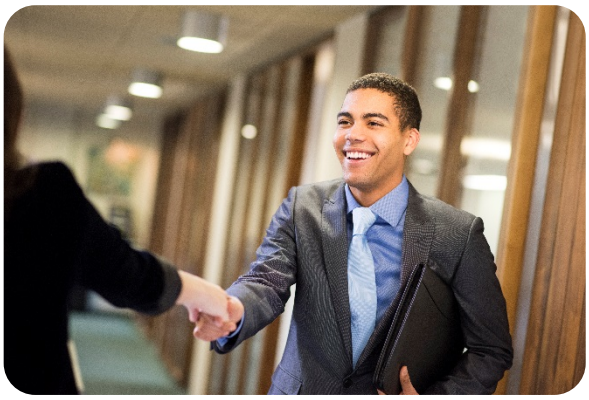

Still Bridging the Opportunity Divide for Low-Income Youth:

Year Up's Longer-Term Impacts

OPRE Report 2021-56

April 2021

PACE
Pathways for Advancing Careers and Education

Still Bridging the Opportunity Divide for Low-Income Youth: Year Up's Longer-Term Impacts

A Pathways for Advancing Careers and Education (PACE) / Career Pathways Intermediate Outcomes Study Publication

OPRE Report 2021-56

April 2021
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Submitted to:
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Office of Planning, Research, and Evaluation
Administration for Children and Families
U.S. Department of Health and Human Services

Contract Number: HHSP23320095624WC, Task Order HHSP23337019T

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This report is in the public domain. Permission to reproduce is not necessary. Suggested citation: Fein, David, Samuel Dastrup, and Kimberly Burnett. 2021. *Still Bridging the Opportunity Divide for Low-Income Youth: Year Up's Longer-Term Impacts,* OPRE Report 2021-56. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
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Acknowledgements

This second impact report on Year Up from PACE benefited from outstanding contributions of many people and organizations. Above all, we are grateful to Year Up's national leaders for their strong continuing support for this study. We thank especially Year Up founder Gerald Chertavian and evaluation leads Garrett Warfield, Jessica Britt, Raphi Rosenblatt, and Sara Enright. We also are indebted to the many local staff, young adult study participants, and Year Up partner organizations who shared their time and talents with the evaluation team.

The Office of Planning, Research, and Evaluation (OPRE) of the Administration for Children and Families (ACF) at the U.S. Department of Health and Human Services (DHHS) has provided crucial leadership, as well as financial support, as PACE's primary sponsor. At OPRE we thank especially our current PACE Project Officers—Nicole Constance and Amelia Popham—and the following current and past OPRE staff: Naomi Goldstein, Mark Fucello, Nicole Deterding, Erica Zielewski, and Brendan Kelly. Additional financial support from the Open Society Foundations helped to ensure the success of expanded recruitment for the Year Up study. Grants to Year Up from the Social Innovation Fund (SIF) to New Profit and Venture Philanthropy Partners also helped to cover evaluation-related activities.

At Abt, a large and capable team has worked tirelessly to ensure this study's success. Above all, we thank PACE's project director Larry Buron, director for data analysis Dave Judkins, and project quality advisor Jacob Klerman for their outstanding contributions to the Year Up report. Many other staff also have made essential contributions to this and prior stages of the project, including: Danielle Bartolanzo, Gabriel Durham, Whitney Engstrom, Karen Gardiner, Jill Hamadyk, Nayara Mowry, Bry Pollack, Howard Rolston, Azim Shivji, Charmayne Walker, and Doug Walton.

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Overview

This report presents further evidence on the impacts of Year Up, a national training program for young adults aged 18-24 with high school credentials. Specifically, it extends earlier analyses to cover a three to five-year follow-up period and provides a cost-benefit analysis.

Run by an organization of the same name, Year Up is a national program operating from offices in nine major cities. The full-time, one-year program serves young adults who are disconnected from work and school, or at risk of disconnection, and are motivated to do well in the program. Year Up is divided into two six-month phases: an initial training phase ("Learning and Development," or "L&D"), followed by an internship phase. It provides three main categories of services:

(1) **Instruction** during the L&D phase in technical skills in selected occupations (IT, quality assurance, financial operations, project management, and customer service); business communication (written and spoken English); and professional skills (behaviors for success at work).

