL COMPLETION RATES[a]

Length of Period (days)	Beyond Day	Residents (percent)	Commuters (percent)	Total (percent)
60	180	77.1 (35)[b]	84.0 (50)	81.2 (85)
150	90	57.4 (47)	60.0 (70)	59.0 (117)
60	120	88.4 (69)	82.1 (84)	84.4 (153)
90	90	74.4 (82)	71.9 (96)	72.6 (178)
30	90	85.6 (90)	88.6 (105)	87.2 (195)

[a]None of the differences between residents and commuters are statistically significant.

[b]Numbers in parentheses indicate the sample sizes upon which completion rates are based.

These show the rate at which girls who have completed a given number of days in the program tend to remain in the Center for various subsequent lengths of time. For example, 35 resident girls entered the Center at least 240 days before May 29, 1970 and completed at least 180 days. Of these 35 corpswomen 77 percent remained in the Center for at least 60 or more days. Similarly, 50 commuters entered the Center at least 240 days before our data cutoff and remained for at least 180 days. Of these, 84 percent were still in the Center 60 days later. In other words, the conditional probability that a corpswoman will complete 240 days, given that she has completed 180 days, is 77 percent if she is a resident and 84 percent if she is a commuter.

Statistical analysis of the conditional completion rates yields an extremely interesting result: the conditional completion rates for residents and commuters who remain in the Center at least 90 days are not significantly different. This result, in connection with the overall completion rate results cited above, implies that resident corpswomen are much more likely to drop out of the Center during the first 90 days than are commuter corpswomen. Overall residents are less likely than commuters to remain in the program for lengthy periods of time (roughly, four to eight months); but this is almost entirely due to the propensity of residents to terminate during the first three months. If we consider only those corpswomen who stay through the first three months, residents are no more likely to drop out thereafter than are commuters.

In our examination of completion rates, we have so far only examined the relation between residency and length of stay. For a simultaneous investigation of the relationships among a large number of possible explanatory variables and length of stay, we turn to multiple regression analysis.* This technique allows us to examine whether our earlier results for residency remain valid when other factors are held constant.

---

*The regression analysis is only summarized here, but it is presented in full detail in Appendix D.

Residency

We ran a number of regressions in which the dependent variables were the total number of days a corpswoman remained in the Center. The coefficient of residency was negative and quite significant in all equations. This result was obtained in all regressions no matter what combination of demographic variables was used to control for differences in the respective incoming populations and no matter what combination of program service variables was used to control for the impact of the Center. It is clear that, overall, residents tend to remain in the Center fewer days than otherwise similar commuters.

This result is surprising at first glance. Residents must rely on the Center for transportation home. Hence, the Center's staff generally has two or three days during which travel arrangements are being made to work with the corpswoman and attempt to change her mind. Commuters, on the other hand, typically terminate simply by ceasing to appear at the Center. Thus staff members have no opportunity to affect their departure decisions. However, it must be remembered that the vast majority of the residents' homes are thousands of miles from Los Angeles. Once a resident leaves it is impossible for Center staff to contact her and attempt to attract her back into the program. Commuters, on the other hand, can be easily reached after they terminate. We understand that the Center's staff has been quite successful in inducing commuter program dropouts to return to the Center.

Interestingly, we found that the level of statistical significance of the residency variable consistently declined as we expanded the sample to include corpswomen who had spent greater lengths of time at the Center. This supported our earlier results concerning overall completion rates. Accordingly, we ran a number of analyses in which the samples were restricted to corpswomen who had remained in the program some minimum number of days and the dependent variables were the number of days they remained beyond the minimum.*

*The minimum periods used were 90 days, 120 days, and 180 days.

Residency was insignificant in virtually all the regressions. In general, there is no evidence that the services included under residency are related to length of stay beyond 90 days among corpswomen who stay at least through the first three months after entrance. This result is consistent with our earlier observation that the significance of residency in the overall regressions steadily declined as the time period was extended.

Individual Characteristic Variables

As noted above, we were also able through regression analysis to make a simultaneous examination of a large number of individual characteristic variables. Among the variables that do not consistently appear to influence the length of time that a corpswoman remains in the Job Corps are: age, place of origin, school stability, prior experience in the labor market, size of place raised (urban-rural), socio-economic status as measured by family income or parents' educational levels, and grade level on any of the four entry achievement tests.

The following variables do appear to be related to length of stay: high-school graduation, ethnicity, family structure, and attitudes. These variables generally influenced length of stay in the expected direction. High school graduates tended to remain in the Center for significantly longer periods of time than women who have not completed high school, other things being equal. Black corpswomen appear to stay in the Center significantly longer than whites, at least through the first four or five months, but from day 120 onward there is little evidence that black corpswomen are less prone to drop out. After their first three months in the Center, Mexican-American corpswomen behave in approximately the same fashion as black corpswomen. However, our results indicated that during the first 90 days in the Center Mexican-American corpswomen were no less prone to leave than were white corpswomen.

We experimented with a number of variables describing a corpswoman's family structure. Whether she lived with both parents or with her

mother proved to be the only consistent predictor of her length of stay. The size of her family, whether she had dependent children, whether her family was on welfare, and who headed her family (if not a parent) were all statistically insignificant. Women from two-parent households, or who lived with only their mothers, were significantly less likely than women who had lived with neither parent to drop out of the Center during their first three or four months after entry.

The degree to which the world is seen as friendly and manageable as measured by the Walther optimism test was significantly and positively related to the length of time a corpswoman spent in the Center. A corpswoman's rating on the self-confidence attitude scale, her self-rating (that is, how intelligent she thought she was compared with the average), and her reason for entering the Job Corps were not related to length of stay.

Program Services

The amount of time spent in basic education varies from one corpswoman to another, but very few spend more than 90 days. By deleting these women we were able to construct a sample such that every corpswoman included in the analysis had completed basic education and had received an assignment to a subsequent course of training before her 90th day in the Center. We employed measures of whether a corpswoman entered a skill-training program or an advanced education program at the end of her basic education, and whether she was assigned to a work task after basic education. We also examined the amount of time a corpswoman spent in basic education. We experimented with her scores on the four achievement tests given at the end of basic education and with changes in the four test scores over the basic education period. None of these variables proved to be related to how long a corpswoman remained in the Center beyond day 90.

These results imply that what happens to a corpswoman while she is in basic education has no discernible effect upon how long she remains in the Center after completing basic education. Furthermore, there is no apparent relationship between her assignment after basic education and her subsequent length of stay.

Magnitude of Residency's Impact

Now that we have narrowed residency's influence to the first 90 days that corpswomen are in the Center, it is useful to examine the size of that influence. To do this we recalculated our 0 to 90 day regression, changing only the dependent variable so that corpswomen who completed all 90 days were assigned a one and those who failed to complete 90 days were assigned a zero. The resulting coefficient for residency allows us to compare the probability that a resident will complete the first 90 days of her training with the same probability for a commuter, holding other factors constant. Our results, which were highly significant, indicated that, other things being equal, a resident is 23 percent* less likely to complete the first 90 days.

This result may be contrasted with our estimate of the impact of residency where we did not control for other factors. There we estimated that a commuter is about 18 percent more likely to remain in her program through the first 90 days. The difference between these two estimates is largely due to the significantly higher proportion of high school graduates in the resident program.** High school graduates are much less likely to depart within 90 days of entering the Center. Thus, the higher proportion of non-graduates in the commuter program obscures the negative impact of residency in an analysis that does not control for other factors.

---

*The t-value for this estimate is 5.92, significant at the .001 level.

**See Table 1.

APPENDICES

Appendix A*

VARIABLES EXAMINED DURING THE INVESTIGATION

DEPENDENT VARIABLES

We have focused on three proximate outcomes in this analysis: corpswomen's cognitive gains, the length of time they remain at the Center, and changes in their attitudes. In each case we have used a number of different measures of the outcome.

