Impact Evaluation of PowerCorpsPHL: *Final Report*

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Executive Summary

Overview

PowerCorpsPHL is an AmeriCorps program launched in September 2013 in partnership with the City of Philadelphia, EducationWorks, and the Philadelphia Youth Network. The program is designed to help disconnected youth and young adults (ages 18-30 years old), including those with prior involvement in the criminal justice system, to improve their vocational skills and access in-demand environment-related jobs. The program includes a Foundations phase designed to improve participants' basic job-readiness and a subsequent Career Training phase designed to provide participants with on-the-job-training in selected career tracks. In both phases, participants are paid a stipend – during the study period, Foundations participants were paid the equivalent of $10-12 per hour for 30-36 hours of work per week and Career Training participants were paid the equivalent of $11-13 per hour for 36-40 hours of work per week.

In 2020, EducationWorks hired Actus Policy Research to evaluate the effectiveness of the PowerCorpsPHL program, focusing on participants who enrolled in the program from January 2018 through March 2021. The evaluation includes: (1) an outcomes assessment study to examine program participation and program-related outcomes; and (2) a quasi-experimental impact study to estimate program impacts on participant labor market outcomes.

Outcomes Assessment Study

Research questions. The objective of the outcomes assessment study is to answer the following research questions for participants who enrolled in the program from January 2018 through March 2021:

1) What were the program participation outcomes of PowerCorpsPHL participants during this period (Foundations completion, Career Training enrollment and completion, credentials earned)?
2) How is program participation related to participant engagement with the criminal justice system?
3) What are the employment outcomes (employment, job retention, earnings) following

program entry?

4) How did the program affect participant attitudes or behaviors related to civil engagement, community service, environmental stewardship, and personal responsibility?

Data sources. The study relies primarily on PowerCorpsPHL program data provided by EducationWorks which report individual characteristics for all study participants at the time of program entry. These data are merged with Unified Judicial System of Pennsylvania data that provide information on participant involvement with the criminal justice system within 12 months of program entry. In addition, web surveys were used to gather information on participant experiences with the program.

Results. During the study period, the program enrolled 362 participants, ages 18-28 years old, the majority of whom were male (73.5%) and black (90.6%). More than a third of participants (34.3%) had a criminal record prior to program enrollment. Program data indicate that the program achieved high completion rates. About 204 (56.4%) of participants completed the Foundations phase and 137 of these (37.9% of the total) enrolled in the Career Training phase. About one in every five participants completed both the Foundations and Career Training phase of the program. Importantly, 63.8% of participants obtained an OSHA certification or other industry-recognized credentials as a result of program participation. Regression analysis indicate that program completion rates and certificate attainment were higher among Hispanic participants and among young adults (ages 25-28 years old); certification attainment was relatively lower for participants with a criminal record.

Analysis of criminal justice outcomes after program entry indicate that only 6.4% of participants had a court case for offenses committed within 12 months of program entry and only about 3.3% were convicted for such offenses. Among participants with a criminal record, 13.7% had a court case (compared with 2.5% of those with no criminal record) and 7.3% were convicted (compared with 1.3% of those with no criminal record). These figures suggest low recidivism

among participants with a criminal record and that, more generally, the program may be associated with reduction in criminal activity among participants.

Survey response rates were very low but yielded positive views about the program. Participants gave positive reviews about the program and its staff and felt that the program helped them improve their preparedness and chances of obtaining better-paying jobs.

Quasi-experimental Impact Study

Research questions. The objective of the quasi-experimental impact study is to estimate the impact of the PowerCorpsPHL program on the labor market outcomes of participants. In particular, the study addresses the following questions:

1) Did the program improve participant employment rates following program entry?
2) Did the program improve participant employment retention rates following program entry?
3) Did the program increase participant earnings following program entry?

Data sources. The study relies on Pennsylvania administrative data provided by the Pennsylvania Department of Labor and Industry, as follows:

- Employment Service (ES) data, which provide information on the characteristics of non-participants who were residing in the same areas as did program participants, had similar characteristics as did program participants, and who sought state employment and training services during the same period.
- UI wage records, which provide quarterly earnings information for both program participants and for non-participants included in the ES sample.

Due to concerns about the confidentiality of the data, the Pennsylvania Department of Labor and Industry provided these data for the 328 black PowerCorpsPHL participants (which comprise 90.6% of all 362 participants during the study period) and for 5,323 non-participants

who were black, 18-28 years old, sought state services during the same period, and were residing in the same areas as did program participants.

These data are used to measure individual labor market outcomes for at least 5 and up to 16 quarters after program entry; the follow-up period varies based on the timing of program enrollment. In particular, using these data, the study estimates program impacts on quarterly employment rates for 5 to 16 quarters after program entry, job retention outcomes for up to 8 quarters after program entry, and earnings for 5 to 16 quarters after program entry.

Methodology. The study uses a quasi-experimental approach which relies on matching methods to identify a matched comparison group on Pennsylvania administrative data provided by the Pennsylvania Department of Labor, as follows:

- *Step 1: Merge data.* Merge PowerCorpsPHL program data with ES data. The merged data include 328 black PowerCorpsPHL participants (treatment group) and 5,323 non-participants (comparison group).
- *Step 2: Produce propensity score.* Estimate a logit model that predicts the likelihood that the individual was in the treatment group based on gender, exact age, cohort of program entry, area of residence, and prior employment rates and earnings in the eight quarters prior to program enrollment. Use results to produce the propensity score which measures the likelihood of program participation based on available characteristics.
- *Step 3: Use propensity score to construct sample weight*. Each comparison case is weighted by the odds ratio of the propensity score, so that the matched comparison group has the same distribution of all variables included in the model (gender, age, cohort of entry, area of residence, and prior employment outcomes) as the treatment sample.
- *Step 4: Compare treatment and matched comparison sample.* Use statistical tests to confirm that the treatment sample has the same characteristics distribution as the matched comparison sample.

This method yielded a matched comparison group consisting of non-participants who enrolled in state services during the same period, had similar gender, age, and race distribution, had similar prior employment outcomes, and resided in the same areas as did PowerCorpsPHL participants. Under the conditional independence assumption, which stipulates that the outcomes of non-participants who are observationally similar to program participants represent the outcomes of participants in the absence of the program, the study uses differences in post-program enrollment outcomes between the treatment and the matched comparison group to estimate program effects.

Results. The program led to positive and significant impacts on employment rates in the first six quarters after program entry. Effects were higher in quarters 1-2 after program entry, the period when most participants received paid training from the program. In particular, the program increased the likelihood of employment in quarter 1 by 29.6 percentage points (a 51% increase compared with the matched comparison group) and in quarter 2 by 23.6 percentage points (a 40% increase). Effects declined but remained positive and significant in quarters 3-6 after entry (when the paid training period had ended for most participants), in the 11% to 20% range. Effects on employment remained positive from quarter 7 through quarter 16 but for the most part lacked statistical significance.

The program also had significant effects on job retention. In particular, the program increased the likelihood that participants would find employment in quarter 1 after entry and remain employed through at least quarter 4 by 25.2 percentage points, a 75% increase relative to the matched comparison group mean. Similarly, the program increased job retention in quarters 1 through 8 after program entry by 11.6 percentage points, a 60% increase. Effects on job retention were significant when using measures starting in quarter 3 (after the paid training ended for most participants); the program increased job retention by 35% in quarters 3-6 after entry and by 16% in the quarters 3-8 after entry. The study also finds that, on average, the program increased the length of employment for participants in the first 8 quarters after program entry by almost a full quarter (a 20% impact).

Finally, the study shows that the program had positive and significant impacts on total earnings in quarters 1-4 after program entry, the period that includes the paid training provided by the program. During this period, the program increased participant earnings by $1,280, a 13% effect compared with the mean earnings for the comparison group. Effects on total earnings in subsequent periods lacked statistical significance.

Summary of Findings

Overall, the results of this evaluation indicate that the PowerCorpsPHL program was successful in serving disadvantaged youth and young adults in the Philadelphia area. The program achieved high completion and retention rates, and guided nearly two thirds of participants to obtain professional certifications. The results of the quasi-experimental impact study indicate that the paid training provided by the program increased participant employment upon entry, which in turn helped participants establish a consistent attachment to the workforce and achieve higher short-term earnings.

1. Introduction

PowerCorpsPHL, an AmeriCorps program launched in September 2013, is designed to support the City of Philadelphia's environmental stewardship initiatives, youth violence prevention and workforce development priorities. Operated by EducationWorks, PowerCorpsPHL's objective is to help disconnected youth (18-24 years old) and young adults (ages 25-30 years old), including those reentering the labor market following incarceration, improve their vocational skills and access in-demand environment-related jobs. The program consists of two phases. First is a four-month Foundations phase when participants obtain training designed to improve their basic job-readiness skills. During this phase, participants receive a $10-12 per hour stipend for 30-36 hours per week. Those who complete the Foundations phase can then enroll in the Career Training phase (6-12 months) where they receive on-the-job training that prepares them for in-demand jobs in their selected track. Participants are paid $11-13 per hour for 36-40 hours of work per week.[1]

In 2020, EducationWorks contracted with Actus Policy Research to evaluate the effectiveness of the PowerCorpsPHL program to assist participants who enrolled in the program from January 2018 through March 2021. The evaluation includes two components:

- An *outcomes assessment study* to examine the characteristics and program-related outcomes of program participants during the study period.
- A *quasi-experimental impact study* to estimate the effects of the PowerCorpsPHL program on participant labor market outcomes.

The outcomes assessment study relies on three data sources: (1) PowerCorpsPHL program data, that provide information on the characteristics of program participants during the study period; (2) Criminal Justice System data that provide information on court cases and convictions of program participants within 12 months of program entry; and (3) web surveys that asked

[1] From January 2018 to August 2019, the stipend was the equivalent of $10 per hour for Foundations and $11 per hour for Career Training. From September 2019 to December 2021, the stipend increased to the equivalent of $12 per hour for Foundations and $13 per hour for Career Training. Starting in January 2022, the stipend increased to the equivalent of $14 per hour for both phases.

participants to provide information about their experiences with the program and following participation. Using program data, the outcomes study examines the characteristics of program participants, including gender, age, race, and prior involvement with the criminal justice system. The same data is used to examine program-related outcomes, including Foundations completion, Career Training enrollment, and Career Training completion rates, as well as to identify industry-recognized credentials earned by participants as a result of program participation.

Merging program data with Criminal Justice System data, the study also examines participant involvement with the criminal justice system, namely: (1) if participants had a court case for offenses committed within 12 months of program entry (that is either active or led to a conviction);[2] and (2) if participants had a conviction for offenses committed within 12 months after program entry. Finally, data from participant surveys are used to assess participant experiences and perceptions about the program at and following program exit.

The quasi-experimental impact study relies on data provided by the Pennsylvania Department of Labor and Industry to match program participants with non-participants who sought state employment and training services during the study period and who had similar observed characteristics and prior employment outcomes as did program participants. Relying on the matching results, the study estimates program impacts by comparing mean employment outcomes between PowerCorpsPHL participants (treatment group) and the matched comparison group. Our analyses consider program impacts on several outcomes of interest, measured quarterly for at least 5 and up to 16 quarters after program entry (depending on the timing of program entry), including employment rates, job retention rates, and earnings.

This report presents the final evaluation findings and is organized as follows. Section 2 provides an overview of the PowerCorpsPHL program and describes the program's Theory of Change.

[2] These data do not include cases that came before the court but did not result in a conviction or guilty plea (e.g., cases resulting in a not guilty verdict or where charges were withdrawn).

Section 3 presents the results of the outcomes assessment study based on available data. Section 4 presents the interim findings of the quasi-experimental impact study. Finally, Section 5 summarizes the study findings.

2. Background

2.1. The PowerCorpsPHL Program

PowerCorpsPHL has developed an approach to environmental stewardship for Philadelphia that uniquely leverages the underutilized talents of its disconnected youth (18-24 years old) and young adults (25-30 years old), including those entering employment following incarceration. PowerCorpsPHL uses a community service-based approach to provide career-connected education and paid work experiences for 4 to 24 months. Designed to help participants improve their vocational skills for occupations in energy, infrastructure, and utility industries; obtain sustainable jobs with living wages; and achieve economic self-sufficiency, the program's core service delivery components are implemented in the two phases.

Phase I: Foundations. In this phase, the program provides individuals with a high-support environment to strengthen their job-readiness skills. Participants explore career options in the energy, infrastructure, and utility industries through four months of classroom-based professional development and "on-the-job" service and training via crew-based AmeriCorps service tied to the City of Philadelphia's environmental objectives, including improved stormwater management, increased tree canopy, and revitalized public land. This phase is roughly 70% work-based training in the form of service projects and 30% classroom and social-emotional support.

The program's delivery of supportive services to participants includes robust court navigation and advocacy, career counseling, vetted employment opportunities, technical skills training aligned to specific industries, and academic support in postsecondary education. During this phase, all participants are connected with three knowledgeable, caring adults assigned to them when they enroll in the Foundations phase of the program:

- A *crew leader* who serves as their daily point of contact, work site supervisor, coach, and mentor.
- A *supportive services advisor* who does weekly one-on-one counseling to help participants overcome barriers to employment. In particular, counseling is designed to help participants deal with mental health or trauma-related challenges or navigate court and post-release requirements. Counseling services are available for participants five days a week, including both traditional, weekly appointments and shorter check-ins. Participants receive intensive case management to support basic needs stability and connection to necessary resources such as childcare, health care, recovery counseling, housing, food, and clothing.
- A *workforce development advisor* who provides career counseling, weekly check-ins, and workplace skills workshops. PowerCorpsPHL's career counseling facilitates career exploration, career action plans, and work-readiness coaching and training to reduce barriers to employment success. In addition, PowerCorpsPHL is actively building, maintaining, and curating a network of quality employment opportunities for its graduates to support high quality outcomes.