(2) Wrap-around **support services** during both phases, applying a "high expectations, high support" philosophy. Key strategies include behavior contracts (specifying expected professional behaviors), financial stipends, social support from staff and peers organized as learning communities, staff advisors and social workers, and outside mentors.

(3) Strong **connections to employment**, including a focus on work-based learning during L&D, six-month internships at local employers, and intensive post-program employment services.

Year Up is one of nine programs included in the Pathways for Advancing Careers and Education (PACE) project sponsored by the Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services. PACE is testing different strategies for helping economically disadvantaged adults access career pathways in growing occupations. This report (a product of the Career Pathways Intermediate Outcomes Study) extends follow-up to a period centering on three years and extending to five years for some outcomes. A future report (under the Career Pathways Long-term Outcomes Study) will cover an even longer follow-up period.

Purpose

Year Up's mission is to close the "Opportunity Divide" – the gap between millions of disadvantaged young adults and U.S. firms seeking to find well-qualified entry-level workers in technical fields. The program's twin goals are to help young adults access well-paying careers with good potential for upward mobility and address shortages of needed workers in growing occupations. The purpose of the research undertaken here was to evaluate whether Year Up was successful in increasing earnings and related outcomes, and whether its benefits exceeded its costs.

Research Questions

An earlier PACE report (Fein and Hamadyk 2018) covered impacts for up to three follow-up years and ended with a series of questions about longer-term impacts. To paraphrase, these questions asked:

- Would the program's large positive earnings impacts persist?

- Would further impacts on post-secondary education and training develop in the longer-term?
- Would there be effects in other life domains?
- And would Year Up's overall benefits to society exceed its costs?

Key Findings

This report begins to address the above questions. Its principal findings include the following:

- **Year Up's large positive earnings impacts persisted undiminished to the end of the five-year follow-up period.**

The impact on average quarterly earnings in follow-up Quarters 12 and 13 (this report's confirmatory outcome) was large, at $1,857, and statistically significant. This impact represents a 38 percent increase over average earnings for the control group ($4,926). Impacts of about $2,000 per quarter extended to the end of this report's five-year follow-up period.

- **The study did not detect an impact on college enrollment after the second follow-up year.**

From Year 3 on, college enrollment rates were virtually identical in the treatment and control groups. At the time of the three-year follow-up survey, few members of either group had earned an associate degree or higher, although the fraction was lower for treatment (4 percent) than control (8 percent) group members.

- **Three-year survey data show signs of impacts in other life domains, but such effects were not widespread.**

Findings from the three-year survey show reductions in public benefit receipt, debt, and financial hardship. Average household income did not increase—perhaps because increased earnings both reduced some households' public benefit eligibility and allowed some young adults to live independently. Year Up had a few small effects on living arrangements, but no impacts on several psycho-social outcomes.

- **Despite its high cost, Year Up's benefits to society exceeded its costs.**

Results show that Year Up was financially worthwhile for society overall, as well as for participants. The net gain to society was $15,349 per participant—the difference between a net benefit of $38,484 and a net cost of $23,135. These estimated benefits and costs imply that society gained $1.66 for every $1.00 spent on Year Up.

Methods

The evaluation used an experimental design, which randomly assigned 2,544 eligible young adults to either a treatment group that was encouraged to enroll in Year Up or a control group that was not allowed to participate. Researchers measured outcomes for both groups over time and compared average outcomes over successive follow-up intervals. The main data sources for measuring outcomes were: (1) a follow-up survey conducted three years after random assignment and (2) administrative records from the National Directory of New Hires (quarterly wage records) and the National Student Clearinghouse (college enrollment and other transcript records) extending for up to five years after random assignment. The study also included a cost-benefit analysis.

Executive Summary

This report provides evidence on the longer-term impacts of Year Up, a national training program for young adults with high school credentials. It covers a three- to five-year follow-up period, extending findings from an earlier report (Fein and Hamadyk 2018) showing large, positive earnings impacts in the first three years after program intake.

Abt Associates is evaluating Year Up as part of the Pathways for Advancing Careers and Education (PACE) project.[1] Funded by the Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services, PACE is testing nine programs that used different strategies for helping economically disadvantaged adults access career pathways in growing occupations. Initiated in 2007, PACE is the first large-scale, multi-site experimental evaluation of career pathways strategies.