Cognitive Gains

The Stanford Achievement Tests (SAT) measure a woman's achievement in reading and mathematics by comparing her score with nationwide norms. These tests are widely used throughout the United States. Corpswomen were given SAT at entry to the Center, upon completion of the basic education sequence, and at termination from the program. These tests provide measures of changes in reading and mathematical ability both during basic education and during the entire stay at the Center. If a corpswoman should terminate at or before completing the basic education sequence, the two time periods are, of course, coterminous.

Job Corps Tests (JCT), designed for and exclusively used by the Job Corps, are an alternative to SAT. These tests are administered at entry to the Center and upon completion of the basic education sequence. They provide a measure of a corpswoman's progress in reading and in mathematics while she is in basic education.

Attitude Change**

We examined both objective and subjective measures of attitude change. The objective measures were derived from two attitude scales

---

*The evaluation design contains an extensive discussion of all variables examined in the study. Complete details of the data collection process and the construction of variables from the data are also given there. See S. J. Carroll et al., op. cit.

**For a more detailed discussion of theoretical considerations concerning attitudes and their measurements, see ibid., Section VI.

developed by Regis Walther. The first attempts to measure general feelings of self-confidence, and the second attempts to measure what Walther terms "optimism," the degree to which the world is seen as friendly and manageable. Corpswomen are asked to respond to each of these scales in their twelfth week in the program and again at termination. The differences between these two scores for each scale are used as objective measures of attitude change.

At termination the corpswomen are asked a series of open-ended questions regarding their opinion as to whether their attitudes have changed during their participation in the Job Corps. For example, self-perceived changes in social ability were estimated by asking the following question: "Has the way you get along with people changed?" Corpswomen were separated into three categories: those perceiving a positive change, those perceiving a negative change, and those perceiving no change. Similarly, changes in a corpswoman's self-perceived view of the future were assessed by asking, "Do you see your future in the same way?"

Two pairs of questions were used to appraise changes in a corpswoman's self-concept: "Try to remember how you felt when you first came to the Job Corps. Do you think you changed any since you've been here? (If yes) In what way?" And "Do you think of yourself in the same way? (If no) How have you changed?" After examining a number of questionnaires we decided to combine the answers to the two pairs of questions since the responses tended to be overlapping. Corpswomen who indicated in answering either set of questions that they had changed in a positive direction were coded as experiencing a positive change in self-concept. And corpswomen who provided a negative answer to either set and a positive answer to neither were placed in the negative category.

Length of Stay

Our data extend only through May 29, 1970, and many of the corpswomen in the sample had not terminated by that date. For these women we do not, of course, have termination dates. However, we do know how

much of the program they completed by the cutoff date. If a woman entered the Center sometime in February 1970, for example, we know whether she terminated before May 1970. Consequently, we know whether or not she remained in the Center for at least 90 days and we can include her in an analysis of the factors that induce women to remain in the Center through the first 90 days of their program, though not in an analysis of the factors related to completion of the first 120 days. Similarly, to examine the determinants of length of stay over a 180 day period, we must restrict the analysis to corpswomen who entered the Center prior to December 1969.* Thus, to calculate the proximate outcome variables used in this part of the analysis, we chose arbitr points in time and restricted the sample to corpswomen who entered t Center prior to that time. The variables are calculated as the numbe of days each member of a sample was at the Center between a particular point in time and May 29, 1970. We have replicated the analysis four times, focusing on 90, 120, 180, and 240 day lengths of stay.

We use the notation Days (X, Y) for all of our dependent variables where X is the minimum number of days a corpswoman must have spent in the Center to be included in the analysis and Y is the number of days prior to May 29, 1970 she must have entered the Center in order to be included. For example, Days (120, 240) is the notation used when we analyze the factors related to length of stay beyond 120 days among women who entered the Center at least 240 days before the data cutoff date.

The value of the variable for a corpswoman included in the sample is the number of days she remained beyond the minimum for inclusion (X in our notation) or the number of days prior to the data cutoff date (Y in our notation) less the minimum, whichever is smaller. For example, a woman who entered the Center December 20, 1969, and terminated May 10, 1970, would not be included in the analysis when the dependent variable was Days (0, 240) or Days (90, 240) or, in general, Days (X, 240), for any number X, because she did not enter the Center 240 days before the

*For convenience, we assume 30 day months throughout the analysis.

cutoff date. She would be included in the sample for Days (0, 180). And, because she remained in the Center 170 days past the minimum, 0, she would be assigned the number 170 in the analysis. When the analysis concerns the dependent variable Days (X, 180) she would also be included. She would be assigned the value 170-X, indicating that she stayed at least 170-X days past the minimum.

INDEPENDENT VARIABLES

The independent variables -- the potential determinants of systematic variations in our proximate outcome measures -- fell into two natural categories, program services and individual characteristics. The latter are interesting in themselves and must be taken into account if we are properly to isolate the contribution of program inputs.

Program Service Measures

Residency. Because some of the corpswomen reside at the Center and others commute, somewhat different treatment is accorded the two groups. Measurement of the impact of this difference is, of course, the focal point of this study. We cannot, however, isolate each aspect of the differences in treatment received by residents and commuters. Rather, we view residency as a single aggregate service offered to some women and not to others. For the regressions, residents were assigned a one and non-residents a zero.

Type of Training in Days. The quantity of services a corpswoman receives from the Center should be roughly proportional to the number of days she spends at the Center. This measure has been somewhat refined in this report by dividing days at the Center into four categories: days in basic education, days in advanced training, days in skill training, and days in holding. Since basic education and advanced training are supposedly most concerned with imparting cognitive skills, we should expect the strongest positive relation between days in these activities and improvements in JCT and SAT test scores. Skill training is mostly concerned with vocational education and should generally therefore be more weakly related to improvement in reading or math

than either basic education or advanced training. Often, after a corpswoman completes her basic education sequence, she must wait a short period before beginning skill training. During this "holding" period a corpswoman may receive some preliminary training, but we suspect that for most women this time does not make a positive contribution.

Hours of Training. A better measure of the quality of training received than days in training is the hours of training actually received. Because of absences, corpswomen with an equal number of scheduled days may diverge considerably in hours attended. Unfortunately, because of data limitations, hours of training can only be divided between hours of basic training and hours of training after the basic education sequence has been completed.

Training Assignment. All corpswomen who remain in the Center beyond basic education enter one of three activities: skill training, advanced education, or a work task. This last includes women who are waiting for a particular skill-training program to begin or for a vacancy to appear in an ongoing skill training program. Work task is a zero-one variable which is assigned the value one if, and only if, the corpswoman is not assigned to either a skill-training program or an advanced education class after finishing basic education. Advanced education is also a zero-one variable. It is assigned the value one if, and only if, the corpswoman enters an advanced education class upon completion of her basic education program. Corpswomen who enter skill-training after basic education are assigned a zero for both of the above variables. All women who remain in the Center beyond basic education enter one of these three activities. Consequently, the coefficients of work task and advanced education in the regression analyses serve to measure the influence of these programs as compared with that of skill-training.

Unexcused Absences. Although absence may be explained by sickness, a medical or dental appointment, or Center business, some absence may be unexcused. A variable was constructed by dividing each woman's total hours of absences into her hours of unexcused absences. We expected this variable, which is as much a measure of attitudes as

program inputs, to be negatively related to the dependent variables.

Individual Characteristic Measures

Education. We experimented with two alternative functional forms of educational achievement: Grades of school completed and a dummy variable that equaled one for high school graduates and zero otherwise.

Schooling Stability. The number of schools a corpswoman has attended per year of school completed was used as a proxy for the number of environmental changes she has experienced in the past.