During the period studied, Foundations participants were paid via an AmeriCorps stipend at the equivalent of $10-12 per hour for 30-36 hours per week (varies cohort to cohort). This stipend serves to help participants cover their basic needs while they participate in the program and encourage program participation.

Phase II: Career Training. Participants completing the Foundations phase may enter immersive, career training that prepares them for in-demand positions that serve their career interests in the energy, infrastructure, and utility industries. The length of training can range between 6 to 12 months, depending on the training track chosen as shown below. Students may be eligible to enroll in more than one training track, potentially extending their enrollment in the program to for up to 24 months. With the exception of the solar academy, all training programs involve 90% work-based training and 10% classroom or other training.

- Fellowships. Involves individual placements at external organizations. These are typically 6-months in duration, but some are 9- and 12-months. Pathway-wise, this training is very youth-driven and varies based on youth interest. This training tends to be in education and youth work, community outreach, urban farming, or other community-based careers and is supported by PowerCorpsPHL with additional training, coaching, and subsidized pay.
- Academies. The training academies refer to sector-driven and employer-driven tracks including: 1) Green Stormwater Infrastructure, 2) Urban Forestry, 3) Electrical and Solar, and 4) Skilled Trades. PowerCorpsPHL co-designs these training tracks with employer and industry partners, focusing on technical training. These also include 10% other training and support.
- Assistant Crew Leader. Youth work in leadership positions with participants in Phase I for a duration of 12-months.

While transitioning to more traditional worksite supervisors during the Career Training phase of the program, participants maintain supports from Supportive Services and Workforce Development.[3] During the period studied, participants were paid a stipend at the equivalent of $11-13 per hour for 36-40 hours of work per week.

2.2. Theory of Change

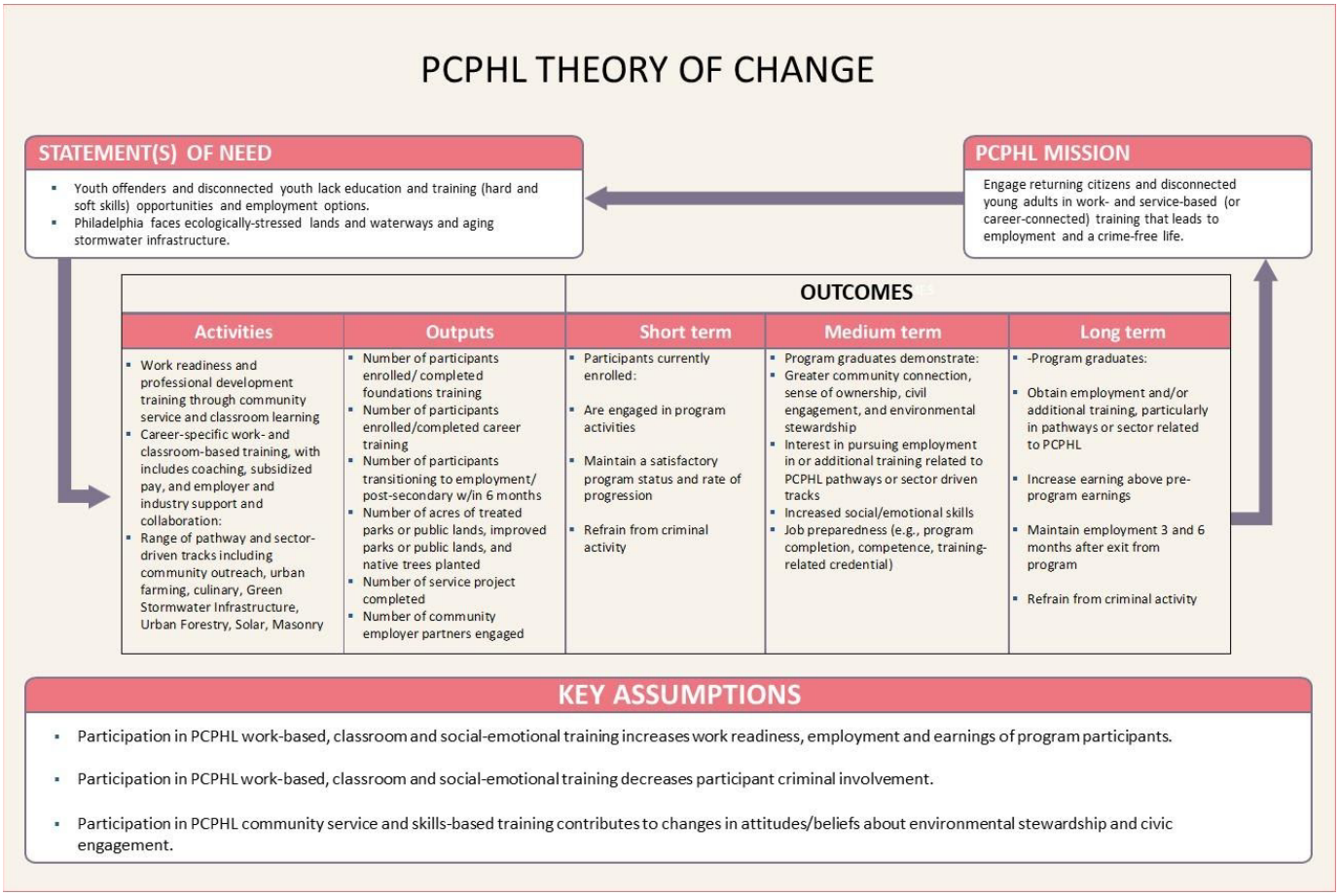
As shown in Figure 1, the PowerCorpsPHL Theory of Change (TOC) explains the changes the program hopes to bring about (outcomes) and what is being done to accomplish these outcomes (activities). Importantly, the TOC also identifies the assumptions associated with these activities, forms a basis for claims around attribution of outcomes, determines what changes need to be measured, and identifies/hypothesizes a rationale for causality.

[3] Alumni receive structured supports for one year after exit and as needed thereafter.

The PowerCorpsPHL TOC assumes the above concerns can be simultaneously and effectively addressed by engaging previously disconnected young adults in AmeriCorps service and prepare them for career-track employment and post-secondary success in green industries. Important to the proposed evaluation, our model assumes the following:

- Participation in the PowerCorpsPHL work-based, classroom and social-emotional training increases work readiness, employment, and earnings of program participants.
- Participation in the PowerCorpsPHL work-based, classroom, and social-emotional training decreases criminal involvement of program participants.
- Participation in the PowerCorpsPHL community service and skills-based training contributes to positive changes in attitudes/beliefs about environmental stewardship and civic engagement.

Figure 1: PowerCorpsPHL Theory of Change



In addition to the above, the PowerCorpsPHL program provides intensive case management and wraparound supports (while enrolled in the program and up to one year after exit). This includes providing participants with daily contact, mentorship, services to troubleshoot barriers to employment, and career guidance and employer support. Participants are paid a wage while enrolled in the program, which is expected to help them cover some of their basic needs and improve program retention.

3. Outcomes Assessment Study

3.1. Research Questions

The outcomes assessment component of the evaluation examines program participation and

program-related outcomes of participants who entered the program from January 2018 through March 2021. Key research questions to be addressed include:

1. What were the program participation outcomes of PowerCorpsPHL participants (Foundations completion, enrollment in Career Training track, completion of Career Training track, and credentials earned)?
2. How is program participation related to participant engagement with the criminal justice system following program entry?
3. What were the employment outcomes of participants following program entry (employment, job retention, earnings)?
4. How did the program affect participants' attitudes or behaviors related to such things as civic engagement, community service, environmental stewardship, and personal responsibility?

3.2. Data Sources

The study sample for the outcomes study includes all individuals who entered the Foundations phase of the program for the first time during the period January 2018 through March 2021. Using program records, Table 1 summarizes the number of participants that entered the Foundations phase of the program in the seven participant cohorts covered by our study period.[4] As seen in Table 1, 362 participants enrolled for the first time the Foundations phase of the program in these seven cohorts. The number of participants varied across cohorts with relatively lower intake in the pandemic-affected cohorts 14-16 compared to earlier cohorts. The Covid-19 pandemic also altered service delivery, with delivery shifting from in-person to virtual or to a combination of formats in the latter three cohorts.

[4] From January 2018 through March 2021, the program accepted seven cohorts of participants (cohorts 10-16). Participants who entered the program in cohorts 1-9, that precede our study period, are not included in the analysis.

Table 1: PowerCorpsPHL Program Cohorts

Cohort	Phase 1: Foundations		Learning/Training Format	
	Start Date	# Participants	In-person	Virtual
10	3/5/2018	81	X	
11	9/4/2018	73	X	
12	2/25/2019	47	X	
13	9/9/2019	66	X	
14	3/2/2020	44		X
15	8/3/2020	17	X	X
16	3/1/2021	34	X	X
	Total	362		

To examine program participation and program-related outcomes for these participants, we rely on three data sources, as described below:

- ***PowerCorpsPHL program data.*** These data, originally provided by EducationWorks in September 2021 and updated in November 2022, report individual socioeconomic characteristics (gender, race, and age), area of residence, and information on criminal history for all 362 participants in the study sample. The same data provide personal identifiers (name, date of birth, address, and contact information) that are used to merge with other data sources. The data also provide information on program participation, including whether participants completed the Foundations phase of the program. The data also report enrollments in a Career Training phase, completion of Career Training, and credentials earned.
- ***Unified Judicial System of Pennsylvania data*.** These data were collected from the Pennsylvania Administrative Office of the Courts and include all cases resulting in a conviction or plea agreement between January 2018 and September 2022 and cases during the same time period that were still pending as of August 2022. Using individual identifiers common to both the PowerCorpsPHL program data and the Judicial data (name and date of birth), we identified which program participants had criminal justice involvement resulting in a court conviction or plea agreement within 12 months after enrolling in the PowerCorpsPHL program.

- ***Participant web-based surveys.*** Results from an *exit survey* provide information on participants' program satisfaction, perceived value of program components, and employment status at exit. In addition, the survey provides information related to participants' self-efficacy, and attitudes and beliefs related to job readiness, personal responsibility, community engagement, and environmental stewardship. The survey was administered to all study participants who both entered the program in cohorts 10-16 *and* who exited the program between September 2020 and October 2022.

  Results from a *follow-up survey* provide information on longer term outcomes related to employment, subsequent education and training, credential attainment, and criminal justice system involvement. This survey was directed to all study participants who both entered the program for the first time in cohorts 10-16 *and* who exited the program for the first time at least six months prior to survey implementation in November 2022.

3.3. Participant Characteristics

Table 2 summarizes the characteristics of program participants based on PowerCorpsPHL program data. Nearly three quarters of participants were male and about a quarter were female. Black youth dominated the participant population-nine in every ten participants were black, about 5% were Hispanics, and the remaining belonged in other race groups. About 72.4% of participants were youth (either 18-21 years old or 22-24 years old) and 27.6% were young adults (25-28 years old). Note that as a requirement for entry into the PowerCorpsPHL program, all participants had a high school diploma or had completed their GED prior to program enrollment.

Program data also show that 11.1% of participants had obtained OSHA certifications prior to entering the program. Finally, more than a third (34.3%) had a criminal record prior to entering the program. Overall, these figures indicate that the program predominantly served black youth and young adults, the majority of whom were male, including many who had a history with the criminal justice system.

Table 2: Participants Characteristics at Program Entry

	Total
Number of Participants	**362**
Gender	
Male	266 (73.5%)
Female	96 (26.5%)
Race/ethnicity	
Black	328 (90.6%)
Hispanic	18 (5.0%)
White	5 (1.4%)
Native American	3 (0.8%)
Other	4 (1.1%)
Missing	4 (1.1%)
Age	
18-21 years old	145 (40.1%)
22-24 years old	116 (32.4%)
25-28 years old	100 (27.6%)
Missing	1 (0.3%)
OSHA Certifications at entry	
OSHA-10	40 (11.1%)
OSHA-30	6 (1.7%)
Had Criminal Record	124 (34.3%)

Note: Number of individuals (with sample proportion in parentheses) who enrolled in the Foundations program for the first time.
Source: Tabulations of PowerCorpsPHL Data.

3.4. Program-Related Outcomes

3.4.1. Program Enrollment and Completion Outcomes

Table 3 shows that, 204 of the 362 participants (about 56.4%) completed the Foundations phase of the program. Separate analysis shows that 143 of the 362 participants (39.5%) completed the Foundations phase of the program in their first cohort of enrollment while 24 (6.6%) re-enrolled and completed Foundations at a later cohort. As seen in Table 3, 137 of the

362 participants (about 37.9%) completed the Foundations phase of the program and subsequently enrolled in the Career Training phase. Over a half of these completed the Career Training phase; overall, about in one in every five participants (19.6%) completed both the Foundations and the Career Training phase of the program.