The Year Up evaluation includes implementation, impact, and cost-benefit studies. For the impact study, the Abt team worked with local Year Up staff to randomly assign 2,544 young adults to either a treatment group (that was encouraged to enroll in the program) or a control group (that could not enroll). This report extends the impact analysis to five years and assesses costs and benefits over the same period. A planned future report will cover up to seven years of follow-up.

This report's findings show that Year Up continued to generate quarterly earnings increases of nearly $2,000 through the end of the five-year analysis period. Findings from the cost-benefit study show that the program's total benefits to society at large over the same period exceeded total costs by $15,349 per participant, representing a return of $1.66 for every $1.00 spent on Year Up.

Program Overview

Year Up serves economically disadvantaged urban young adults ages 18 to 24 who have a high school diploma/equivalent, who are motivated, and who, with assistance, can overcome challenges and successfully enter careers in fast-growing technical occupations.[2] PACE is testing Year Up's original model—which it calls the "core program"—a free-standing program operating in nine urban areas around the U.S.

During the first six months of the program—the "Learning and Development Phase"—participants attend courses at Year Up full-time. The focus of technical training varies by office and cohort. Fields include information technology (IT, the most common emphasis), business operations, financial operations, software development, and sales and customer support. General skills training puts a strong emphasis on professional (i.e., "soft") skills and written and spoken English (with a strong focus on business communications). Year Up sites work with local partner colleges to arrange for college credit for Year Up coursework.

Year Up's "high support, high expectations" model provides extensive services and sets high standards for professional behavior. Each incoming cohort of young adults is organized into groups of about 40 participants and staff called "learning communities" to foster supportive social connections. All participants receive advising from Year Up staff members, and every

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1 For more information on PACE, go to https://www.acf.hhs.gov/opre/project/pathways-advancing-careers-and-education-pace-2007-2018.

2 See Chertavian (2012) for an account of Year Up's origins and early development.

staff member is expected to serve as a student advisor/coach in addition to other duties. Participants also receive mentoring from outside professionals working in related occupations. Each local office maintains a team of social workers who provide direct services and referrals to help participants address varied life challenges.

Participants receive weekly stipends (typically $150 during the first half and $220 during the second half of the program) to help cover transportation and other program-related expenses. They sign a formal contract specifying standards for professional behavior. Infractions trigger stipend reductions and can lead to dismissal from the program.

In the second half of the year—the "Internship Phase"—participants intern at local firms, often Fortune 500 companies. They work at their internship sites full-time for four-and-a-half days a week. Participants return to Year Up each week for a half-day skills workshop during which they share their internship experiences and plan for education and careers after graduation from the program. Towards the end of internships, the emphasis on job search and placement intensifies. Active efforts to support job search and placement continue for up to four months after graduation.

At $28,290 per participant, the program is among the most expensive workforce programs for economically disadvantaged youth and adults. To finance these costs, Year Up has implemented an innovative strategy: employer payments for interns cover 59 percent of costs. Grants from foundations and private donors cover most of the remainder (39 percent), and reliance on governmental funding is minimal.

Earlier Findings on Program Implementation

Analyses of field interviews and program data in Fein and Hamadyk (2018) show that local Year Up offices fully implemented all program components and generated strong performance on related metrics. For example, all offices met the study's requirement for expanding recruitment by 50 percent for PACE. They did so while maintaining applicant quality, admitting only one in six applicants as in the past. Nearly all (96 percent) treatment group members actually enrolled in training.

Retention was high: 75 percent of the treatment group (78 percent of those enrolling) completed the program. Most of the participants who dropped out did so during the initial six months. The program placed 99 percent of those completing the Learning and Development phase in internships. Year Up received an average of $22,404 per intern from employers.

Staff diligently enforced Year Up's contract: 96 percent of enrollees received at least one infraction, and 45 percent received 10 or more infractions.[3] The average treatment group member nonetheless received $7,142 in stipends during the program (81 percent of the maximum possible amount).

The Year Up Evaluation

The study sample includes a full year's worth of approved applicants in each of the program's eight local offices.[4] Random assignment ran on a staggered basis across offices between January 2013 and August 2014 and created two groups: a treatment group that was

[3] Although 10 infractions theoretically could generate enough loss of contract points to trigger program dismissal, participants have opportunities to remedy infractions by meeting program expectations.

[4] Operations in two of Year Up's nine urban locations are administered as a single office.

encouraged to enroll in Year Up and a control group that could not access the program but could access other services available in the community. Baseline statistics show that Year Up reached its target population of urban young adults and that random assignment produced very similar treatment and control groups.