Labor Market Experience. We experimented with three different variables that reflected employment experience between leaving high school and entering the Job Corps: the number of weeks worked, the number of weeks worked per job held, and the number of weeks worked as a percentage of the total number of weeks between leaving high school and joining the Job Corps. All three were expected to be positively related to length of stay.

Socio-economic Status. Two crude proxies for socio-economic status (SES) were utilized: family income immediately before joining the Job Corps and parents' education. Family income is particularly rough because it depends on whether a woman was living alone, with a spouse, or with one or both parents before entering the Center. We expected both variables to be positively correlated with each woman's SES and that women of relatively high SES would show greater improvement during their stay at the Center.

Family Structure. Family structure was defined as a series of dummy variables indicating whether prior to entering the Center each corpswoman lived by herself, with a spouse, in a father-headed household, in a mother-headed household, or with a relative or guardian. Our prior expectation was that women who came from families that most closely approximated a middle class norm, that is, families headed by a father or spouse, would make the most progress while at the Center.

Age. Age entered the regressions linearly. In addition we experimented with dividing the sample into three discrete age groups: 17 years or less, 18 or 19 years old, and over 20. We expected age to be positively related to maturity and hence to the dependent variables.

Ethnicity. The sample was divided into three groups, Negroes, Mexican-Americans, and all others. This last group is almost entirely Caucasian with a few Orientals. These variables entered the regressions as dummies, with the "other" category serving as the base group. Both Negroes and Mexican-Americans tend to receive a poorer quality of education than whites and they would be expected to do more poorly for this reason. In addition, many Mexican-Americans suffer a language problem.

Place of Origin. The region of the country and the size of the place in which a corpswoman is raised help determine her attitudes, her ability to adjust to an environment such as that offered by the Job Corps, and the quality of schooling she will receive.

The corpswomen were divided into two sets of three categories defined by dummy variables. The first set separated women who were raised in California, those who were raised in the South Census Region, and those who were raised in all other areas. The second classification was based on whether women were raised in an urban area, a town, or a rural area.

We also experimented with possible interactions between region and race. Blacks, for example, were divided into two subcategories: those raised in the South and those raised in the rest of the country.

Self-Rating. On entering the Job Corps, corpswomen were asked how smart they believed themselves to be and how smart they thought other people thought they were. Women who thought they were at least average were assigned a one, and otherwise a zero; similarly, women who thought that others considered them at least average were assigned a one, and all other women were assigned a zero. A positive self-image was expected to be positively related to the proximate outcome measures.

Attitudes. The initial scores on the two Walther scales were used as measures of corpswomen's attitudes. Our hypothesis is that women who enter the Center with relatively positive attitudes will perform better with respect to our outcome measures than women whose initial attitudes are relatively negative.

Appendix B

ANALYSIS OF COGNITIVE SKILLS

In this appendix we report our findings on the influence of residency, other program services, and certain additional factors on a Corpswoman's achievement while she is at the Los Angeles Women's Job Corps Center. "Achievement" for our purposes refers to increases in reading and mathematical ability.

Two sets of tests, administered at several points in time, have been used to attempt to measure changes in reading and mathematical ability while at the Center. The Stanford Achievement Tests (SAT) were given to corpswomen three times during their stay at the Center: at entry to the Center, upon completion of the basic education sequence, and at termination from the program. These tests therefore provide measures of changes in reading and mathematical ability over two spans of time -- during basic education and during the entire stay at the Center. The Job Corps Test (JCT) are administered at entry to the Center and upon completion of the basic education sequence. Thus, they provide a measure of a woman's progress in reading and in mathematics while she is in basic education.

Table B-1 presents the mean initial grade level and the mean changes in these grade levels as measured by JCT and SAT.

Table B-1

INITIAL GRADE LEVEL AND CHANGES IN GRADE LEVEL WHILE AT THE CENTER

	Women for Whom End-of-Basic-Training Tests Available				Women for Whom Termination Tests Available	
	JCT		SAT		SAT Only	
Sample	Reading	Math	Reading	Math	Reading	Math
Initial Grade Level	5.84	5.13	6.03	5.73	5.95	5.65
Change in Grade Level	1.59	2.82	0.54	0.56	0.34	0.67
Number of Observations	354	383	232	234	169	168

There are three important conclusions to be drawn from this table:

1. Positive cognitive achievement appears to occur.*
2. The Job Corps Tests indicate a much larger gain than do the Stanford Achievement Tests.**
3. Most of the gain takes place during the basic education sequence.

These points are more fully discussed in Section III.

RELATIONSHIPS AMONG TEST SCORES***

Table B-2 presents a matrix of simple correlations among ten variables: the four initial test scores, the four changes in test scores during the basic training period, and the two changes in SAT scores between entry into the program and termination. The maximum number of observations is utilized. However, correlation matrixes based on common sets of observations (not shown here) display patterns very similar to those in Table B-2.

The strong relation between the initial test scores and the contrasting weak correlations between the test score changes are discussed in Section III of the main text and will not be further examined here. However, the correlations between the initial test scores and changes in test scores are also revealing. The initial JCT reading tests are found to be negatively related to the changes in the JCT reading test but positively related to changes in the mathematics test. The

---

*A test of statistical significance indicated that the mean improvements in test scores are all significantly greater than zero at the .001 level.

**The figures reported in Table B-1, however, are based on somewhat different samples. Not all the women were given every test, and we have reported means based on the maximum number of women for whom we have the required information. Nevertheless, the disparity between JCT and SAT is equally impressive when the comparison (not shown) is based on a common set of observations.

***The term "test scores" refers to the form in which we received the raw data from the Center. The term "grade levels," on the other hand, refers to test scores that have been converted to equivalent public school math or reading levels.

Table B-2

MATRIX OF CORRELATION COEFFICIENTS BETWEEN INITIAL TEST SCORES AND CHANGES IN TEST SCORES
(number of observations reported in parentheses)

	Initial Test Scores				Change Over Basic Education				Change From Entry to Termination	
	JCT		SAT		JCT		SAT		SAT Only	
	Reading	Math	Reading	Math	Reading	Math	Reading	Math	Reading	Math
Initial Test Scores										
JCT										
Reading	1.000[a] (361)									
Math	0.536[a] (360)	1.000[a] (386)								
SAT										
Reading	0.747[a] (357)	0.659[a] (382)	1.000[a] (473)							
Math	0.510[a] (358)	0.789[a] (383)	0.697[a] (472)	1.000[a] (473)						
Change Over Basic Education										
JCT										
Reading	-0.115[b] (354)	0.135[a] (354)	0.074 (350)	0.179[a] (351)	1.000[a] (354)					
Math	0.172[a] (357)	-0.158[a] (383)	0.073 (379)	0.021 (380)	0.296[a] (354)	1.000[a] (383)				
SAT										
Reading	0.039 (196)	0.103 (205)	-0.079 (232)	0.057 (232)	0.139 (194)[b]	0.031 (205)	1.000[a] (232)			
Math	0.022 (196)	0.010 (207)	0.168[a] (234)	-0.063 (234)	0.091 (194)	0.117 (207)	0.083 (231)	1.000[a] (234)		
Change from Entry to Termination										
SAT Only										
Reading	-0.232[a] (134)	0.003 (147)	-0.326[a] (169)	0.002 (169)	0.149[b] (131)	0.055 (147)	0.412[a] (110)	0.017 (111)	1.000[a] (169)	
Math	0.149[b] (133)	0.182[b] (146)	0.225[a] (168)	-0.053 (168)	0.197[b] (130)	0.013 (146)	0.122 (109)	0.694[a] (110)	0.127[b] (168)	1.000[a] (168)

[a]Statistically significant at the .01 level.

[b]Statistically significant at the .05 level.

correlations between the initial JCT math score and the two changes in JCT test scores follow the opposite sign pattern. Identical patterns exist between the initial SAT scores and changes in SAT scores.