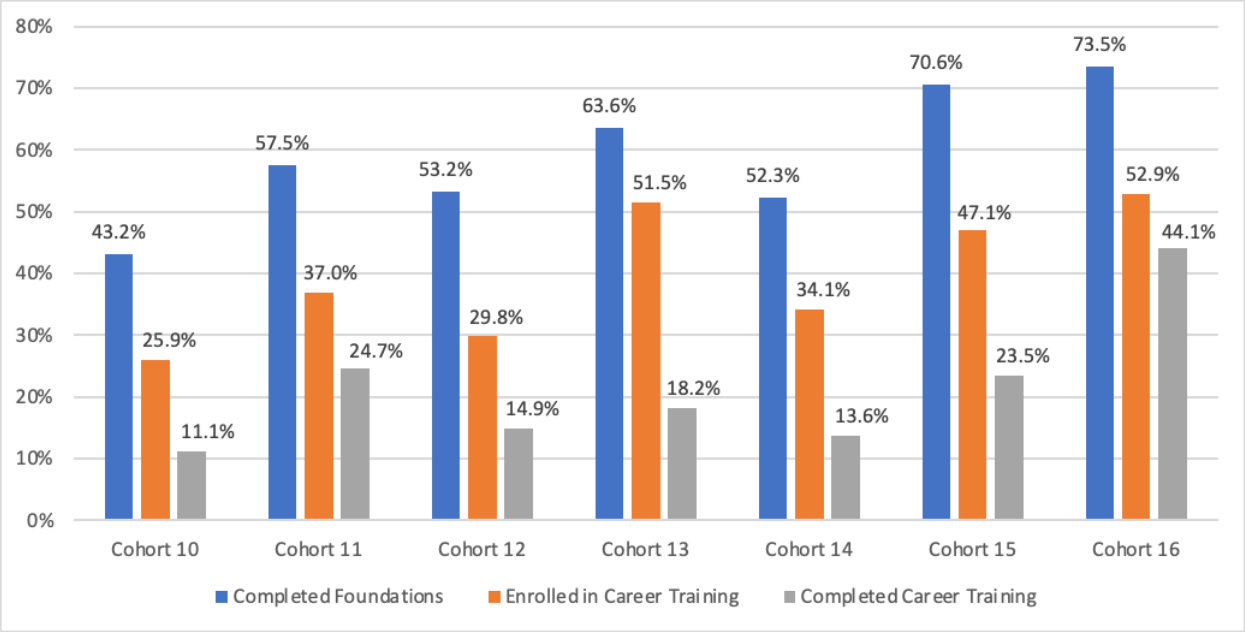
Table 3: Program Enrollment and Completion

	Total
Completed Foundations, all cohorts	204 (56.4%)
Enrolled in Career Training, all cohorts	137 (37.9%)
Completed Career Training, all cohorts	71 (19.6%)

Note: Number of participants with sample proportion in parentheses. Sample size = 362.

Figure 2 compares program enrollment and completion outcomes by cohort of entry. Results indicate that Foundation completion rates improved with each cohort. About 43.2% of cohort 10 participants completed Foundations, compared with 57.5% in cohort 11 and 53.2% in cohort 12. With the exception of the Covid-19 affected cohort 14, Foundations completion rates were higher in subsequent cohorts, ranging from 63.6% (cohort 13) to 73.5% (cohort 16). The same figure shows that enrollment in Career Training after completing Foundations increased over time (with the exception of the pandemic-affected cohort 14). It is also evident that the majority of participants who enrolled in Career Training completed the training before exiting the program; the highest Career Training completion rates are observed in cohort 16.

Figure 2: Program Enrollment and Completion Outcomes by Cohort of Entry



Note: Sample proportions.

3.4.2. Industry-Recognized Certifications

Table 4 presents the number and types of industry-recognized certifications obtained by program participants. Nearly two-thirds of participants (63.8%) obtained at least one certification; about one third obtained exactly one certification and about three in every ten obtained two or more certifications. About 56.4% of participants obtained the OSHA-10 certification and 19.1% participants obtained the OSHA-30 certification.

Table 4 also shows that nearly one in every four participants obtained other industry-recognized certifications. Coincidentally, exactly the same number of participants received the Leave no Trace, PHS Tree Tenders, and Roots of Success certifications.[5] Finally, note that 73 participants (about 20.2% of the total) obtained both an OSHA certification and at least one other type of industry-recognized certification.

[5] Separate calculations indicate some overlap across these three certifications-6 participants obtained all three certificates; 18 participants obtained the Roots of Success and Leave no Trace certificates only; and 2 participants obtained the Roots of Success and PHS Tree Tenders certificates only.

Table 4: Industry-Recognized Certifications Obtained

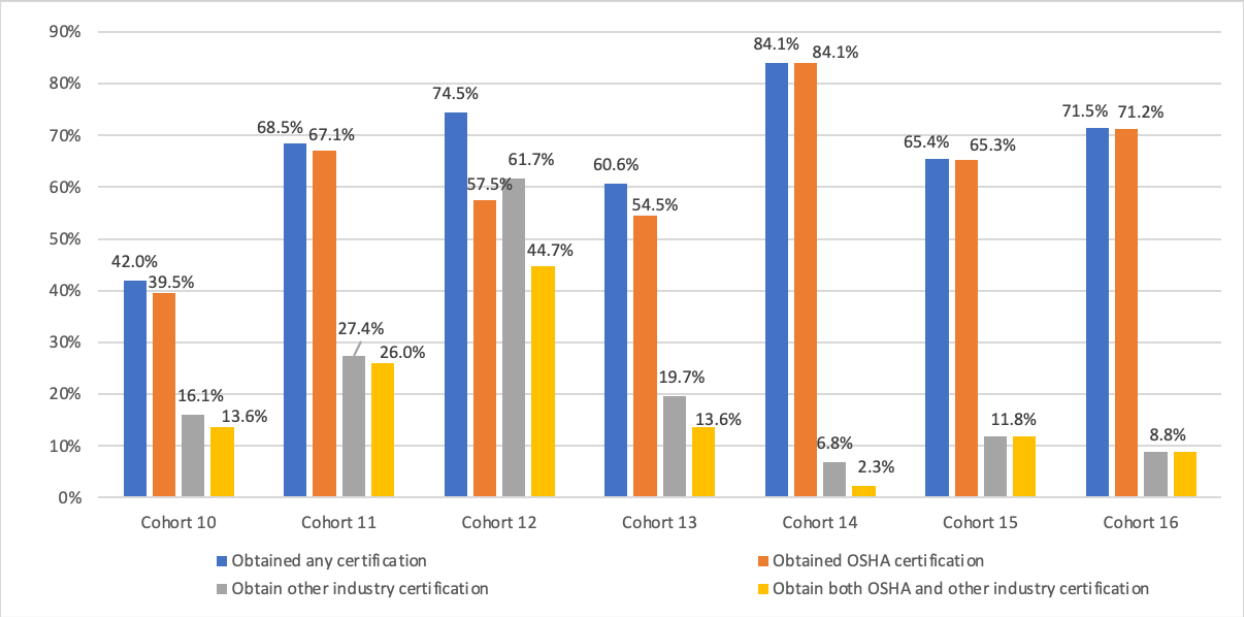
	Total
Number of Participants	**362**
Obtained any certification	231 (63.8%)
Number of certifications	
None	131 (36.1%)
One	121 (33.4%)
Two	70 (19.3%)
Three	25 (6.9%)
Four	12 (3.3%)
Five or more	3 (0.8%)
Obtained OSHA Certification	216 (59.7%)
OSHA-10	204 (56.4%)
OSHA-30	69 (19.1%)
Obtained Other Industry-Recognized Certification	91 (25.1%)
Bright Solar Futures	10 (2.8%)
Leave No Trace Certification	29 (8.0%)
CSM Certification	2 (0.6%)
PHS Tree Tenders Certification	29 (8.1%)
Roots of Success: Fundamentals	29 (8.1%)
First Aid and CPR Certification	2 (0.6%)
Culinary Arts	1 (0.6%)
NestWatch	4 (1.1%)
Entrepreneurship	5 (1.4%)
Obtained both OSHA and other Industry Certification	73 (20.2%)

Note: Number of participants with sample proportion in parentheses.

Figure 3 presents certification attainment outcomes by cohort of entry. With the exception of cohort 10, the majority of participants in each cohort obtained at least one industry-recognized certification. In general, it is evident that OSHA certifications played a dominant role; the vast

majority of participants who obtained a credential attained an OSHA certification while relatively fewer participants obtained other credentials.

Figure 3: Certification Attainment by Cohort of Entry



Note: Sample proportions.

3.4.3. Program Outcomes and Participant Characteristics

It is possible that program-related outcomes are correlated with observed participant characteristics, as listed in Table 1. To assess variation in program outcomes based on individual characteristics, we use multivariate regression models that estimate the relationship between each outcome (as available) and observed characteristics. These models can be expressed as follows:

$$Y_{it} = a + X_i \cdot \beta + \gamma \cdot OSHA_i + \delta \cdot Prior_i + Cohort_t \cdot \varepsilon + u_{it} \qquad [1]$$

The dependent variable in this model (Y_{it}) is the outcome of interest for individual i in cohort t and control variables include: (1) X_i – includes indicators for gender, race, and age; (2) $OSHA_i$ – indicates if individual earned OSHA certification prior to entry; (3) $Prior_i$ – indicates if individual had a criminal record; and (4) $Cohort_t$ – includes indicators for the cohort of entry. u_{it} is a

zero-disturbance term. Estimated parameters (β, γ, and δ) capture the correlation between individual characteristics, prior OSHA certification, and prior conviction, controlling for all other observed factors including cohort of entry.

We estimate this model separately for the following outcomes: completed Foundations, enrolled in Career Training, completed Career Training, obtained any certification, obtained OSHA certification, obtained non-OSHA certification, and obtained both OSHA and non-OSHA certifications. Results are summarized in Tables 5 and 6.

Table 5: Regression Results: Correlation of Program Outcomes with Participant Characteristics

	Completed Foundations	Enrolled in Career Training†	Completed Career Training†
Male	--	--	--
Female	0.013 (0.060)	-0.004 (0.063)	-0.044 (0.049)
Black	--	--	--
Hispanic	0.297 (0.120)***	0.483 (0.129)***	0.297 (0.102)***
Non-Black, non-Hispanic	-0.196 (0.127)	-0.111 (0.133)	-0.129 (0.105)
18-21 years old	--	--	--
22-24 years old	0.053 (.063)	-0.001 (0.064)	-0.037 (0.051)
25-28 years old	0.117 (0.071)	0.121 (0.073)*	0.121 (0.057)**
Age missing	-0.458 (0.495)	-0.295 (0.437)	-0.212 (0.372)
Had OSHA certification	-0.054 (0.085)	0.040 (0.092)	-0.039 (0.073)
Had criminal record	-0.097 (.062)	-0.051 (0.064)	-0.042 (0.050)
R-squared	0.0738	0.0942	0.0793
Observations	362	311	311
Dep. variable mean	0.461	0.344	0.161

Note: Estimated parameters with standard errors in parenthesis. Also included but not reported are fixed effects for cohort of entry. ***, **, * = statistically significant at the 1%, 5%, 10% level.

Results in Table 5 indicate that the likelihood of completing Foundations was not correlated with gender, age, prior OSHA certifications, or criminal record, but Hispanic participants were 29.7 percentage points more likely than black participants to complete Foundations. Similarly, Hispanics were 48.3 and 39.7 percentage points more likely than black participants to enroll in and complete Career Training, respectively. By the same token, results indicate that young adults (ages 25-28) were more likely than youth in the 18-21 years old category to enroll and complete Career Training.

Table 6 presents results for industry certification attainment outcomes. Results show that female participants were more likely than their male peers to obtain an OSHA certification but less likely to obtain other industry certifications. Hispanic participants seem much more likely than black participants to obtain a certification.

Results suggest a positive relationship between obtaining a certification and age, although some parameters lack statistical significance. Participants who had an OSHA certificate before enrolling in the program were at least as likely as their peers to obtain other industry certifications.

Finally, there is a negative relationship between having a criminal record and the likelihood of obtaining certifications. Those with a criminal record were 16.9 percentage points (about 26.5%) less likely than those with no criminal record to earn any certificate. Similar results are obtained for the likelihood of obtaining an OSHA certification and the likelihood of obtaining other industry certifications.

Table 6: Regression Results: Correlation of Certification Attainment with Participant Characteristics

	Obtained any Certification†	Obtained OSHA Certification†	Obtained Other Industry Certification	Obtained both OSHA and Industry Certification
Male	--	--	--	--
Female	0.038 (0.055)	0.078 (0.055)	-0.079 (0.045)*	-0.039 (0.043)
Black	--	--	--	--
Hispanic	0.303 (0.110)**	0.238 (0.111)**	0.012 (0.090)	-0.053 (0.085)
Non-Black, non-Hispanic	-0.372 (0.115)***	-0.339 (0.116)***	-0.055 (0.095)	-0.022 (0.090)
18-21 years old	--	--	--	--
22-24 years old	0.128 (0.057)**	0.126 (0.058)**	0.010 (0.047)	0.009 (0.045)
25-28 years old	0.135 (0.064)***	0.156 (0.065)**	0.031 (0.053)	0.053 (0.050)
Age missing	-0.471 (0.451)	-0.496 (0.454)	-0.195 (0.370)	-0.220 (0.351)
Had OSHA certification	-0.203 (0.077)***	-0.393 (0.078)***	0.023 (0.063)	-0.167 (0.060)***
Had criminal record	-0.169 (0.056)***	-0.123 (0.057)**	-0.094 (0.046)**	-0.048 (0.043)
R-squared	0.1825	0.2048	0.2155	0.1498
Observations	362	362	362	362
Dep. variable mean	0.638	0.597	.251	0.196

Note: Estimated parameters with standard errors in parenthesis. Also included but not reported are fixed effects for cohort of entry. †= Cohorts 10-14 only; excludes cohorts 15 and 16. ***, **, * = statistically significant at the 1%, 5%, 10% level.

3.5. Criminal Justice Outcomes

The target population of the program includes youth and young adults with a history of involvement with the criminal justice system, so a key outcome of interest is whether participants engaged in criminal activities after program entry. To construct relevant measures, we rely on the Unified Judicial System of Pennsylvania data, which provide complete records of court cases that resulted in a conviction or plea. These data were collected from the

Pennsylvania Administrative Office of the Court and cover the period January 2018 through August 2022.

Court data are merged with program data using participant name and date of birth. The merged data are used to identify: (1) if participants had a court case for an offense that occurred within 12 months of program entry;[6] and (2) if participants were convicted for an offense committed within 12 months of program entry. Note that these measures do not include court cases for offenses that occurred prior to program entry.