Analyses use data from a three-year follow-up survey and two administrative data systems. The survey obtained response rates of 78 and 73 percent for treatment and control group members, respectively. Administrative data include up to five years of quarterly earnings records from the National Directory of New Hires (NDNH) and college records from the National Student Clearinghouse (NSC). Administrative data extend to mid-2019 and thus do not cover the economic downturn resulting from the coronavirus (or "COVID-19") pandemic. Future reports will extend follow-up into the post-onset period.

Key Findings

An earlier PACE report (Fein and Hamadyk 2018) covered impacts for up to three follow-up years and ended with a series of questions about longer-term impacts. To paraphrase, these questions asked: Would the program's large positive earnings impacts persist? Would impacts on post-secondary education and training emerge? Would there be effects in other life domains? And would Year Up's overall benefits to society exceed its costs? Findings in this report begin to address these questions.

- **Year Up's large positive earnings impacts persisted undiminished to the end of the five-year follow-up period.**

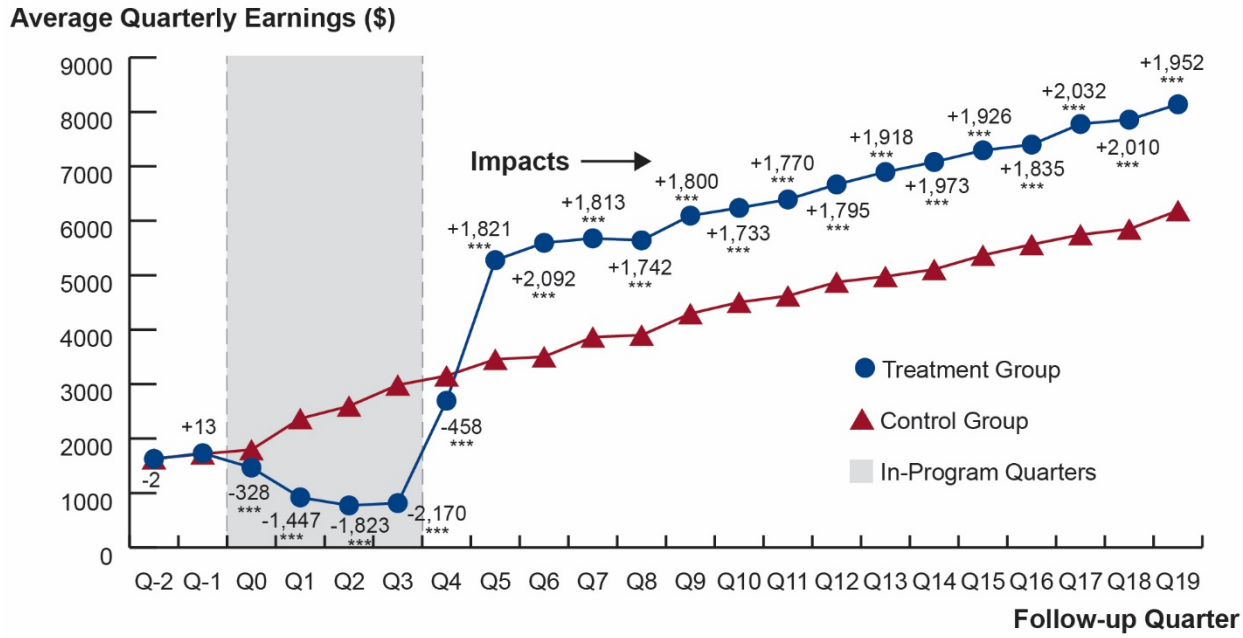
The impact on average quarterly earnings in follow-up Quarters 12 and 13 (this report's **confirmatory outcome**) was large, at $1,857, and statistically significant. This impact represents a 38 percent increase over average earnings for the control group ($4,926). Impacts of about $2,000 per quarter extended to the end of this report's five-year follow-up period (see Exhibit ES-1).

Year Up's impacts continue to rank among the largest reported from randomized controlled trials of training programs for low-income adults to date. Its $7,894 impact on annual earnings in Year 5 compares favorably with the largest reported impacts in other studies—notably, a $6,281 impact for Per Scholas[5] and a $5,239 impact for Project QUEST.[6]

[5] This $6,281 impact, highlighted in Schaberg and Greenberg (2020), is Per Scholas's estimated impact for calendar year 2018—approximately the fourth follow-up year for this study (Table 2.1). Impacts analyzed strictly by follow-up year peak at $5,384 in the third follow-up year and decline thereafter (Appendix Table A.2).