We are inclined to believe that this relationship is a statistical phenomenon. Since test score changes are calculated by subtracting initial scores from later scores, any error in the initial test scores will result in a negative spurious bias in the measured correlations between initial scores and the change in scores. If the initial score is overstated, for example, the difference between the initial score and a later score will be understated. This explanation suggests that a more accurate measure of the relationship between initial ability and achievement while in the Job Corps is the correlation between the initial score on one test and the change in score on another test. All but one of these correlations is positive.*

REGRESSION RESULTS

In this section, a regression analysis is used to explain systematic differences in achievement, as measured by different rates of changes in test scores. We expect much of the variance in test score changes to remain unexplained. First, much of this variance is unsystematic or random (a particular corpswoman, for example, may be more disposed toward test taking on one particular test day than on another); and second, it is not possible for us to adequately measure every potential systematic determinant of differences in changes in test scores. To cite just one example, the variables listed in Appendix A do not adequately capture the quality of a woman's relationship with her parents.

---

*There are at least two other plausible explanations for these sign patterns. A behavioral explanation would suggest that either the Center or the women themselves tend to work hardest and most successfully on the skill area where each woman is weakest. Thus women who are strongest in mathematics make their greatest progress in reading, and vice versa. A more mechanical rationalization would imply that each incremental advancement on a given test is more difficult than the preceding. Women who start out highest on a particular test make their least measured progress on that test. They make a greater measured advancement on a test on which they started lower.

The regression results will be reported in three successive steps. In the first, changes in test scores are regressed on residency only; in the second, the remaining program measures are added to the regressions; and in the third, the individual characteristic variables are added. Because it is not clear whether the initial test scores are program variables,* individual characteristic variables, a correction for measurement error in the dependent variable, or some combination of all three, the regressions at each step will be reported with initial test scores alternatively excluded and included.

The first set of reported regressions indicates differences in achievement, as measured by changes in test scores, between residents and commuters without controlling for differences in the characteristics of the two populations or differences in the services each receives (other than those directly associated with residency itself); the third set does attempt to control for these differences. Both sets of results contain useful policy information.

The first predicts how residents will do compared with commuters, if existing differences in characteristics and services remain unchanged. This is a not entirely unrealistic possibility, for administrators are constrained as to how populations and services can be distributed between the two programs. Resident programs, for example, must necessarily be provided for many southern rural corpswomen; while for many urban Mexican-American women, the ability to reside at home may be a prerequisite to joining the Job Corps. Similarly, residents may have better attendance records than non-residents because program staff members can exert greater pressure upon them.

The third set of regressions is an attempt to predict whether a corpswoman, everything else being equal, is likely to make greater progress if she is placed in the resident program or in the commuter program. In essence, the contribution that the service of residency makes

---

*If Center staff systematically consider the initial test scores in determining the amounts or types of services a girl receives they should be viewed as program variables. Specifically, the initial test scores are then proxies for the services corpswomen receive.

toward increasing (or decreasing) a woman's reading and mathematical ability is netted out.

The middle set of regressions allows us to examine several program inputs simultaneously while not controlling for differences in individual characteristics. It is possible that the relation between a particular service and certain individual characteristics is such that the contribution the service has made to achievement, although important, will appear to be statistically insignificant.* If this happens, benefits associated with the service will be obscured. The second set of regressions provides a test of this possibility.

Before we present the regression results themselves, we should discuss the samples used. Three different samples are utilized: one for JCT and one for each of the two time periods covered by SAT.** All three sample sizes are limited by missing information, the major constraints being the program data (except for the residency variable) and the test scores, especially the SAT tests given at termination. The rather substantial differences in the size of the three samples is mainly attributable to the varying availability of different test scores.

Only one potential sampling bias was uncovered and this pertains only to test score changes from entry to termination. Taking the termination test depends, in part, on the good will of the trainee. A woman who simply leaves the Center without going through the standard termination procedure will not have taken a test. On the other hand, we also do not have termination test scores for women who were still at the Center when the data collection cutoff occurred. And these presumably tended to be corpswomen who felt they were benefiting from the Job Corps.

---

*See Samuel Bowles and Henry M. Levin, "The Determinants of Scholastic Achievement -- An Appraisal of Some Recent Evidence," Journal of Human Resources, Vol. III, No. 1, Winter 1968.

**Regressions that used the same sample, rather than three different samples, do not differ substantially from those reported here.

Residency Only

Table B-3 presents a set of regressions in which the only independent variables are residency and (in alternating cases) initial test scores. Of the six regressions that exclude test scores, only in regression number 3 does the residency coefficient differ significantly from zero. Although this coefficient is positive, four of the five insignificant coefficients are negative. The addition of initial scores to the regressions does not substantially affect the third regression, but the size of the coefficient in regression 5 increases in absolute value and becomes significant (negative).

Out of the 12 regressions reported in Table B-3, then, the coefficient for residency is significantly positive in two instances, significaty negative in one, and in nine cases does not significantly differ from zero. We do not here examine the magnitude of the influence of residency in those cases where it does significantly differ from zero -- an issue we discuss in the main text. However, we can tentatively conclude that the achievements of women who entered the commuter program were not systematically better or worse than those women in the resident program. This at least would seem to be true insofar as achievement can be measured by changes in test scores.

Other Program Variables

Table B-4 permits inferences as to the impact of some additional program variables. The addition of these variables does not substantially change the size or significance of the residency coefficients.

One of the most important results in Table B-4 is for hours of attendance in basic education. This variable is used in 12 of the 16 reported regressions. It is consistently positive, and in eight cases is statistically significant. The coefficient for hours of attendance in basic education can be used to estimate how many additional hours of attendance in basic education would be necessary on the average to increase grade levels by one additional grade. These estimates are presented in Table B-5. These figures may be given greater perspective

Table B-3

REGRESSIONS ON TEST SCORE CHANGES: EFFECTS OF RESIDENCY AND INITIAL TEST SCORES
(t-ratios in parentheses)

	Change Over Basic Education								Change from Entry to Termination			
	JCT				SAT				SAT Only			
	Reading		Math		Reading		Math		Reading		Math	
	1		2		3		4		5		6	
Residency	0.051	0.035	-0.066	-0.030	2.997[b]	3.028[b]	-2.06	-2.172	-2.269	-4.322[b]	-1.801	-0.899
	(0.17)	(0.14)	(0.20)	(0.10)	(1.69)	(1.71)	(1.22)	(1.35)	(0.85)	(1.83)	(0.63)	(0.32)
Initial reading score		-0.152[a]		0.317[a]		-0.079[b]		0.159[a]		-0.350[a]		0.132[b]
		(2.62)		(4.66)		(1.67)		(3.69)		(5.34)		(1.66)
Initial math score		0.167[a]		-0.271[a]		0.087		-0.156[a]		0.337[a]		-0.156[b]
		(3.51)		(4.87)		(1.59)		(3.14)		(4.43)		(1.70)
Constant	3.103	3.093	3.794	3.414	3.606	3.356	7.333	6.787	5.111	8.507	9.222	9.534
R^2	0.000	0.54	0.000	0.115	0.010	0.043	0.011	0.106	0.009	0.278	0.005	0.045
F	0.033	4.437	0.037	10.08	2.840	2.023	1.501	5.359	0.715	10.154	0.404	1.246
Standard error of estimate	2.172	2.122	2.635	2.489	10.469	10.423	9.895	9.474	12.179	10.523	12.863	12.759
Mean	3.13	3.13	3.76	3.76	5.18	5.18	6.25	6.25	4.07	4.07	8.40	8.40
Number of observations	236	236	236	236	139	139	139	139	83	83	83	83

[a]Statistically significant at the .01 level.

[b]Statistically significant at the .05 level.