Table 7 presents these outcomes for the 362 participants in cohorts 10-16. About 6.4% of all participants had a court case for an offense committed within 12 months of program entry and about half of these (3.3% of all participants) were convicted for an offense committed within 12 months of program entry. Individuals with a criminal record were more likely than those with no criminal record to have a court case (13.7% versus 2.5%) or be convicted for an offense committed within 12 months of program of entry (7.3% versus 1.3%). Nevertheless, these figures indicate low recidivism among those with a criminal record and suggest that the program may be associated with reductions in criminal activity among participants.

[6] This measure includes court cases that have been adjudicated, leading to a guilty conviction or a plea agreement, and cases that are still active. It does not include cases before the court that resulted in something other than a guilty verdict or plea agreement or are still active (e.g., cases resulting in a verdict of not guilty or cases where charges were withdrawn).

Table 7: Criminal Justice Outcomes based on Criminal Court Data

	Court Case for Offense Committed within 12 months of program entry	Convicted for Offense Committed within 12 months of program entry
All participants (N=362)	23 (6.4%)	12 (3.3%)
Had Criminal Record (N=124)	17 (13.7%)	9 (7.3%)
No Criminal Record (N=238)	6 (2.5%)	3 (1.3%)

Note: Number of participants with sample proportions in parentheses.

To assess the relationship between participant characteristics and criminal justice outcomes, we use a regression model similar to model 1, as described above. This model is estimated separately for each court outcome using all participants except those who enrolled for the first time in cohort 16. Results in Table 8 show small variation in criminal justice outcomes by gender and race. Young adults (25-28 years old) were 5.1 and 5.2 percentage points less likely than youth in the 18-21 years old category to have an active court case or be convicted for an offense, respectively.

Participants with a criminal record were 9.1 percentage points more likely than those with no criminal record to have an active court case. By the same token, participants with a criminal record were 7.6 percentage points more likely to have a conviction for an offense committed within 12 months of program entry. Compared to the sample means, these results indicate that participants with a criminal record were 142% and 230% more likely than average to have an active court case and get convicted after program entry, respectively.

Table 8: Regression Results: Correlation of Criminal Justice Outcomes with Participant Characteristics

	Court Case for Offense Committed within 12 months of program entry†	Convicted for Offense Committed within 12 months of program entry†
Male	--	--
Female	-0.031 (0.027)	-0.022 (0.020)
Black	--	--
Hispanic	-0.024 (0.048)	-0.028 (0.039)
Non-Black, non-Hispanic	0.080 (0.055)	0.051 (0.042)
18-21 years old	--	--
22-24 years old	0.032 (0.025)	0.001 (0.019)
25-28 years old	-0.051 (0.030)*	-0.052 (0.025)**
Age missing	-0.128 (0.199)	-0.103 (0.161)
Had OSHA certification	0.028 (0.039)	0.012 (0.029)
Had criminal record	0.091 (.027)***	0.076 (0.022)***
R-squared	0.0419	0.0652
Observations	362	362
Dep. variable mean	0.064	0.033

Note: Estimated parameters with standard errors in parentheses. Also included but not reported are fixed effects for cohort of entry. ***, **, * = statistically significant at the 1%, 5%, 10% level.

3.6. Exit Survey Results

As described above, study participants who exited the program-either due to program completion or another reason-between September 2020 and October 2022, were asked to complete a survey at the time of exit.[7] In addition, starting in November 2022, the survey target group was broadened to include other exiting PowerCorpsPHL participants not in Cohorts 10-16 in effort to gather additional perspectives about the program. Overall, the

[7] It should be noted that only individuals not expected to enroll in the next immediate cohort of the program were asked to complete the survey. For example, individuals immediately enrolling in Career Training after successfully completing (and exiting) Foundations, were not asked to complete the survey.

survey was designed to gather information about current employment or educational enrollment status and opinions, perspectives, and experiences about the PowerCorpsPHL program.

Of the 111 participants who received the exit survey between September 2020 and October 2022, 27 (24.3%) completed the survey. As shown in Table 9, female participants were somewhat more likely to respond to the survey than to be in the survey sample (40.7% and 35.4%, respectively) while black participants were about as likely to respond to the survey as be in the survey sample (84.6% and 84.5%, respectively). The average age of respondents was similar to those in the survey sample (25.6 and 25.4 years, respectively).

Table 9: Characteristics of Survey Responders

	Survey Sample	Survey Responses
Total	111	27
Female	35.4% (n=82)	40.7% (n=27)
Black	84.5% (n=84)	84.6% (n=26)
Age	25.4 (2.7)	25.6(2.7)

Note: Age sample means with standard deviations in parentheses

Table 10 shows that almost one-half (48.1%) of respondents indicated that they had completed both Foundations and Career Training.[8] Overall, over one-third (38.5%) indicated that they were currently employed or enrolled in a paid internship or apprenticeship at the time of program exit.[9] Those completing both Foundations and Career Training were almost twice as likely than those completing just Foundations to be employed at program exit (58.3% vs. 30.0%).

[8] This percentage is higher than the 19.6% reported to have competed Career Training in Table 3. This may reflect two things: 1) survey data reflects information self-reported by study participants verses data collected by the program and 2) participants who had been more invested or more successful in the PowerCorpsPHL program were also more likely to complete the survey than others.

[9] Q. Are you currently employed or participating in a paid internship or apprenticeship that is not related to or run by the PowerCorpsPHL program?

Table 10: Program Completion Status

	Number Survey Respondents	Employment Status	
		Employed	Not Employed
Did not complete Foundations	4	0 (0%)	4 (100%)
Completed Foundations but not Career Training	10	3 (30.0%)	7 (70.0%)
Completed Foundations and Career Training	13	7 (58.3%) *	5 (41.7%) *
Total	27	10 (38.5%) **	16 (61.5%) **

Note: Number of individuals with sample proportion in parentheses.
*n=12; **n=26

Overall, three out of four (75%) respondents rated the PowerCorpsPHL program as either "very good" or "excellent". As shown in Figure 4, among those who completed Foundations and Career Training, 83.3% gave a "very good" or "excellent" rating compared with 87.5% for those who completed Foundations only.

Figure 4: Respondent Program Satisfaction

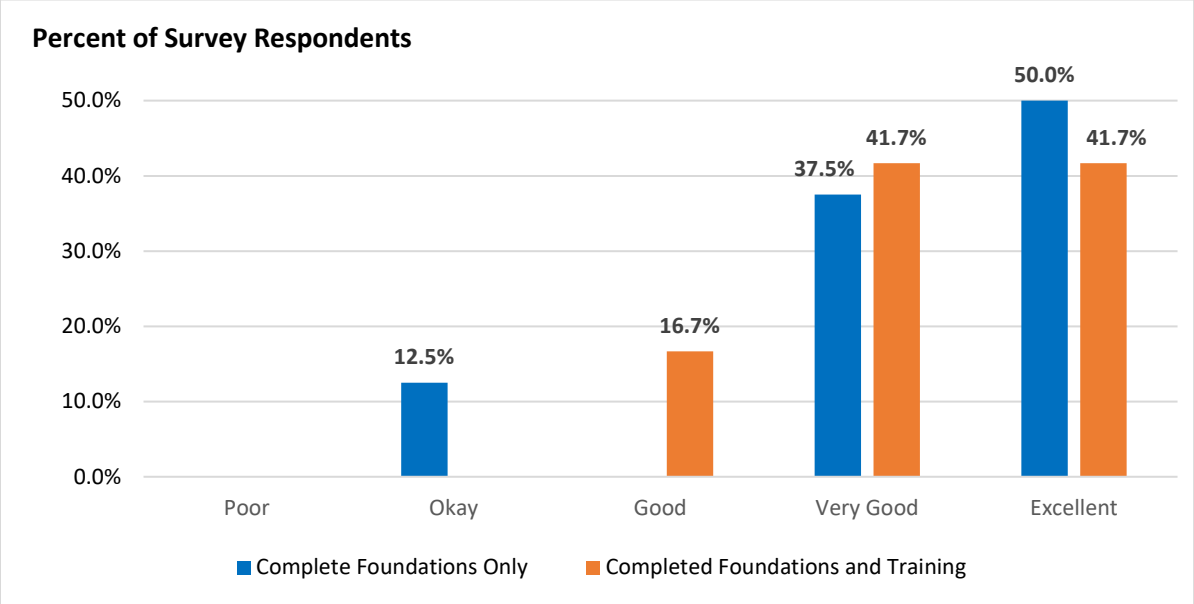


Figure 5 shows that, among those responding, most either agreed or strongly agreed with statements related to positive program satisfaction. This includes responses to the following questions:

- I understand what was expected of me when I enrolled in the program

- Participation and interaction with staff and instructors were encouraged
- The staff and/or instructors were well-prepared
- I would recommend this training to others
- I felt program staff and instructors wanted me to succeed

Figure 5: Participant Agreement with Statements of Satisfaction

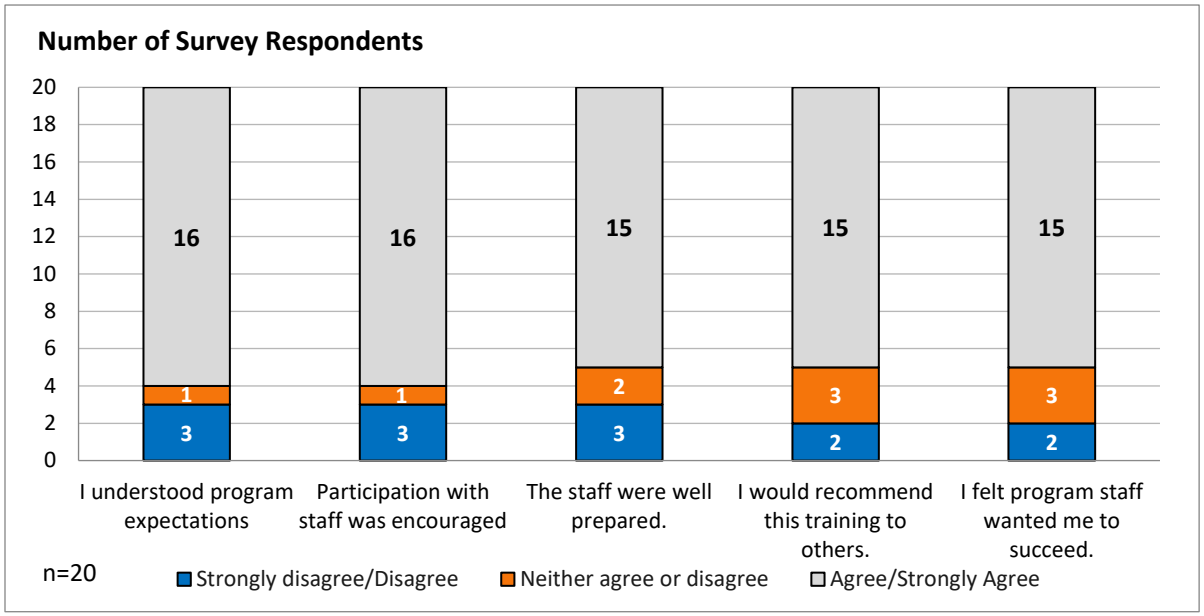
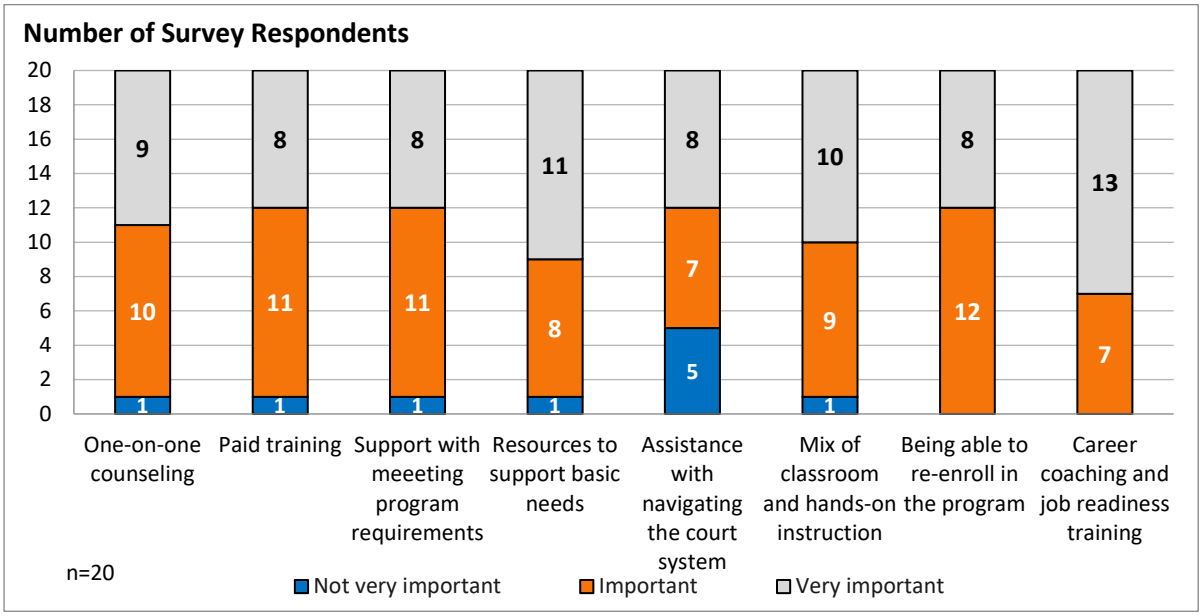


Figure 6 shows that most respondents rated all program components as important or very important, with "flexibility to enroll or complete the program when able", and "career coaching and job readiness" components most often rated this way (n=20). The program's assistance in navigating involvement with the court system was most often rated as not very important (n=5). This may not be surprising, given that this service is not essential for all participants.