[6] This figure is the impact in follow-up Year 9, the largest impact reported for Project QUEST (Roder and Elliot 2019). Although positive for the overall sample, Project QUEST's impact for young adults aged 18-24 was negative (-$4,063) and statistically different from impacts for older adults.

Exhibit ES-1: Impact on Average Earnings in Successive Follow-Up Quarters



Source: Quarterly wage records obtained in a match to the National Directory of New Hires for 1,638 treatment and 858 control group members.
Note: Statistically significant in a two-tailed test: * at the 10-percent level, ** at the 5-percent level, *** at the 1-percent level.

Large earnings impacts appeared for every subgroup examined and for all eight local Year Up offices. Although substantial for all subgroups and offices, the size of impacts did vary for some characteristics in ways that closely resembled the earlier subgroup findings (Fein and Hamadyk 2018). For example, impacts on quarterly earnings were larger for young adults receiving mostly A's or B's in high school ($2,178) than for those receiving mostly C's or below ($1,388), and larger for those who identify as White ($2,931) than for those who identify as Black ($1,570). Variation in impacts across the eight local offices (from $956 to $4,811, with most offices in the $1,348 to $1,807 range) also suggests that local conditions might matter.[7]

The earnings gains stemmed mostly from increases in wages ($3.35/hour higher, a 22 percent increase) and to a lesser degree from hours worked by those employed (2 hours/week higher, an 8 percent increase). The program had at most small effects on the fractions employed.[8] There was a marked shift towards jobs in Year Up target occupations. Of employed treatment group members, 31 percent were working in the IT sector, and 21 percent were working in the business/financial sector. The corresponding control group percentages were 5 and 14 percent, respectively.

---

7 Differences across the eight offices were statistically significant (p<.01) in a global test. Possible explanations include differences in local job markets, program implementation, or both. The number of offices was too small to assess such factors statistically.

8 The three-year follow-up survey (the source for wage and hour impacts) showed no statistically significant difference in employment rates for treatment (73 percent) and control (72 percent) group members. NDNH wage records show small positive employment impacts in Year 2 (4-5 percentage points) and smaller impacts thereafter.

- **The study did not detect an impact on college enrollment in Years 3-5, but it did find a small reduction in receipt of an associate degree or higher.**

During the study period, Year Up partnered with local colleges to secure credits for program courses.[9] Through these arrangements, the program boosted average full-time equivalent college enrollment by about two months above the control group level in follow-up Year 1. After Year 1, when the main Year Up program was over, most treatment members found full-time jobs and left school. In Year 2, fewer treatment than control group members were enrolled in postsecondary education, and from Year 3 on the two groups had similar enrollment rates. These findings are consistent with the program's logic model, which mostly emphasizes transitions to full-time employment after graduation.

At the time of the three-year follow-up survey, although few members of either group had earned an associate degree or higher, treatment group members were less likely to have earned a degree than control group members (four vs. eight percent, a difference that is statistically significant at $p<.01$). Although Year Up's earnings impacts were large and enduring, they did not grow much after Year 2. Increasing the size of impacts over time may require doing more to foster additional education and training after the program.

- **Three-year survey data show signs of impacts in other life domains, but effects were not widespread.**

The study's theory of change posits that increases in career-track employment and earnings will have radiating effects in other domains. This report found effects on some financial and family formation outcomes and no impacts on psycho-social outcomes.

Findings from the three-year survey show reductions in public assistance receipt, debt, and financial hardship. Average household income did not increase—perhaps because increased earnings reduced some households' public assistance eligibility and allowed some young adults to live independently.

Year Up had several small effects on living arrangements. It reduced slightly (by four percentage points) the fraction of the overall sample that was living with a spouse as of the three-year interview. Among women—but not among men—the program increased the fraction who were not living with either a spouse, partner, or child by 10 percentage points.[10] Year Up also may have reduced the fraction of young men living with their parents.[11]

Year Up's logic model posits recursive effects between the psycho-social skills it targets directly and improved economic outcomes. That is, initial increases in skills would help to improve career opportunities, and experience in professional settings would support further skill development.