Table B-4

REGRESSIONS ON TEST SCORE CHANGES: EFFECTS OF RESIDENCY, OTHER PROGRAM VARIABLES, AND INITIAL TEST SCORES
(t-ratios in parentheses)

	Changes Over Basic Education								Changes From Entry to Termination							
	JCT				SAT				SAT Only							
	Reading		Math		Reading		Math		Reading				Math			
	1		2		3		4		5				6			
Residency	-0.149	-0.187	-0.188	-0.161	3.061[b]	3.049[b]	-2.204	-2.297	-3.276	-4.646[b]	-1.775	-3.578	-2.125	-1.482	-2.260	-1.333
	(0.54)	(0.69)	(0.54)	(0.49)	(1.71)	(1.70)	(1.31)	(1.42)	(1.18)	(1.86)	(0.62)	(1.41)	(0.69)	(0.48)	(0.72)	(0.42)
Hours attendance, basic education	0.010[a]	0.011[a]	0.007[b]	0.008[a]	0.010	0.013	0.033[b]	0.030[b]	0.050[b]	0.032[c]			0.016	0.016		
	(4.11)	(4.51)	(2.27)	(2.46)	(0.51)	(0.65)	(1.85)	(1.72)	(1.94)	(1.28)			(0.57)	(0.82)		
Hours attendance, training after basic education									0.003	0.004			0.003	0.003		
									(0.61)	(0.79)			(0.48)	(0.44)		
Days in basic education											0.145	0.072			0.067	0.093
											(1.64)	(0.87)			(0.69)	(0.92)
Days in holding											-0.018	-0.039			-0.063	-0.057
											(0.24)	(0.59)			(0.77)	(0.70)
Days in advanced training											-0.018	0.006			-0.008	-0.02
											(0.44)	(0.14)			(0.17)	(0.45)
Days in skill training											0.020	0.012			0.001	0.004
											(0.98)	(0.68)			(0.00)	(0.17)
Unexcused absences	-0.532	-0.427	-0.823	-0.740	-2.556	-1.953	-0.560	-1.287	-11.324[b]	-7.687[b]	-11.513[b]	-8.495[b]	1.580	-0.132	0.645	-1.209
	(1.23)	(1.00)	(1.53)	(1.44)	(0.88)	(0.66)	(0.20)	(0.48)	(2.26)	(1.69)	(2.23)	(1.82)	(0.28)	(0.03)	(0.10)	(0.20)
Initial reading score		-0.123[b]		0.331[a]		-0.078		0.160[a]		-0.315[a]		-0.324[a]		0.150[b]		0.151[b]
		(2.19)		(4.87)		(1.64)		(3.73)		(4.72)		(4.78)		(1.80)		(1.80)
Initial math score		0.187[a]		-0.260[a]		00.086		-0.147[a]		0.317[a]		0.302[a]		-0.150		-0.172[b]
		(4.09)	(4.	(4.71)		(1.52)		(2.87)		(4.12)		(3.83)		(1.56)		(1.76)
Constant	1.230	0.679	2.721	2.081	2.635	1.443	0.400	0.226	-1.313	2.809	0.015	7.435	3.676	1.610	5.643	4.859
R^2	0.081	0.144	0.037	0.152	0.029	0.051	0.037	0.131	0.117	0.329	0.110	0.324	0.013	0.056	0.024	0.072
F	6.842	7.724	2.950	8.234	1.350	1.425	1.750	4.004								
Standard error of estimate	2.091	2.027	2.597	2.448	10.499	10.458	9.833	9.414	11.717	10.346	11.913	10.521	13.053	12.932	13.149	12.996
Mean	3.13	3.13	3.76	3.76	5.18	5.18	6.25	6.25	4.07	4.07	4.07	4.07	8.40	8.40	8.40	8.40
Number of observations	236	236	236	236	139	139	139	139	83	83	83	83	83	83	83	83

[a]Statistically significant at the .01 level.

[b]Statistically significant at the .05 level.

Table B-5

HOURS OF ADDITIONAL ATTENDANCE IN BASIC EDUCATION NEEDED TO INCREASE READING OR MATH ABILITY BY ONE GRADE LEVEL

	Result Based on the Basic Education Attendance Coefficient From Regression:					
	1	2	3	4	5	6
Initial test scores						
Excluded	200	190	1000	303	200	625
Included	182	167	769	333	313	400

by noting that the corpswomen in our regression samples averaged slightly greater than 200 hours of basic education. To add one additional grade level, hours of attendance in basic education would have to be at least doubled.

Note that the hours estimates associated with regressions that used differences in JCT scores as a dependent variable are considerably lower than those that used differences in SAT scores. In fact, four of the eight SAT estimates are based on regression coefficients that do not significantly differ from zero. This is consistent with the evidence from Table B-1 that indicated that the Center tends to teach toward the Job Corps Tests, so that much of what is learned is not reflected by scores on more general measures of ability, such as Stanford Achievement Tests.

The coefficient for hours of training after completion of basic education (see regressions 5 and 6) is consistently positive, but it is very small and is invariably associated with t-values of less than one. Thus, our evidence indicates that hours of training after basic education contribute little if anything to reading and mathematical ability. This result receives additional support in the regressions in which days rather than hours of training are used. Even days in advanced training do not appear to influence changes in test scores.

Unexcused absence, which, as noted above, is as much a measure of attutudes as program inputs, performs as expected. Its sign is negative,

except in regression 6 where the coefficient is insignificant. Even when negative, however, the coefficient is frequently insignificant.

Individual Characteristic Variables

Table B-6 reports regressions that incorporate some of the individual characteristic variables. Variables that neither approached statistical significance nor exerted substantial influence on the program variables were omitted from the final regressions. This was done both because it is good statistical practice and because it enabled us to increase our sample size. Among the variables that do not appear to influence changes in test scores are formal education, school stability, prior experience in the labor market, attitudes, place of origin, and self-rating upon entering the Job Corps.

The following variables do appear to be related to changes in test scores: age, socio-economic status as measured by family income, family structure, and ethnicity. These variables generally had the expected sign. Age, for example, appears to be positively related to achievement, although its coefficient is frequently insignificant. The coefficient for family income is usually both statistically significant and positive. Mexican-Americans make appreciatively less gain than women in the mostly Caucasian base group. The evidence on blacks is much weaker but points in the same direction. Women from father-headed households, women who lived by themselves, and women who lived with a spouse all appeared to perform about equally well. They were therefore grouped together as a base group and compared with the women who lived in a mother-headed household prior to entering the Job Corps. As measured by several of the test score changes, this latter group made greater than average progress while at the Center.

The principal reason for adding the individual characteristic variables (and for that matter the initial test scores) to the regressions is to control for non-program factors that are related to test score changes, so that the influence of program inputs can be isolated. In general, the addition of these variables does not substantially affect the coefficients for hours or days of training nor those for

Table B-6

REGRESSIONS ON TEST SCORE CHANGES: EFFECTS OF RESIDENCY, OTHER VARIABLES, INITIAL TEST SCORES, AND INDIVIDUAL CHARACTERISTICS
(t-ratios in parentheses)