Figure 6: Importance of Program Components



As shown in Figure 7, most respondents stated that they agreed or strongly agreed with statements of positive behavioral outcomes related to program participation while Figure 8 shows that most survey respondents expressed that they have much or complete confidence related to job readiness skills related to program participation. Overall, these results-although they are based on responses from a small proportion of participants-support the view that the program may have positively influenced the participants' confidence and job-readiness skills.

Figure 7: Self-Efficacy

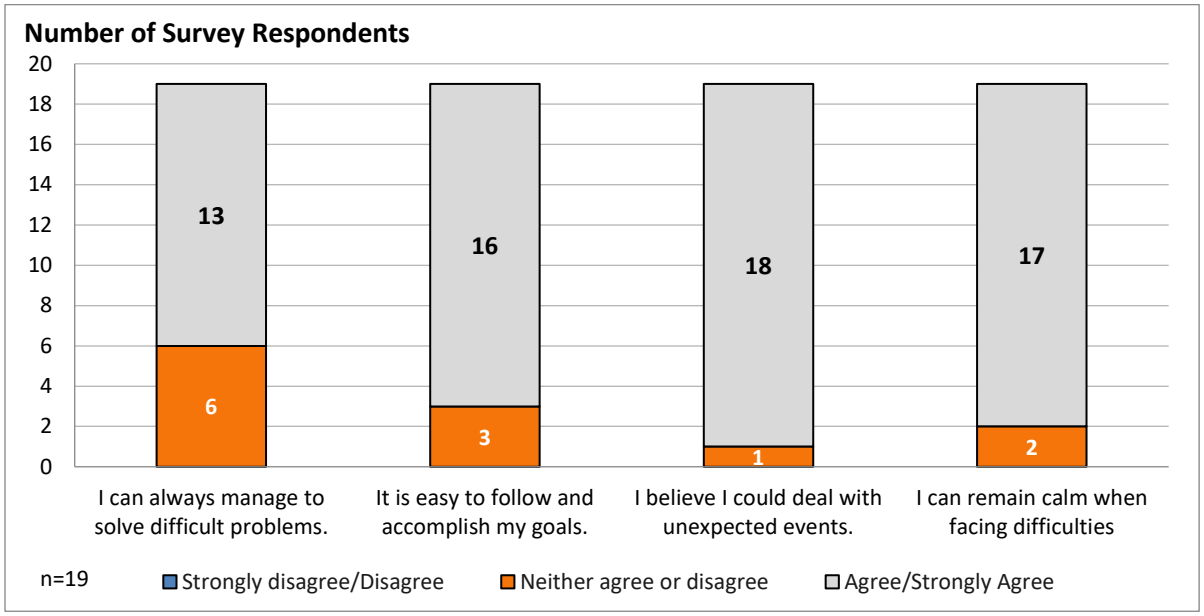
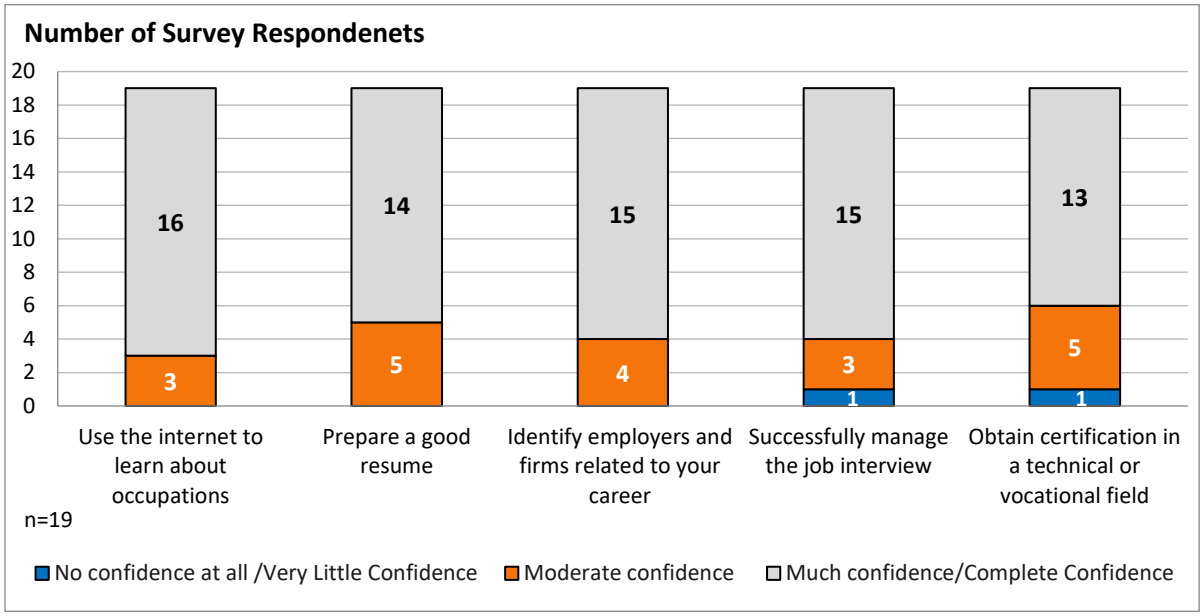


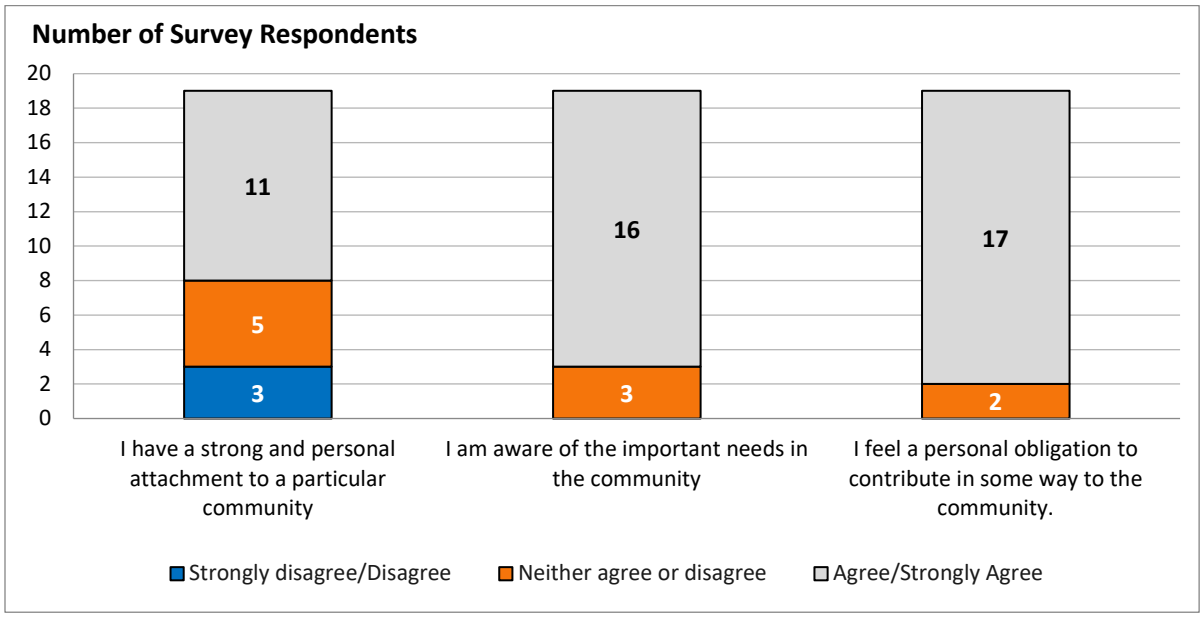
Figure 8: Job Readiness Outcomes



With regard to community engagement program outcomes, shown in Figure 9, respondents most often agreed or strongly agreed with statements of their "awareness of the important needs of the community" and their feelings about a "personal obligation to contribute in some way to the community" (n=16 and n=17, respectively). Respondents more often disagreed or

strongly disagreed with statements of "having a strong and personal attachment to a particular community" (n=3). These findings are consistent with a key assumption that participation in the PowerCorpsPHL community service and skills-based training contributes to changes in attitudes and beliefs about civic engagement.

Figure 9: Community Stewardship Outcomes



As shown in Table 11, among those indicating involvement with the criminal (or juvenile) justice system prior to participating in the PowerCorpsPHL program, none indicated involvement while participating in the program. Six survey respondents indicated that they had been arrested prior to participating in PowerCorpsPHL, each of these participants indicated that they had been convicted or adjudicated delinquent for their crime and were held in a secure containment facility (e.g., jail, prison, or juvenile outplacement).[10]

[10] This percentage is likely to be different than the 34.3% of program participants identified to have a criminal record prior to entering PowerCorpsPHL in Table 3 because the survey information reflects self-reported responses and is not likely representative of the all participants because of the relatively low response rate.

Table 11: Criminal Justice Involvement

	Yes, prior to participating in the PowerCorpsPHL program	Yes, while participating in the PowerCorpsPHL program
Have you ever been arrested?	6 (22.2%)	0
Have you ever been convicted of a crime or adjudicated delinquent?	6 (22.2%)	0
Have you ever been incarcerated at a jail, prison, or juvenile detention or secure containment facility?	6 (22.2%)	0

Note: Number of individuals with sample proportions in parentheses. Sample size = 27.

3.7. Follow-Up Survey Results

As described above, study participants from Cohorts 10 -16 who had exited the program at least 6 months prior to survey implementation (or between January 2018 and March 2022) were asked to complete the follow-up survey. The survey was designed to gather information about participants' employment and educational/training history, credential attainment, and criminal justice involvement since exiting the PowerCorpsPHL program.

As shown in Table 12, of the 339 study participants from Cohort 10-16 who received the exit survey, 91 completed the survey.[11] Females comprised a far greater proportion of those completing the survey (45.1%) as were in the survey sample (25.1%). Black participants comprised about the same proportion of survey respondents (91.1%) and proportion of survey sample (92.6%). Survey respondents were about the same age (25.5 years old) as those in the survey sample (25.7 years old).

[11] A small number (n=7) of survey respondents exited PowerCorpsPHL and were re-enrolled at the time of they responded to the survey. These individuals were excluded from analysis of questions related to being currently employed or currently participating in training or educational endeavors other than PowerCorpsPHL.

Table 12: Characteristics of Study Participants, Follow-Up Survey Sample and Respondents

	Survey Sample	Survey Responders
Number of Participants	339	91
Female	25.1%	45.1%
Black	92.6%	91.1%
Age in 2022	25.7 (2.74)	25.5 (2.69)

Note: Sample proportions or sample means with standard deviations in parentheses.

Table 13 shows that among survey respondents who exited PowerCorpsPHL and were not currently enrolled in the program, 55.4% reported that they were employed or participating in a paid internship or apprenticeship. Among all survey respondents (i.e., both those not currently enrolled in the program and those who had exited and were reenrolled), however, 76.7% indicated that they had been employed at some point after exiting the PowerCorpsPHL program. Most currently employed participants were only employed at one job, however, 14% indicated they were working at another job, as well.

Table 13: Employment Outcomes

	Exited, not currently enrolled	**All respondents (not currently enrolled and re-enrolled)**
	Currently Employed (n=83)	**Employed at some point since leaving PC (n=90)**
Employed	46 (55.4%)	69 (76.7%)

Among respondents that were not employed at the time of the survey and no longer participating in PowerCorpsPHL, 78% reported that they were looking for work. Among responding participants not looking for work, reasons cited included that they planned to soon begin training, they were volunteering or were involved in an unpaid internship or apprenticeship, or that they had a disability preventing them from work.

Table 14 shows that paid jobs-opposed to paid internships or paid apprenticeships-were the most common type of employment among responding participants. Among respondents currently employed or employed at any point after exiting PowerCorpsPHL, most-or 87.0% and 82.6%, respectively, were employed at a paid job. Further, 78.6% of currently employed

respondents and 69.8% of respondents employed at any point, were employed full-time or over 35 hours per week.

Table 14: Type of Employment and Employment Status

	Currently Employed	Percent	Employed at some point since leaving PC	Percent
Type of Employment				
Paid Job	40	87.0%	57	82.6%
Paid Internship	2	4.3%	4	5.8%
Paid apprenticeship	4	8.7%	8	11.6%
TOTAL	46	100.0%	69	100.0%
Employment Status				
Full-time (36+hours)	33	78.6%	44	69.8%
Part-time (20-35 hours)	6	14.3%	13	20.6%
Part-time (less than 20 hours)	3	7.1%	6	9.5%
TOTAL	42	100.0%	63	100.0%

As shown in Table 15, most employers paid wages over $15.00 per hour. Currently employed respondents were more likely than those that had been employed at some point since exiting the program to report these wages, at 71.4% vs. 60.3%.

There was variation in employer industry with most reported in construction, health care and social assistance, utilities, education services, and retail accommodation and food service. This was true for both those currently employed (48.8%) and those employed at some point since leaving PowerCorpsPHL (48.8% and 50.0%, respectively). Employment in at least two of these industries - construction and utilities-is not surprising given PowerCorpsPHL training through the GSI Academy and the Skilled Trades Academy.