---

9 Year Up discontinued the local college partnership component to its stand-alone program after the PACE period. It now grants college credit for program coursework through the American Council on Education.

10 This gender difference in impacts for this joint outcome is statistically significant ($p<.05$).

11 As discussed in Chapter 5 in the body of this report, the 7-percentage point reduction in living with parents for men is statistically significant ($p<.05$), but the gender difference for this outcome is not statistically significant. Thus, although the results suggest an effect for men, the finding could be spurious. It is nonetheless consistent with findings from basic research on income and living arrangements of young men and women and with results for another PACE site, VIDA (Rolston et al. forthcoming).

The findings show no impacts on several psycho-social outcomes measured; namely, grit, core self-evaluation, and social support. This result is somewhat unexpected given the program's immersive approach to life skills training. Possible explanations include the choice of specific skills to measure in this study and biases in self-report measures of psycho-social skills.

- **Year Up's benefits to society exceeded its costs. Findings from the cost benefit study show that society gained $1.66 for every $1.00 spent on Year Up.**

Results show that Year Up was financially worthwhile for society overall, as well as for participants. The net gain to society was $15,349 per participant—the difference between a net benefit of $38,484 and a net cost of $23,135. These estimated benefits and costs imply that society gained $1.66 for every $1.00 spent on Year Up.

Key costs in the cost-benefit analysis include spending on Year Up services[12] and on other education and training services and related supports. Key benefits include young adults' earnings; related (e.g., fringe) benefits and taxes; Year Up stipends; and financial returns to partner firms that hired program interns after Year Up.

The size of the net gain to society from Year Up is sensitive to the assumed rate of return to employers from their payments to Year Up for interns. Employers could derive a variety of financial benefits, including the value of interns' work, savings compared to other hiring methods, and improved sales due to enhanced perceptions of companies as socially responsible. Viewing employers as pure profit maximizers would suggest that returns to firms (and thus society at large) could exceed the value of their investments. This view assumes that employers would not spend resources on interns unless doing so increases profits. On the other hand, to the degree that employer participation is motivated by altruism, returns might fall below the amounts spent.

Since measuring actual returns to employers was beyond the scope of this study, we selected a 50 percent return on employers' average payment per treatment group member ($16,118) as the base case for the main cost-benefit estimates.[13] This figure seemed consistent with the emphasis on dual motives – financial and social – discerned in interviews with a dozen employers.[14] For example, in explaining his firm's motives, one employer led with the importance of helping the local community but went on to say "We're an investment company. If it wasn't worth it, we wouldn't do it."

The analysis also estimated net gains to society with assumed employer returns of zero and 115 percent (the latter assuming a 15 percent gain in value to the employer over alternative uses of the same dollars). Compared to net gains to society of $15,349 per participant for the base case, the estimated net gains to society are $7,290 and $25,826, respectively (see left-

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[12] As reported in the body of this report, Year Up financial data show an average cost of $28,290 per participant for program services. The net cost is somewhat lower in the cost-benefit analysis, mainly because the analysis also considers costs for non-Year Up training that treatment and control group members received.

[13] The average employer payment per intern was $24,700. The $16,118 figure averages this amount over the entire treatment group—including participants who dropped out before reaching the internship phase.

[14] The research team conducted telephone interviews with 12 employers for the implementation study. For results, see Fein and Hamadyk (2018).

Exhibit ES-2: Net Gain to Society as a Whole per Participant

and right-most bars in Exhibit ES-2).[15] The first estimate shows that society would more than break even if Year Up was entirely government- and foundation-funded (and employers did not benefit). The second estimate shows that societal benefits will be quite large when internship investments are profitable for companies—the scenario underlying Year Up's recent work with employers to provide high-return "customer solutions" (Fein 2016, Fein and Hamadyk 2018).

The estimates understate overall societal benefits for two reasons. First, results reflect benefits and costs only for an initial five-year follow-up period. The persistence of large earnings impacts through the end of this period suggests that planned analyses of life-time benefits will show larger net benefits. Second, the analysis does not include the monetary value of a number of potential societal benefits, such as improved health, reduced crime, and improved well-being for participants' children. Though plausible, the size of such impacts is uncertain.

Implications

Year Up's success in increasing earnings indicates that efforts to expand the program deserve serious attention. Two important questions arise in connection with expansion. First, which of the program's ingredients will be critical to include when serving larger numbers of the kinds of young adults Year Up already targets? Second, what adaptations might be needed to extend services beyond the current target population?