	Changes Over Basic Education								Changes From Entry to Termination							
	JCT				SAT				SAT Only							
	Reading		Math		Reading		Math		Reading				Math			
	1		2		3		4		5				6			
Residency	-0.341	-0.409	-0.536	-0.397	2.001	1.755	-3.816[b]	-3.428	-3.065	-4.742[b]	-1.646	-3.952	-1.879	[illegible]	-1.805	-1.825
	(1.14)	(1.41)	(1.44)	(1.12)	(0.99)	(0.88)	(2.08)	(1.93)	(0.95)	(1.68)	(0.49)	(1.32)	(.057)	[illegible]	(0.53)	(0.52)
Hours attendance, basic education	0.010[a]	0.011[a]	0.008[a]	0.008[a]	0.006	0.010[b]	0.030[b]	0.026	0.049[b]	0.032			0.026	0.029		
	(4.03)	(4.49)	(2.49)	(2.48)	(0.33)	(0.52)	(1.69)	(1.45)	(1.82)	(1.28)			(0.95)	(0.96)		
Hours attendance, training after basic education									0.002	0.004			0.007	0.006		
									(0.40)	(0.71)			(1.17)	(1.07)		
Days in basic education											0.156	0.081			0.081	0.079
											(1.70)	(0.98)			(0.86)	(0.81)
Days in holding											-0.011	-0.055			-0.086	-0.096
											(0.14)	(0.75)			(1.04)	(1.12)
Days in advanced training											-0.021	0.021			0.008	-0.004
											(0.46)	(0.51)			(0.17)	(0.10)
Days in skill training											0.016	0.009			0.016	0.014
											(0.73)	(0.145)			(0.71)	(0.60)
Unexcused absences	-0.674	-0.576	-0.735	-0.705	-3.434	-2.801	-1.61	-2.311	-10.185[b]	-4.891	-10.507[b]	-5.908	3.762	2.372	2.771	1.077
	(1.50)	(1.36)	(1.32)	(1.32)	(1.14)	(0.91)	(0.59)	(0.85)	(1.90)	(1.02)	(1.92)	(1.21)	(0.69)	(0.41)	(0.50)	(0.20)
Initial reading score		-0.146[a]		0.297[a]		-0.850[b]		0.141[a]		-0.344[a]		-0.360[a]		0.077		0.067
		(2.51)		(4.8)		(1.66)		(3.13)		(4.84)		(4.90)		(0.92)		(0.78)
Initial math score		0.202[a]		-0.252[a]		0.095[b]		-0.135[a]		0.334[a]		0.322[a]		-0.090		-0.129[b]
		(4.48)		(4.58)		(1.66)		(2.67)		(4.16)		(3.86)		(0.95)		(1.32)
Age	0.030	0.048	0.215[b]	0.180	0.263	0.280	0.577	0.543	0.185	1.156	0.025	1.129	2.084[b]	1.842[b]	1.797[b]	1.407[c]
	(0.30)	(0.51)	(1.79)	(1.58)	(0.40)	(0.42)	(0.95)	(0.93)	(0.20)	(1.40)	(0.03)	(1.26)	(2.21)	(1.88)	(1.79)	(1.34)
Family income (in thousands)	0.16[a]	0.19[a]	0.13[c]	0.07	0.49	0.56	0.74[b]	0.63[b]	-0.49	-0.20	-0.58	-0.18	1.60[a]	1.52[b]	2.0[a]	1.60[a]
	(2.39)	(2.89)	(1.53)	(0.94)	(1.25)	(1.45)	(2.10)	(1.85)	(0.75)	(0.36)	(0.87)	(0.30)	(2.41)	(2.26)	(2.50)	(2.33)
Family headed by mother = 1	0.495[c]	0.624[b]	0.491	0.289	1.65	1.949	4.911[a]	4.478[a]	-2.49	-1.209	-2.59	-1.934	8.702[a]	8.336[a]	7.91[a]	7.378[b]
	(1.64)	(2.13)	(1.31)	(0.81)	(0.81)	(0.95)	(2.64)	(2.48)	(0.80)	(0.45)	(0.79)	(0.67)	(2.75)	(2.59)	(2.37)	(2.19)
Spanish = 1	-0.636	-0.682[b]	-1.394[a]	-1.161[b]	-3.569	-4.058	-5.465[b]	-4.274	2.610	0.543	2.99	-0.015	-4.326	-4.078	-4.710	-5.395
	(1.51)	(1.65)	(2.68)	(2.30)	(1.20)	(1.30)	(2.03)	(1.55)	(0.58)	(0.14)	(0.66)	(0.00)	(0.95)	(0.86)	(1.02)	(1.10)
Black = 1	0.213	0.146	-0.663	-0.339	0.789	0.063	-3.007	-1.316	-0.165	-2.467	-0.290	-3.270	-3.785	-3.521	-4.723	-5.395
	(0.62)	(0.41)	(1.55)	(0.79)	(0.33)	(0.00)	(1.37)	(0.54)	(0.04)	(0.71)	(0.10)	(0.88)	(1.01)	(0.87)	(1.22)	(1.32)
Constant	0.481	-0.376	-0.963	-0.788	-1.647	-3.085	-8.237	-8.091	-3.432	-16.98	0.364	-10.777	-43.278	-38.169	-33.726	-20.671
R^2	0.128	0.200	0.093	0.188	0.068	0.093	0.134	0.202	0.137	0.364	0.134	0.363	0.191	0.203	0.197	0.217
F	4.155	5.623	2.904	5.215	1.194	1.317	2.507	3.237	1.286	3.691	0.996	3.023	1.912	1.642	1.584	1.472

Table B-6 continued

	Changes Over Basic Education								Changes From Entry to Termination							
	JCT				SAT				SAT Only							
	Reading		Math		Reading		Math		Reading				Math			
	1		2		3		4		5				6			
Standard error of estimate	2.060	1.981	2.548	2.421	10.480	10.419	9.506	9.196	11.972	10.422	12.162	10.580	12.219	12.297	12.341	12.361
Mean	2.13	3.13	3.76	3.76	5.18	5.18	6.25	6.25	4.07	4.07	4.07	4.07	8.40	8.40	8.40	8.40
Number of observations	236	236	236	236	139	139	139	139	83	83	83	83	83	83	83	83

[a]Statistically significant at the .01 level.

[b]Statistically significant at the .05 level.

unexcused absences. However, they do markedly influence many of the coefficients for residency. In regressions 1 through 4, these coefficients become more negative and in regressions 1, 2, and 4 more significant.

Thus, with every important variable entered, some of the coefficients for residency are negative and significant, while the remainder apparently do not significantly differ from zero. From this we conclude that, everything else being equal, the effect of residency on achievement -- to the extent there is an effect -- is negative. As we note in the main text, however, it appears unlikely that the magnitude of residency's impact is sufficient to make much difference to a corpswoman once she has left the Center.

Appendix C

ANALYSIS OF ATTITUDE CHANGE

Table C-1 presents a matrix of simple correlations among the five measures of attitude change. Correlations between these measures and scores on the Walther tests given during the thirteenth week in the Center are also reported. The table supports the analysis of attitude change in Section III where we noted that there is virtually no relation between the subjective (self-perceived) and the objective (Walther Tests) measures of attitude change.

Table C-1 also indicates that the initial Walther test scores are only weakly related to self-perceived attitude changes, but rather strongly and negatively associated with changes in Walther scores over time. The strong negative relation may result because corpswomen who start out with the worst attitudes make the greatest progress. More likely it is caused by measurement errors. Since changes on the Walther tests are calculated by subtracting initial scores from final scores, any error in an initial score produces a spurious negative bias in the measured correlations between the initial score and the change in score. If the initial score is understated, for example, the difference between the initial score and the final score will be overstated.

Table C-1

MATRIX OF CORRELATION COEFFICIENTS BETWEEN MEASURES OF CHANGES IN ATTITUDES AND INITIAL SCORES ON WALTHER TESTS
(number of observations reported in parentheses)

	Self-Perceived Attitude Change			Change on Walther Tests		Initial Walther Test Scores	
	Self-Concept	Social Ability	View of Future	Self-Confidence	Optimism	Self-Confidence	Optimism
Self-perceived attitude change							
Self-concept	1.000[a] (175)						
Social ability	0.389[a] (169)	1.000[a] (169)					
View of the future	0.307[a] (141)	0.068 (138)	1.000[a] (141)				
Change on the Walther tests							
Self-confidence	0.001 (66)	0.004 (64)	-0.202[c] (53)	1.000[a] (67)			
Optimism	-0.008 (66)	-0.017 (64)	-0.012 (53)	0.486[a] (67)	1.000[a] (67)		
Initial Walther scores							
Self-confidence	0.066 (86)	0.018 (83)	0.116 (70)	-0.652[a] (67)	-0.214[b] (67)	1.000[a] (287)	
Optimism	0.170[c] (86)	0.101 (83)	0.123 (70)	-0.353[a] (67)	-0.726[a] (67)	0.384[a] (287)	1.000[a] (287)

[a]Statistically significant at the .01 level.