Table 15: Hourly Wages and Employment Industry

	Currently Employed	Percent	Employed at some point since leaving PC	Percent
Wages Earned per Hour				
Over $20.00	11	26.2%	13	20.6%
Between $17.51 and $20.00	9	21.4%	12	19.0%
Between $15.01 and $17.50	10	23.8%	13	20.6%
Between $12.51 and $15.00	4	9.5%	10	15.9%
Between $10.01and $12.51	3	7.1%	5	7.9%
Under $10.00	0	0.0%	2	3.2%
Other (e.g., stipend)	5	11.9%	8	12.7%
TOTAL	42	100.0%	63	100.0%
Industry of Employment				
Other services	12	29.3%	17	27.4%
Construction	5	12.2%	11	17.7%
Health Care and Social Assistance	5	12.2%	6	9.7%
Utilities	4	9.8%	5	8.1%
Educational Services	3	7.3%	4	6.5%
Retail Trade and Accommodation and Food Service	3	7.3%	5	8.1%
Management of Companies and Enterprise and Finance and Insurance	2	4.9%	2	3.2%
Agriculture, Forestry, Fishing and Hunting	2	4.9%	4	6.5%
Transportation and Warehousing	2	4.9%	4	6.5%
Administrative Support and Waste Management and Remediation Services	1	2.4%	1	1.6%
Professional, Scientific, and Technical Services	1	2.4%	2	3.2%
Information Science	1	2.4%	1	1.6%
TOTAL	41	100.0%	62	100.0%

In addition to employment outcomes, other important outcomes related to establishing a career pathway include participation in further training and credential attainment. As shown in Table 16, among responding participants not re-enrolled in PowerCorpsPHL, 17.3% indicated that they were currently enrolled in an educational or skills-based training program or classes while 27.8% of all responding participants indicated they had earned at least one credential

since exiting the program.

Finally, since leaving the PowerCorpsPHL program, seven or 9.2% of respondents indicated that they had been arrested[12] and 4 or 5.5% indicated that the arrest resulted in conviction.

Table 16: Other Program Outcomes

	Number of Respondents	Percent of Respondents
Currently in training	13	17.3%
Credentialed earned since exiting program	22	27.8%
Arrested since exiting the PowerCorpsPHL program	7	9.2%
Convicted since exiting the PowerCorpsPHL program	4	5.5%

4. Quasi-Experimental Impact Study

A key objective of the current study is to examine the effects of the program on the labor market outcomes of individuals who entered the program from January 2018 through March 2021. For this purpose, we developed a quasi-experimental evaluation approach, in which program impacts are estimated by comparing the outcomes of program participants (treatment group) with the outcomes of non-participants who were observationally equivalent to participants (matched comparison group). This approach includes the following components:

- Apply matching methods to construct matched comparison groups for PowerCorpsPHL participants, using program data merged with administrative data provided by the state of Pennsylvania.[13]
- Use Pennsylvania administrative data to construct common labor market outcomes for

[12] This percentage is likely to be different than the criminal justice outcomes presented in Table 7 because the survey information reflects self-reported responses and is not likely representative of the all participants because of the relatively low response rate.

[13] The original design also included use of Criminal Justice Data to use prior involvement with the criminal justice system (in addition to individual characteristics and prior employment outcomes reported in the state administrative data) to match PowerCorpsPHL participants with non-participants. Unfortunately, for confidentiality reasons, it was not feasible to merge the Criminal Justice Data with the state administrative data and thus participants are matched with non-participants based on individual characteristics and prior earnings but not based on prior involvement with the criminal justice system.

treatment and matched comparison group cases.

- Estimate program impacts by comparing the labor market outcomes between the treatment and the matched comparison group.[14]

Below, we discuss the evaluation approach, including the research questions, data sources, methodology, and interim results based on data available to date.

4.1. Research Questions

The objective of the quasi-experimental impact study is to examine the program's effects on participants' labor market outcomes. In particular, the study addresses the following questions:

1) Did the PowerCorpsPHL program improve participant employment rates following program entry?
2) Did the PowerCorpsPHL program improve participant employment retention rates following program entry?
3) Did the PowerCorpsPHL program increase participant earnings following program entry?

Addressing these questions will provide insight into the effectiveness of the program to promote the employment and career advancement of participants.

4.2. Data Sources

The study combines PowerCorpsPHL program data with Pennsylvania administrative data provided by the Pennsylvania Department of Labor and Industry. These data sources are described below.

PowerCorpsPHL program data. These data, provided by EducationWorks, provide information on all individuals who enrolled in the program from January 2018 through March 2021. As

[14] The original design also included impacts on criminal justice outcomes using Criminal Justice System data. However, for confidentiality reasons, merging Criminal Justice System data with administrative data was not feasible, so it was not feasible to estimate program impacts on criminal justice outcomes.

described above, these data report individual characteristics and personal identifiers that can be used to merge with administrative data sources. In total, the data include 362 individuals who enrolled in the program during the study period.

Pennsylvania Employment Service (ES) data. These data provide information on all workers who: (1) sought employment and training services with the Pennsylvania workforce system around the same time when PowerCorpsPHL participants enrolled in the program; (2) were residing in the same areas as did PowerCorpsPHL participants, and (3) were 18-28 years old (the target age group of the PowerCorpsPHL program).

During the study period, there were 362 PowerCorpsPHL participants. The vast majority of participants were black (90.6%) while the remaining were Hispanic (5.0%), white (1.4%), and other races (3.0%). The Pennsylvania Department of Labor and Industry had concerns about the confidentiality of the state administrative data, particularly about the possibility of identifying the personal information and wage records of non-black participants. For this reason, the state indicated that they cannot provide data for the 34 non-black PowerCorpsPHL participants and for 5 of the 328 black participants. As such, the analysis sample for the quasi-experimental impact study includes 328 black PowerCorpsPHL participants (which comprise 89.2% of all 362 participants during the study period) and 5,323 black non-participants who sought state services during the same period and were residing in the same areas as did program participants.

To safeguard the confidentiality of the data, the Pennsylvania Department of Labor and Industry also restricted the number of variables that could be included in the analysis. As such, Actus provided the state a datafile for the 323 black participants that included social security number, gender, age group (18-21, 22-24, and 25-28 years old), and cohort of entry. The state returned a de-identified file with treatment and comparison cases that included gender, age group, and cohort of entry. Thus, the analysis for the quasi-experimental impact study relies on these three variables plus the wage records described below. Because the data were de-

identified, the evaluation team could not match treatment and comparison cases with Criminal Justice System data and thus it was not feasible to use prior involvement with the criminal justice system in the matching process or estimate program impacts on criminal justice outcomes after program entry.

Pennsylvania Unemployment Insurance (UI) wage records. These data provide quarterly earnings information on the vast majority of workers in the state, including year/quarter of employment, total earnings, and employer industry. The Pennsylvania Department of Labor provided UI wage records from quarter 3, 2016 through quarter 2, 2022 for: (1) the 323 black individuals who enrolled in the PowerCorpsPHL program from January 2018 through March 2021; and (3) the 5,323 non-participants included in the ES sample.

These data are used to measure individual outcomes for up to 16 quarters after program entry, including employment, job retention, and earnings. Note that because of data availability, we are able to measure outcomes as follows: for quarters 1-5 after program entry for the entire sample (cohorts 10-16); for quarters 1-7 after program entry for cohorts 10-15 only; for quarters 1-9 after entry for cohorts 10-14 only; for quarters 1-11 after entry for cohorts 10-13 only; for quarters 1-13 after entry for cohorts 10-12 only; for quarters 1-15 after entry for cohorts 10-11 only; and for quarters 1-16 after entry for cohort 10 only.

4.3. Methodology

To examine the average treatment effects of the program on labor market outcomes, we use a quasi-experimental approach, which enables us to estimate program impacts by comparing the outcomes of the 323 black participants (treatment group) to the outcomes of a matched comparison group, comprised of black non-participants who were residing in the same areas as program participants, were observationally similar to program participants with respect to gender, age, and prior employment outcomes, and enrolled in state employment and training services during the same period.

To identify the comparison group, we use matching methods. These methods rely on the conditional independence assumption, which may be formally written as $Y_{0i} \perp T_i / X_i$, where Y_{0i} is the outcome for individual i if that individual had not participated in the program (not observed for participants), T_i is an indicator of program participation (equals 1 if treated, 0 if not treated), and X_i is a vector representing a set of observable individual characteristics. Essentially, this assumption stipulates that, controlling for observed characteristics, individual outcomes in the absence of the program are independent of program participation. The implication is that non-participants who are observationally similar to participants comprise an appropriate matched comparison group for estimating program impacts.

The treatment group includes 323 black individuals who participated in the PowerCorpsPHL program from January 2018 through March 2021. To construct a matched comparison group, we use the propensity score matching (PSM) method, as follows:

- *Step 1: Merge program data with ES data*-PowerCorpsPHL program data are combined with the ES data, forming a single dataset containing both treatment and comparison individuals. UI wage records are appended using participant personal identifiers (Social Security number, name, and address). The merged data include available characteristics (gender, age, and cohort of entry), prior and subsequent employment outcome measures of participants and non-participants, and interactions of these.[15]
- *Step 2: Produce propensity score*-Based on this sample, a logit model predicting whether an individual was a treated case is estimated:

$$\Pr(T_i = 1) = \frac{\exp(\beta X_i)}{1 + \exp(\beta X_i)}$$

where X_i is a vector identifying the set of covariate values for individual i, and β is a vector of coefficients to be estimated. Vector X_i contains both the covariates (e.g., individual characteristics, employment history) and also nonlinear terms for these

[15] The final list of variables used in the model is as follows: indicators for gender, race group, and cohort of entry; quarterly earnings in quarters 1 through 6 prior to entry; interactions between prior wages and cohort of entry; interactions between prior wages and gender; interactions between prior wages and age groups; and interactions between age and cohort of entry.

measures and interaction terms to provide a general structure to identify the relationship between participation and these variables. Based on the estimated coefficient, the propensity score for each participant and nonparticipant is calculated as follows:

$$p_i = \frac{\exp\,(\tilde{\beta} X_i)}{1 + \exp\,(\tilde{\beta} X_i)}$$

The propensity score p_i is equal to the predicted probability of program participation for an individual i, based on individual characteristics. As shown above, this is calculated using the vector of parameter estimates ($\tilde{\beta}$) from the logit model and the vector of individual characteristics (X_i). At this point, we omit cases from each sample that are off the common support of the propensity score;[16] these are cases whose characteristics were such that they could not be matched.[17]

- *Step 3: Use propensity score to construct sample weight*-Each comparison case is weighted by the odds ratio of the predicted propensity score ($w_i = \frac{p_i}{1-p_i}$). If the specification used in estimating the propensity score is correct, theory indicates that the weighted comparison sample would have the same distribution on all the variables included in the model as the treatment sample (Angrist and Pischke, 2009).
- *Step 4: Compare treatment and weighted matched comparison sample*-Once matching is done, it is necessary to test whether the implementation of the matching has been successful, to ensure that the treatment and the matched comparison group are truly matched in their characteristics. To do so, we compare the means on all individual characteristics in X_i for the treatment and the weighted matched comparison group.

[16] In practice, the common support includes all cases with predicted propensity scores between the smallest propensity score for the treatment group and the largest propensity score for the comparison group. Propensity scores outside this range are based on extrapolation and, therefore, may be subject to serious bias (Caliendo and Kopeing, 2008).

[17] In matching applications, it is common to omit a large number of comparison cases that do not provide useful matches for any treatment case. In this case, we omitted three treatment cases and 1,488 comparison cases that were off the common support. Such omissions do not create a bias in our estimates because our focus is on estimating impacts for participants. The fact that only two treatment cases are omitted, the impact results will reflect the true impact of the program for the full sample of black treatment group participants.

This matching approach produces a matched comparison group consisting of non-participants who enrolled in ES during the same period, had similar characteristics and prior employment outcomes, and resided in the same areas as did PowerCorpsPHL participants. Under the maintained conditional independence assumption, the outcomes of the matched comparison group provide the counterfactual of the outcomes the treated group would have achieved if treatment had not occurred. In effect, the difference between the mean outcome of the treatment and the mean outcome of the matched control group is the impact estimate, or the *average effect of the treatment on the treated*. Formally, the estimated program effect on the outcome of interest may be written as:

$$\mathrm{E}(\Delta Y_i / T_i = 1) = \frac{1}{N_T} \sum_{i=1}^{N_T} Y_i - \frac{1}{\sum_{i=1}^{N_C} w_i} \sum_{i=1}^{N_C} w_i Y_i$$

where Y_i is the outcome of interest for individual i; N_T and N_C is the number of treatment and matched comparison group cases, respectively; and w_i is the odds ratio of the predicted propensity score. This shows that the program's effect is equal to the mean outcome across treated cases (the first term on the right side of the equals sign) minus the mean outcome for the weighted matched comparison group (the second term on the right side of the equals sign). Given the conditional independence assumption, the only difference between the treatment and the matched comparison groups is that individuals in the treatment group participated in the PowerCorpsPHL program. Therefore, any outcome differences between the treatment and the matched comparison group are attributed to the program.

There is, of course, variation in the program's effect across participants, and the estimate is subject to uncertainty because of random factors that may affect individual program success. For that reason, to calculate the statistical significance of the estimates, we use standard errors that capture statistical factors that influence a program's success. For the type of matching process used here, bootstrapping is the best method to calculate standard errors that capture such statistical factors (Caliendo and Kopeing, 2008). Bootstrap standard errors are used to calculate t-tests to assess whether the estimated program impacts are statistically significant.

4.4. Results

4.4.1. Matching Results

Table 17 summarizes the characteristics of PowerCorpsPHL participants (treatment group) and state ES participants (comparison group) before applying the matching process. As seen, there are notable treatment-comparison group differences by gender, age, and cohort of entry.[18] Treatment cases were much more likely than comparison cases to be male and to be in the 18-21 or in the 22-24 years old age group. There are also notable differences by cohort of entry.

Table 17: Characteristics of Treatment and Comparison Group Individuals

	Treatment Group	Comparison Group
Sample size	**323**	**5,323**
Gender		
Male	0.731	0.304
Female	0.269	0.696
Race/ethnicity		
Black	1.000	1.000
Age		
18-21 years old	0.381	0.261
22-24 years old	0.328	0.288
25-28 years old	0.291	0.451
Cohort of entry		
Cohort 10 (Q1:2018)	0.223	0.206
Cohort 11 (Q3:2018)	0.207	0.244
Cohort 12 (Q1:2019)	0.133	0.180
Cohort 13 (Q3:2019)	0.180	0.196
Cohort 14 (Q1:2020)	0.124	0.149
Cohort 15 (Q3:2020)	0.037	0.009
Cohort 16 (Q1:2021)	0.096	0.018

Note: Sample proportions.

[18] Cohort of entry for comparison group cases is defined based on the calendar quarter when each comparison case enrolled for state employment services.

Moreover, Table 18 shows substantial differences between treatment and comparison group cases in prior earnings and employment rates. Treatment cases had much lower employment rates and average earnings in each of the six quarters prior to program entry compared with comparison cases. Disparities in characteristics and prior outcomes indicate that the comparison group differs in important ways from the treatment group and thus it is not appropriate to use the unmatched comparison group to measure counterfactual outcomes for the impact study.

Table 18: Prior Employment and Earnings of Treatment and Comparison Group

	Treatment Group	Comparison Group
Sample size	**323**	**5,323**
Prior Earnings		
In quarter 1 before entry	1,166 (2,542)	2,719 (4,931)
In quarter 2 before entry	948 (1,556)	2,840 (4,762)
In quarter 3 before entry	920 (1,760)	2,981 (4,716)
In quarter 4 before entry	833 (1,717)	2,628 (4,231)
In quarter 5 before entry	887 (1,602)	2,611 (3,941)
In quarter 6 before entry	819 (1,648)	2,425 (3,810)
Prior Employment		
In quarter 1 before entry	0.473	0.613
In quarter 2 before entry	0.440	0.604
In quarter 3 before entry	0.430	0.610
In quarter 4 before entry	0.421	0.585
In quarter 5 before entry	0.412	0.587
In quarter 6 before entry	0.375	0.562

Note: Sample means with standard deviations in parentheses for prior earnings and sample proportions for prior employment.

The matching process described in Section 4.3 is designed to re-weigh the comparison sample to remove differences in characteristics and prior outcomes and use the outcomes of the re-weighted (or matched) comparison sample to form the counterfactuals for the impact study.

This allows us to construct weights that are used to re-weigh the comparison sample so that the characteristics and prior outcomes of the comparison sample matches those of the treatment sample. If matching is successful, the only difference between the treatment and the matched comparison samples is that treatment cases participated in the PowerCorpsPHL program while matched comparison cases received state services. Thus, post-program treatment-matched comparison group differences in outcomes constitute reliable estimates of the PowerCorpsPHL program's average treatment effects, measured over and above the effects of state services.

To illustrate that matching was successful, Tables 19 and 20 present t-test differences in characteristics and prior employment outcomes, respectively, for the unmatched sample (treatment vs. comparison group) and for the matched sample (treatment vs. matched comparison group).

The left column in Table 19 (unmatched sample) confirms that there are statistically significant differences in the gender, age, and cohort of entry distributions between the treatment and comparison group. The right column (matched sample) shows that, after matching is applied, differences in characteristics are eliminated and that the treatment and the matched comparison groups are identical with respect to observed factors. Similarly, Table 20 shows that the matching process eliminated treatment-comparison differences in prior employment rates and earnings.

Table 19: Treatment-Comparison Group Differences in Characteristics, Unmatched and Matched Samples

	Unmatched Sample	Matched Sample
Gender		
Male	*+0.426 [0.026]****	*+0.030 [0.043]*
Female	*-0.426 [0.026]****	*-0.030 [0.043]*
Age		
18-21 years old	*+0.119 [0.025]****	*+0.051 [0.047]*
22-24 years old	*+0.040 [0.026]*	*0.007 [0.050]*
25-28 years old	*-0.160 [0.028]****	*-0.057 [0.050]*
Cohort of entry		
Cohort 10 (Q1:2018)	*+0.017 [0.023]*	*-0.055 [0.049]*
Cohort 11 (Q3:2018)	*-0.037 [0.025]*	*-0.016 [0.054]*
Cohort 12 (Q1:2019)	*-0.046 [0.022]***	*+0.014 [0.065]*
Cohort 13 (Q3:2019)	*-0.016 [0.023]*	*+0.060 [0.060]*
Cohort 14 (Q1:2020)	*-0.025 [0.020]*	*-0.005 [0.061]*
Cohort 15 (Q3:2020)	*-0.028 [0.006]****	*+0.056 [0.110]*
Cohort 16 (Q1:2021)	*+0.079 [0.008]****	*-0.002 [0.070]*

Note: Unmatched sample column reports differences in sample proportions between the unmatched treatment and comparison group; matched sample column reports differences in sample proportions between the treatment and the matched comparison group. Standard errors are reported in brackets. ***, **, * = statistically significant at the 10, 5, 1% level.

Table 20: Treatment-Comparison Group Differences in Prior Employment and Earnings, Unmatched and Matched Samples

	Unmatched Sample	Matched Sample
Prior Earnings		
In quarter 1 before entry	*-1,552 [277]****	*+5 [11]*
In quarter 2 before entry	*-1,892 [266]****	*+4 [11]*
In quarter 3 before entry	*-1,988 [264]****	*+5 [11]*
In quarter 4 before entry	*-1,795 [237]****	*+9 [12]*
In quarter 5 before entry	*-1,724 [220]****	*+9 [12]*
In quarter 6 before entry	*-1,606 [213]****	*-1 [11]*
Prior Employment		
In quarter 1 before entry	*-0.139 [0.028]****	*+0.044 [0.045]*
In quarter 2 before entry	*-0.164 [0.029]****	*+0.056 [0.044]*
In quarter 3 before entry	*-0.180 [0.028]****	*+0.037 [0.045]*
In quarter 4 before entry	*-0.163 [0.028]****	*+0.040 [0.045]*
In quarter 5 before entry	*-0.175 [0.028]****	*+0.038 [0.045]*
In quarter 6 before entry	*-0.188 [0.028]****	*-0.003 [0.046]*

Note: Unmatched sample column reports differences in sample proportions between the unmatched treatment and comparison group; matched sample column reports differences in sample proportions between the treatment and the matched comparison group. Standard errors are reported in brackets. Sample sizes: Unmatched sample = 5,646 (323 treatment; 5,323 comparison); matched sample = 4,155 (320 treatment; 3,835 comparison). ***, **, * = statistically significant at the 10, 5, 1% level.

4.4.2. Post-Program Outcomes

Using available Pennsylvania UI wage records, we construct common labor market outcomes for the treatment and matched comparison groups. In particular, we measure four outcomes:

- *Employment rates for up to 16 quarters after program entry*-We construct indicators that capture if the individual had positive earnings in the quarter of entry and for up to 16 quarters after program entry.[19]

[19] As indicated above, available UI wage records allow us to measure outcomes as follows: (1) for quarters 1-5 after program entry for the entire sample (cohorts 10-16); (2) for quarters 1-7 after entry for cohorts 10-15; (3) for quarters 1-9 after entry for cohorts 10-14; (4) for quarters 1-11 after entry for cohorts 10-13; (5) for quarters 1-13 after entry for cohorts 10-12; (6) for quarters 1-15 after entry for cohorts 10-11; and (7) for cohorts 1-16 after entry for cohort 10.

- *Job retention measures for up to 8 quarters after program entry*-We construct three measures of job retention: (1) indicators that capture if the Individual was employed in the first quarter after entry *and* in up to eight subsequent quarters; (2) indicators that capture if individual was employed in the third quarter after entry (after most participants had exited training) *and* in up to eight subsequent quarters; and (3) number of quarters employed in the first eight quarters after entry.[20]
- *Earnings measures for up to 16 quarters after program entry*-We measure individual quarterly earnings amounts for up to 16 quarters after entry as well as total earnings in quarters 1-4, 1-8, 1-12, and 1-16.[21]

Table 21 presents employment rates in the quarter of entry and for up to 16 quarters after program entry, as available. About 92.3% and 87.9% of treatment group individuals were employed in the quarter of entry and in quarter 1 after entry, respectively, reflecting the paid training provided by the program. There was a large decline in employment in quarter 3, after the paid program training had ended for most participants. Nevertheless, participant employment rates remained high in quarters 4-8 after entry (in the 59-67% range) and in quarters 9-16 after entry (in the 57-62% range). Relative to the matched comparison group, treatment cases had higher employment rates throughout the 16-quarter follow-up period.

[20] Based on available UI wage records, we measure job retention outcomes follows: (1) for quarters 1-5 after program entry for the entire sample (cohorts 10-16); (2) for quarters 1-7 after entry for cohorts 10-15; and (3) for quarters 1-8 after entry for cohorts 10-14. Note that because of data availability, we do not consider job retention outcomes beyond quarter 8 after program entry.

[21] Based on available UI wage records, we measure quarterly earnings as follows: (1) in quarters 1-5 after program entry for the entire sample (cohorts 10-16); (2) in quarters 1-7 after entry for cohorts 10-15; (3) in quarters 1-9 after entry for cohorts 10-14; (4) in quarters 1-11 after entry for cohorts 10-13; (5) in quarters 1-13 after entry for cohorts 10-12; (6) in quarters 1-15 after entry for cohorts 10-11; and (7) in cohorts 1-16 after entry for cohort 10. By the same token, we measure total earnings thusly: (1) in quarters 1-4 after entry for the entire sample (cohorts 10-16); (2) in quarters 1-8 after entry for cohorts 10-14; (3) in quarters 1-12 after entry for cohorts 10-12; and (4) in quarters 1-16 after entry for cohort 10.

Table 21: Employment Rates, Treatment and Matched Comparison Group

	Treatment Group	Matched Comparison Group
Employment		
In quarter of entry	0.923	0.518
In quarter 1 after entry	0.879	0.583
In quarter 2 after entry	0.833	0.597
In quarter 3 after entry	0.708	0.593
In quarter 4 after entry	0.666	0.578
In quarter 5 after entry	0.677	0.577
In quarter 6 after entry	0.627	0.568
In quarter 7 after entry	0.575	0.571
In quarter 8 after entry	0.592	0.548
In quarter 9 after entry	0.609	0.550
In quarter 10 after entry	0.598	0.511
In quarter 11 after entry	0.616	0.538
In quarter 12 after entry	0.565	0.526
In quarter 13 after entry	0.588	0.559
In quarter 14 after entry	0.567	0.550
In quarter 15 after entry	0.600	0.606
In quarter 16 after entry	0.621	0.566

Note: Sample proportions. Quarterly employment rates are available as follows: the entire sample (cohorts 10-16) for quarters 1-5 after program entry; cohorts 10-15 for quarters 1-7 after entry; cohorts 10-14 for quarters 1-9 after entry; cohorts 10-13 for quarters 1-11 after entry; cohorts 10-12 for quarters 1-15 after entry; and cohort 10 for quarters 1-16 after entry.

Table 22 presents job retention outcomes for treatment and matched comparison cases, as available. Figures indicate that about four in every five participants (80.3%) were employed in both quarters 1 and 2 after entry, reflecting the paid training provided by the program during this period. Importantly, after the paid training period ended for most participants, many treatment cases were able to sustain employment. In fact, about 39.5% of all participants were employed in each of the six quarters after program entry and 31.2% were employed in each of the eight quarters after entry. Both job retention rates are higher compared to those of matched comparison cases.

Table 22: Job Retention, Treatment and Matched Comparison Group

	Treatment Group	Matched Comparison Group
Job Retention		
Employed in quarters 1-2	0.803	0.526
Employed in quarters 1-3	0.662	0.389
Employed in quarters 1-4	0.587	0.335
Employed in quarters 1-5	0.525	0.291
Employed in quarters 1-6	0.446	0.253
Employed in quarters 1-7	0.368	0.216
Employed in quarters 1-8	0.312	0.195
Job Retention in post-training period		
Employed in quarters 3-4	0.621	0.488
Employed in quarters 3-5	0.553	0.415
Employed in quarters 3-6†	0.472	0.349
Employed in quarters 3-7†	0.386	0.301
Employed in quarters 3-8††	0.316	0.269
Number of quarters employed		
In quarters 1-4 after entry	3.1 (1.3)	2.4 (1.5)
In quarters 5-8 after entry††	2.5 (1.5)	2.3 (1.6)
In quarters 1-8 after entry††	5.6 (2.5)	4.6 (2.6)

Note: Sample proportions for job retention; sample means with standard deviations in parenthesis for number of quarters employed. Measures are available as follows: the entire sample (cohorts 10-16) for quarters 1-5 after program entry; cohorts 10-15 for quarters 1-7 after entry; and cohorts 10-14 for quarters 1-8.

Measures of job retention in quarter 3 and later, confirm that treatment cases experienced high job retention rates even after the paid training had ended for most participants. Overall, 62.1% of treatment cases were employed in each of quarters 3-4 after entry and 31.6% were employed in each of quarters 3-8 after entry, compared with 48.8% and 26.9% of matched comparison cases, respectively. The lower panel of Table 22 indicates that program participants were employed, on average, 5.6 quarters of the 8 quarters after program entry, about a quarter higher than matched comparison cases.

Table 23 presents quarterly earning amounts for treatment and matched comparison cases for up to 16 quarters after program entry, as available. Treatment cases earned an average of $3,082 in quarter 1 after entry, which includes earnings from the paid training provided by the program. Average earnings for the treatment group declined in quarter 2 after entry and remained roughly similar for up to quarter 8 after entry. In quarters 9-16 after program entry, we observe an increasing trend. It appears that treatment cases had higher quarterly earnings than matched comparison cases through quarter 2 but differences seem to dissipate in subsequent quarters.