[b]Statistically significant at the .01 level.

[c]Statistically significant at the .10 level.

Appendix D

ANALYSIS OF LENGTH OF STAY

In this appendix we report the details of our regression analysis of the factors that affect the length of time corpswomen participate in the Center's programs. The analysis includes 340 corpswomen. An additional 161 women entered the Center during the evaluation period. However, the Center was unable to provide us with program data for them. We thus had no information as to the amount of each program service they received and were forced to delete them from the analysis.

We conducted numerous regression analyses for each of the overall and conditional length of stay variables, incorporating different combinations of independent variables. The independent variables we experimented with are described in Appendix A. Those independent variables that were never statistically significant themselves and that never affected the size or the significance of the coefficients of other variables were deleted. In using the procedure we strongly emphasized consistency. That is to say, we did not accept or reject hypotheses on the basis of a statistical significance test in any single regression but were instead primarily guided by whether a variable consistently had the same sign, was of the same order of magnitude, and was significant throughout the analysis. The particular regression results reported here are meant to be exemplary.

OVERALL LENGTH OF STAY

We begin with an analysis of overall length of stay. Here we are concerned with the factors related to the length of time a corpswoman remains in the Center. The dependent variables of interest here are Days (0, 90), Days (0, 120), Days (0, 180), and Days (0, 240). Regression results are provided in Table D-1.

Residency, the reader will recall, is defined as a zero-one variable indicating whether a woman received the aggregation of services afforded to resident corpswomen. The coefficient is negative and very significant in all four equations. This result was obtained in all regressions no matter what combination of demographic variables was used

Table D-1

REGRESSION COEFFICIENTS: OVERALL LENGTH OF STAY

Regression Number	Regression Coefficient (t-values)			
	1	2	3	4
Dependent Variable	Days (0, 90)	Days (0, 120)	Days (0, 180)	Days (0, 240)
Independent Variables				
Residency	-9.02[a] (4.60)	-14.82[a] (4.40)	-21.31[a] (3.24)	-22.56[b] (1.84)
High school graduate	3.54 (1.53)	6.98[b] (1.77)	15.42[b] (1.97)	41.34[a] (2.74)
Age	1.17[b] (1.77)	1.72 (1.53)	1.90 (0.83)	3.41 (0.76)
Black	2.56 (1.29)	6.66 (1.64)	11.84 (1.45)	34.51[b] (2.22)
Mexican-American	0.01 (0.00)	2.64 (0.54)	9.30 (0.94)	29.48 (1.62)
City	1.25 (0.63)	2.44 (0.73)	2.30 (0.34)	14.56 (1.10)
Family income (thousands of $)	0.25 (0.81)	0.19 (0.39)	-0.28 (0.30)	0.66 (0.00)
Two-parent household	4.99[b] (2.12)	7.70[b] (1.93)	4.26 (0.54)	12.92 (0.85)
Mother only household	4.26[b] (1.82)	5.41 (1.38)	4.61 (0.58)	8.61 (0.56)
Entry grade level SAT mathematics	0.09[b] (1.84)	0.11 (1.35)	0.30[b] (1.76)	0.53 (1.61)
Constant	56.57	67.10	96.62	53.22
R^2	.15	.17	.14	.22
F	4.60	4.32	2.92	3.79
Sample size	238	215	191	131
Mean of dependent variable	85.01	109.69	153.31	183.88
Standard error	13.85	21.97	41.17	63.51

[a]Coefficient is significantly different from zero at the .01 level.

[b]Coefficient is significantly different from zero at the .05 level.

to control for differences in the respective incoming populations. It is clear that, overall, residents tend to remain in the Center fewer days than otherwise similar commuters.

High school graduates also tend to remain in the Center for significantly longer periods of time than corpswomen who have not completed high school, other things being equal. We experimented with a series of regressions including the corpswomen's level of education (measured by grade completed). The coefficient of grade completed was always positive and always significant, but the goodness-of-fit measures were always lower than those obtained from otherwise similar regressions employing only the high school dummy variable. Finally, when both grade completed and the high school variables were included in a regression the latter variable was always significant and the former invariably insignificant. Our results indicate that the high school variable is not simply measuring the amount of schooling corpswomen have had; it also measures her willingness to stick to a task and see it through to completion.

Age proved to be consistently significant only in regressions focusing on the first three months after entry. It appears that older corpswomen are somewhat more likely to complete the first 90 days, but their behavior is not noticeably different from younger corpswomen, other things being equal, when longer time periods are examined.

Black corpswomen tend to remain in the Center significantly longer than either Mexican-American corpswomen or those included in the "other" ethnic group.

Place of origin as described in Appendix A was defined by a variety of measures. In no case did any of these variables turn out to be significant. There is no evidence then that either the size or region of the area where a corpswoman was raised or where she lived just prior to entrance is associated with her overall length of stay.

We were also concerned with the possibility that the shift in recruiting responsibility for the resident program* might have led to

*See Section II.

significant differences in length of stay. Members of an ethnic group who were raised, or lived just prior to entry, in different geographical areas may behave quite differently. Accordingly, we attempted to fit various interaction terms crossing the ethnicity and regional variables. For example, separate variables were defined for Negroes raised in the South and in the rest of the country. We found no evidence that women of a given ethnic background differed by geographic origin.

Family income and parent's education were two measures of socio-economic status we used. These variables were never significant predictors of length of stay.

Two-parent households and mother headed households produced corpswomen who were significantly less likely to drop out of the Center during the first three or four months after entry. These variables were not significant in regressions 3 and 4, covering longer time periods. Although we experimented with several additional variables describing a corpswoman's family structure, such as the size of her family, whether she had dependent children and whether her family was on welfare, none proved to be statistically significant.

Entry grade level as measured by the SAT mathematics test proved to be a better predictor of length of stay than any of the other three achievement tests corpswomen are given upon entry into the Center. Women who perform well on this test are significantly more likely to remain in the Center for lengthy periods of time.

CONDITIONAL LENGTH OF STAY

Again, we divided the overall time periods into a number of segments and examined the determinants of length of stay for each segment. The dependent variables of interest here are: Days (90, 120), Days (90, 180), Days (90, 240), Days (120, 180), and Days (180, 240). Exemplary regression results are presented in Table D-2. We examined the same variables in these regressions as were included in the regression results reported above. We deleted a large number of alternative variables that consistently proved to be insignificant.

Table D-2

REGRESSION COEFFICIENTS: CONDITIONAL LENGTH OF STAY

Regression Number	Regression Coefficient (t-values)				
	5	6	7	8	9
Dependent Variable	Days (90,120)	Days (90,180)	Days (90,240)	Days (120,180)	Days (180,240)
Independent Variables					
Residency	-0.14 (0.16)	0.02 (0.01)	17.20[b] (1.75)	0.14 (0.06)	-1.60 (0.46)
High school graduate		7.02 (1.58)	24.76[a] (2.51)	5.37[b] (2.08)	7.55[b] (2.16)
Age				-0.93 (1.15)	
Black	3.97[a] (4.11)	13.93[a] (2.86)	44.25[a] (4.11)		
Mexican-American	3.56[a] (2.86)	15.31[a] (2.50)	58.57[a] (4.22)	7.00[a] (2.44)	
City					7.01[b] (1.99)
Two-parent household	-1.73[b] (1.73)	-8.67[b] (2.14)	-26.91[b] (2.34)	-4.72[b] (2.06)	12.16[a] (2.93)
Mother only household	-1.15 (1.17)		-12.05 (1.04)		5.20 (1.25)
Advanced education		-6.64[b] (1.67)		-2.89 (1.28)	
Number of days in basic education	0.02 (1.14)				
Constant	25.35	70.78	83.53	72.26	40.50
R^2	.13	.13	.28	.08	.16
F	4.21	3.77	6.54	2.37	3.85
Sample size	181	164	109	146	81
Mean of dependent variable	28.51	77.35	117.07	55.03	53.39
Standard error	5.12	24.25	46.67	12.88	14.27

[a] Coefficient is significantly different from zero at the .01 level.