Table 23: Quarterly Earnings, Treatment and Matched Comparison Group

	Treatment Group	Matched Comparison Group
Quarterly Earnings ($)		
In quarter of entry	1,595 (2,481)	1,014 (1,910)
In quarter 1 after entry	3,082 (2,417)	1,981 (3,251)
In quarter 2 after entry	2,608 (2,279)	2,304 (3,609)
In quarter 3 after entry	2,676 (2,491)	2,713 (4,169)
In quarter 4 after entry	2,544 (2,874)	2,633 (4,188)
In quarter 5 after entry	2,781 (3,043)	2,876 (4,637)
In quarter 6 after entry	2,711 (3,412)	2,829 (4,515)
In quarter 7 after entry	2,629 (3,553)	3,203 (5,208)
In quarter 8 after entry	2,595 (3,653)	3,078 (5,194)
In quarter 9 after entry	3,157 (3,981)	3,359 (5,659)
In quarter 10 after entry	2,809 (3,893)	2,988 (5,113)
In quarter 11 after entry	3,335 (4,435)	3,612 (5,796)
In quarter 12 after entry	3,274 (4,435)	3,332 (5,445)
In quarter 13 after entry	3,625 (4,659)	3,842 (5,998)
In quarter 14 after entry	3,055 (4,293)	3,516 (5,587)
In quarter 15 after entry	3,901 (4,920)	4,364 (6,398)
In quarter 16 after entry	4,022 (5,252)	3,929 (5,899)

Note: Sample means with standard deviations in parentheses. Quarterly earnings are available as follows: the entire sample (cohorts 10-16) for quarters 1-5 after program entry; cohorts 10-15 for quarters 1-7 after entry; cohorts 10-14 for quarters 1-9 after entry; cohorts 10-13 for quarters 1-11 after entry; cohorts 10-12 for quarters 1-15 after entry; and cohort 10 for quarters 1-16 after entry.

These patterns are best summarized in Table 24, which presents measures of total earnings. Treatment cases had higher earnings in quarters 1-4 after program entry (the period which includes the paid training provided by the program) but differences in total earnings dissipated over time.

Table 24: Total Earnings, Treatment and Matched Comparison Group

	Treatment Group	Matched Comparison Group
Total Earnings ($)		
In quarters 1–4 after entry	10,910 (8,057)	9,631 (12,733)
In quarters 1–8 after entry	21,452 (17,425)	21,650 (26,578)
In quarters 1–12 after entry	35,161 (32,942)	35,116 (40,029)
In quarters 1–16 after entry	52,114 (53,975)	51,336 (55,875)

Note: Sample means with standard deviations in parentheses. Total earnings are available for: the entire sample (cohorts 10-16) in quarters 1-4 after program entry; cohorts 10-14 in quarters 1-8 after entry; cohorts 10-12 in quarters 1-12 after entry; and cohort 10 in quarters 1-16 after entry.

4.4.3. Program Effects

Since matching was effective in eliminating differences in baseline characteristics and prior outcomes, we estimate average treatment effects by simply comparing mean outcomes between the treatment and matched comparison group. Table 25 presents the program's average treatment effects on quarterly employment rates. The program had a large effect on employment in the quarter of entry and in quarters 1-2 after entry, reflecting in large part the period when the program offered free training to participants. In the quarter of entry, the program increased employment by 41.5 percentage points, an 82% increase compared with the matched comparison group mean. Effects in quarters 1 and 2 after entry were 51% and 40% respectively.

Effects on employment declined in quarters 3-5 but remained positive and statistically different from zero, in the 15-20% range. Starting in quarter 6 after program entry and through quarter 16, effects on employment were generally positive but, with the exception of the quarter 10 effect, lacked statistical significance.

Table 25: Average Treatment Effects on Employment

	Average Treatment Effect	Effect as Percentage of Matched Comparison Group Mean
Employment		
In quarter of entry	+0.415 (0.021)***	+82%
In quarter 1 after entry	+0.296 (0.031)***	+51%
In quarter 2 after entry	+0.236 (0.032)***	+40%
In quarter 3 after entry	+0.116 (0.043)**	+20%
In quarter 4 after entry	+0.088 (0.044)**	+15%
In quarter 5 after entry	+0.101 (0.043)**	+18%
In quarter 6 after entry	+0.060 (0.045)	+11%
In quarter 7 after entry	+0.004 (0.046)	+1%
In quarter 8 after entry	+0.043 (0.045)	+8%
In quarter 9 after entry	+0.048 (0.044)	+9%
In quarter 10 after entry	+0.087 (0.049)*	+17%
In quarter 11 after entry	+0.078 (0.049)	+14%
In quarter 12 after entry	+0.040 (0.057)	+8%
In quarter 13 after entry	+0.029 (0.056)	+5%
In quarter 14 after entry	+0.018 (0.063)	+3%
In quarter 15 after entry	-0.006 (0.064)	-1%
In quarter 16 after entry	+0.054 (0.077)	+10%

Note: Average treatment effect column reports the average treatment effect with bootstrap standard errors in parentheses. Right column reports the average treatment effect as a percentage of the matched comparison group mean. ***, **, * = statistically significant at the 10, 5, 1 percent level.

Table 26 presents the program's average treatment effects on measures of job retention outcomes. The program had large, statistically significant effects on job retention based on quarter 1 employment. In particular, the program increased the likelihood that participants would be employed in both quarters 1 and 2 after entry by 27.7 percentage points, a 53% effect compared with the matched comparison group mean. Effects on job retention remained high through quarter 8 after program entry, ranging from 60% to 80%.

Table 26: Average Treatment Effects on Job Retention

	Average Treatment Effect	Effect as Percentage of Matched Comparison Group Mean
Job Retention		
Employed in quarters 1-2	+0.277 (0.044)***	+53%
Employed in quarters 1-3	+0.272 (0.044)***	+70%
Employed in quarters 1-4	+0.252 (0.044)***	+75%
Employed in quarters 1-5	+0.234 (0.045)***	+80%
Employed in quarters 1-6	+0.193 (0.046)***	+76%
Employed in quarters 1-7	+0.152 (0.045)***	+70%
Employed in quarters 1-8	+0.116 (0.043)***	+60%
Job Retention in post-training period		
Employed in quarters 3-4	+0.133 (0.044)***	+27%
Employed in quarters 3-5	+0.138 (0.045)***	+33%
Employed in quarters 3-6	+0.123 (0.046)***	+35%
Employed in quarters 3-7	+0.085 (0.045)*	+28%
Employed in quarters 3-8	+0.043 (0.045)	+16%
Number of quarters employed		
In quarters 1-4 after entry	+0.74 (0.12)***	+31%
In quarters 5-8 after entry	+0.21 (0.14)***	+9%
In quarters 1-8 after entry	+0.96 (0.23)***	+20%

Note: Average treatment effect column reports the average treatment effect with bootstrap standard errors in parentheses. Right column reports the average treatment effect as a percentage of the matched comparison group mean. ***, **, * = statistically significant at the 10, 5, 1 percent level.

Effects on job retention measures starting in quarter 3 (in the period after the paid training had ended for most participants) provide additional insights. As seen in Table 26, the program increased the likelihood that participants would be employed in each of quarters 3-6 by 12.3 percentage points (35%). This effect declined over time but remained positive and significant through quarter 8 after entry. Effects on number quarters employed corroborate the program's positive effects on job retention. In particular, program participants were employed for nearly a quarter longer (0.96 quarters) than matched comparison cases, which represents a 20% increase.

Table 27 presents average treatment effects on quarterly earnings. Results show that the program had positive effects on earnings in the quarter of entry and in quarter 1 after entry, the period when the Foundations paid training was available to all participants. The program effect was $581 (57%) in the quarter of entry and $1,101 (56%) in quarter 1 after entry. Effects on earnings dissipated in subsequent quarters and were about as likely to be positive as they were to be negative, indicating that the program had no earnings effects after the paid training period.

Table 27: Average Treatment Effects on Quarterly Earnings

	Average Treatment Effect	Effect as Percentage of Matched Comparison Group Mean
Earnings		
In quarter of entry	+581 (149)***	+57%
In quarter 1 after entry	+1,101 (306)***	+56%
In quarter 2 after entry	+305 (221)	+13%
In quarter 3 after entry	-37 (234)	-1%
In quarter 4 after entry	-89 (247)	-3%
In quarter 5 after entry	-95 (269)	-3%
In quarter 6 after entry†	-118 (313)	-4%
In quarter 7 after entry†	-584 (318)*	-18%
In quarter 8 after entry††	-472 (326)	-15%
In quarter 9 after entry††	-201 (358)	-6%
In quarter 10 after entry†††	-180 (375)	-6%
In quarter 11 after entry†††	-277 (435)	-8%
In quarter 12 after entry*	-59 (505)	-2%
In quarter 13 after entry*	-217 (547)	-6%
In quarter 14 after entry**	-461 (568)	-13%
In quarter 15 after entry**	-463 (646)	-11%
In quarter 16 after entry***	92 (1,004)	-2%

Note: Average treatment effect column reports the average treatment effect with bootstrap standard errors in parentheses. Right column reports the average treatment effect as a percentage of the matched comparison group mean. ***, **, * = statistically significant at the 10, 5, 1 percent level.

Results for total earnings, presented in in Table 28, essentially confirm this conclusion. The program had positive and statistically significant effects on total earnings in quarters 1-4 after entry (a period that includes the paid training) but effects are statistically zero in quarters 1-8, 1-12, and 1-16.

Table 28: Average Treatment Effects on Total Earnings

	Average Treatment Effect	Effect as Percentage of Matched Comparison Group Mean
Total Earnings		
In quarters 1-4 after entry	+1,280 (779)**	+13%
In quarters 1-8 after entry	-17 (1,649)	-<1%
In quarters 1-12 after entry	+45 (3,951)	+<1%
In quarters 1-16 after entry	+778 (10,463)	+2%

Note: Average treatment effect column reports the average treatment effect with bootstrap standard errors in parentheses. Right column reports the average treatment effect as a percentage of the matched comparison group mean. ***, **, * = statistically significant at the 10, 5, 1 percent level.

5. Summary of Findings

PowerCorpsPHL is a multi-faceted program that addresses important needs within the City of Philadelphia, including environmental stewardship initiatives, youth violence prevention and workforce development. By providing basic job readiness and career training services to the City's disconnected youth, including those reentering the labor market following incarceration, the program seeks to improve participants' vocational skills and access to in-demand environmental-related jobs in the energy, infrastructure and utility industries. In turn, participants are expected to achieve economic self-sufficiency by obtaining sustainable jobs with living wages.

Analysis of program data, merged with Criminal Justice System data and a web-based participant survey, provides three key findings. First, the program was successful in retaining a large number of participants and helping participants to obtain industry-recognized credentials.

Nearly half of all participants completed the Foundations phase of the program and the majority of these enrolled in the subsequent Career Training phase. Moreover, most participants earned at least one certification during their time of enrollment, with one in every four obtaining two or more certifications. Given the importance of industry-recognized credentials in allowing participants to demonstrate their knowledge and skills, this level of credential attainment could be an important factor in helping participants succeed in the labor market.

Second, the program is associated with low post-entry involvement of participants with the criminal justice system. Overall, only 6.4% of participants had a court case for an offense committed within 12 months of program entry and about half of these (3.3% of all participants) were convicted for an offense committed within 12 months of program entry. Participants with a criminal record were much more likely than those with no criminal record to have an active court case or get convicted after program entry. However, for those with a criminal record, the post-program involvement with the criminal justice system was quite limited. Among participants with a criminal record, only about 13.7% had a court case and 7.3% were convicted of an offense convicted within 12 months of program entry. These figures indicate that program participation may be associated with reductions in recidivism among participants.

Third, survey respondents noted high levels of program satisfaction and perceptions and feelings related to self-efficacy and job-readiness as a result of participating in the program. Importantly, key program components of paid training, flexibility to enroll and complete the program when able, and career coaching and job readiness training were most frequently indicated as important or very important in helping participants with program completion. Over half of survey responders indicated that they were either currently employed (55%) and almost one in five (17%) that they were enrolled in an educational or training program. Employment held by responding participants since exiting the program was more often full time and most often in jobs paying over $15 per hour. These findings provide a positive assessment of the program, but should be interpreted with caution given the low survey response rates.

The quasi-experimental impact study provides evidence that the program improved participant labor market outcomes after program entry. The program had positive effects on employment in the entire 16-quarter follow-up period. Effects on employment were highest in the quarter of program entry and in the first two quarters after entry, when paid training in the Foundations phase of the program was available to all participants. Employment effects started to decline in quarter 3 after entry but remained positive and statistically significant through at least quarter 5. Employment effects remained generally positive from quarter 6 and up to quarter 16 after program entry, although with one exception they lacked statistical significance.

Importantly, the program increased job retention both in the eight-quarter period following program entry (which includes the paid training period) and in quarters 3 through 8 (after the paid training had ended for most participants). As a result of the positive program impacts on employment and job retention, program participants were employed by nearly one full quarter longer than non-participants in the first eight quarters after entry. Effects on earnings are consistent with these findings. The program increased earnings in the first four quarters after program entry by about 13% but earnings effects dissipated thereafter.

Overall, the results of this evaluation provide considerable support to the view that the PowerCorpsPHL program was successful in serving disadvantaged youth and young adults in the Philadelphia area. During the study period, the program attracted 362 participants ages 18 to 28 years old, the majority of whom were black men. Notably, more than a third of participants had a criminal record. The program achieved high completion and retention rates, with nearly one in every six participants completing the Foundations phase of the program and nearly four in every six of those who completed Foundations enrolling in the Career Training phase. One in every five participants completed both program phases and nearly two thirds obtained at least one professional certification. The quasi-experimental impact results indicate that the program increased participant employment upon entry, which helped participants establish a consistent attachment to the workforce and experience a short-term increase in earnings.