[b] Coefficient is significantly different from zero at the .05 level.

In general, the results of the conditional length of stay analysis were not as good as the results of the overall length of stay analysis. Coefficients were less often consistently significant and the "goodness-of-fit" measures for the regressions were generally lower. This is not surprising. The time periods investigated in the conditional analysis are shorter. In only two cases (regressions 6 and 7) do we examine periods greater than 60 days in length. A corpswoman who left the Center, say, on day 110 would be assigned the value 110 for the dependent variable Days (0, 180) and the value 20 for the dependent variable Days (90, 120). Suppose that she had left on day 117 instead. Then she would have been assigned 117 and 27 for Days (0, 180) and Days (90, 120), respectively. This minor change in her behavior, remaining in the Center one more week, would clearly have a much greater impact upon the part of the analysis that focuses on the latter dependent variable. Staying only one more week, however, is unlikely to be systematically related to any of the dependent variables.

We also note that our sample sizes are considerably smaller when we use the conditional dependent variables. Deviant behavior by any one corpswoman for reasons unassociated with any of the independent variables we have examined will thus have a relatively stronger impact on these results. To simplify the presentation of these results we always include residency but only include those other variables in the reported regressions that consistently had t-values greater than one.

Residency is insignificant in four of the regressions reported in Table D-2. Its significance level in regression 7 is unimpressive. There is little evidence that the services included under residency are related to length of stay beyond day 90, among women who stay at least through the first three months after entrance. Although the set of services termed residency is an important factor associated with resident corpswomen leaving the Center during the first 90 days, in the longer time periods the <u>overall</u> impact of residency is only significant because the longer periods include the first 90 days.

High school graduation is significant or almost significant in all regressions, except the fifth. We are inclined to discount that

result as an anomaly caused by the extremely short time period covered by the dependent variable.

Black and Mexican-American corpswomen appear to stay in the Center significantly longer than "other" corpswomen, at least through the first four or five months. There is little evidence, however, that blacks who have been in the Center for at least four months or Mexican-Americans who have been in the Center for at least six months tend to remain for longer periods thereafter than comparable "other" corpswomen.

The City variable proved to be a poor predictor of conditional length of stay. It was significant only in regressions in which the dependent variable was Days (180, 240). The sample is relatively small, and we believe that this result is an aberration. The other geographic variables never appeared to be significant.

The two-parent households variable is negative and significant in regressions 5, 6, and 7. The variable is significantly positive in regression 9. And, in the first two regressions of Table D-1, this variable was significantly positive. On inspecting the data we observed that women who come from two-parent households tend to leave the Center between three and four months after entering if they leave at all. Apparently the group of women from two-parent households consists of two distinct subgroups. One subgroup contains corpswomen who tend to depart from the Center soon after the end of basic education. The other contains girls who remain in the Center for lengthy periods of time.

Entry grade level, as measured by the SAT mathematics test, proved to be insignificant in all conditional length of stay analyses. Further, none of the other three entry achievement tests did any better. We also experimented with scores on the four achievement tests given at the end of basic education and with changes in the four test scores over the basic education period. None proved to be related to how long a corpswoman remained in the Center after day 90.

Number of days in basic education was also insignificant in all conditional length of stay regressions. In connection with the results

reported in the previous paragraph this implies that what happens to a corpswoman while she is in basic education has no discernible effect upon how long she remains in the Center after completing basic education.

Work task assignments following basic education had no significant effect upon subsequent length of stay.

Advanced education assignments have a significant impact on length of stay past basic education in only one of the five regressions. And there its significance level is not impressive. Thus, it does not appear that the assignment a corpswoman receives at the end of basic education exerts a very substantial impact on her subsequent length of stay.

Variables were introduced into the analysis to attempt to determine the extent to which a corpswoman's attitudes at the time she entered the Center influenced the length of time she spent there. Corpswomen's self-ratings of how intelligent they were, as compared with the average, were unrelated to length of stay. Their reasons for entering the Job Corps were also not related to length of stay.

We then examined the relationship between the scores a corpswoman obtained on the two objective attitudinal scales developed by Regis Walther. Including these variables in the analysis, however, proved to be difficult. We had obtained scores on these scales for less than half the corpswomen in our sample. Sample sizes are thus much reduced when attitudinal variables enter the analyses. Corpswomen filled out the attitudinal questionnaires approximately 13 weeks after entering the Center. We do not have comparable attitude measures for women who left the Center within their first 90 days. An analysis of overall length of stay incorporating the attitudinal measures would thus be hopelessly biased. We therefore restricted the introduction of these variables to the conditional length of stay analyses.

Table D-3 reports exemplary regression results. Again, we experimented with numerous specifications of the regression models, deleted those variables that were consistently insignificant, and re-ran the regressions on the remaining variables. Self-confidence was never

Table D-3

REGRESSION COEFFICIENTS: ATTITUDINAL EFFECTS

Regression Number	Regression Coefficient (t-values)				
Dependent Variable	10 Days (90,120)	11 Days (90,180)	12 Days (90,240)	13 Days (120,180)	14 Days (180,240)
Independent Variables					
Residency	-1.31 (1.63)	-4.45 (1.05)	14.00 (1.47)	-0.49 (0.22)	1.17 (0.31)
High school graduate		7.71 (1.75)	22.02[a] (2.41)	5.35[b] (2.07)	8.80[b] (2.31)
Black	2.95[a] (3.10)	10.01[b] (2.06)	49.98[a] (4.78)		
Mexican-American	2.31[b] (1.85)	12.99[b] (2.08)	73.45[a] (5.21)	7.77[a] (2.59)	8.22 (1.67)
City					9.16[b] (2.25)
Family income (thousands of $)		-0.68 (1.26)		-0.90[b] (1.97)	
Two-parent household		-4.36 (1.04)	-29.93[a] (2.69)		8.68[b] (2.13)
Mother only household			-24.00[b] (2.16)		
Entry grade level SAT mathematics					-0.13 (1.34)
Work task				5.52 (1.22)	
Advanced Education	-0.86 (1.08)	-6.39 (1.60)			
Number of days in basic education	0.02 (1.22)				
Optimism	0.09 (1.02)	0.80[b] (1.93)	2.08[b] (2.22)	0.67[a] (2.79)	0.59 (1.30)
Constant	23.32		18.16	45.83	24.66
R^2	.12	.16	.41	.14	.24
F	3.30	3.02	7.61	2.78	2.79
Sample size	153	136	85	125	69
Mean of dependent variable	28.84	79.73	123.78	55.52	52.84
Standard error	4.71	21.90	35.20	11.99	14.31

[a]Coefficient is significantly different from zero at the .01 level.
[b]Coefficient is significantly different from zero at the .05 level.

significantly related to length of stay. Optimism, however, was significant and positively related to length of stay in regressions on three of our five conditional dependent variables. Since the variable was not significant in regressions 10 and 14 it appears that, other things being equal, more optimistic girls leave at a lower rate than less optimistic girls between days 120 and 180.