- **Program stakeholders identified four major features of Year Up as likely to explain its impacts.**

Although PACE was not designed to measure the effects of individual program components, interviews with program stakeholders conducted early in the follow-up period explored views on the program ingredients they saw as critical to Year Up's success (Fein and Hamadyk 2018).

[15] Monte Carlo simulations show very high probabilities that all three estimates exceeded $0: 96, 100, and 100 percent for assumed employer returns of 0, 50, and 115 percent, respectively.

The interviews involved Year Up staff, participants, and college and employer partners. Responses suggest an important role for the following four components:

1. **Year Up's intensive approach to recruitment and applicant screening.** Admission to Year Up involves multiple screening steps, during which admissions staff members assess applicants for motivation and ability to benefit. Informants stressed that effective screening helps to ensure that young adults thrive and grow in the program and that employers have positive experiences with interns, offer jobs to a good number, and continue to participate in the program. An important question addressed later in this section is to what degree a requirement for stringent screening limits possibilities for serving a wider population of young adults.
2. **Robust services focused on developing skills—particularly soft skills—and retention during the initial six-month Learning and Development phase.** Year Up participants receive multiple and intensive services, including classes in "professional" (i.e., soft) skills, college-level English, and technical skills complemented by extensive supports and rigorous behavior requirements. Many informants cited Year Up's emphasis on professional skills as particularly important.
3. **Internships as critical to building skills, connecting young adults with potential employers, and financing the program.** Year Up internships are unusual for their length, exposure to professional occupations (often at Fortune 500 companies), and careful monitoring and supervision. Employer's payments to Year Up attests to the value they derive from the program. These payments also represent an important innovation in program financing and help to keep the program focused on employers' needs.
4. **Strong, innovative organizational qualities and practices.** In operating the program, Year Up leaders consciously cultivate an entrepreneurial outlook and apply business practices and tools in producing and monitoring desired performance outcomes. They put a strong emphasis on articulating the program's mission and values and on mobilizing key stakeholders – staff, participants, and partner organization – to work towards these values.[16]

In addition to highlighting the role of each of these components in its own right, many interview informants expressed the view that *all* of Year Up's components matter. The underlying thesis is that program components are mutually reinforcing. That is, positive outcomes arise from careful selection of young adults who can benefit, effective skills training and supports reinforced by high expectations, and strong connections with employers. Strong connections with employers require providing them with well-prepared interns.

- **Efforts to expand Year Up also must consider whether future versions of the program also will need to be full-time.**

Another potentially important design feature is that, like a number of other highly effective programs, Year Up requires full-time participation.[17] Especially given skill gaps and competing stresses facing the young adults it targets, both Year Up's intensity and the total hours it entails may be critical to creating a program context conducive to growth. A downside is that young

[16] See Fein (2016) and Fein and Hamadyk (2018) for discussion of Year Up's organizational culture and practices.

[17] Other effective programs requiring full-time participation include Per Scholas (Schaberg 2017, Schaberg and Greenberg 2020), Project QUEST (Roder and Elliot 2019), and ASAP (Scrivener et al. 2015).

adults who need the income from a full-time job may not be willing to cut back on work hours to commit to a full-time program for an entire year—even with Year Up-level stipends.

Tests of shorter versions of the program and of varying mixes of onsite and virtual training would help address possibilities for making the program more feasible for young adults who need to work. Year Up already was piloting adaptations aimed at supporting young adults who cannot commit to full-time, in-person training prior to the COVID-19 pandemic in early 2020. They have since intensified experimentation with shorter and hybrid formats.

- **Subgroup findings suggest some room for broadening the populations targeted in Year Up's current program, perhaps with strengthened academic supports.**

Although careful screening may be an important factor in Year Up's success, moderately large earnings impacts for more disadvantaged subgroups in the current target population hint that Year Up might be effective with young adults with somewhat lower skills and more life challenges than the program currently serves. Testing the current program with an expanded target population could help to establish the boundaries of its effectiveness more definitively.

Although impacts were moderately large for young adults with weaker educational backgrounds, these effects nonetheless were considerably smaller than impacts for young adults with stronger backgrounds. Extensions to somewhat lower-skilled populations thus might benefit from the inclusion of additional academic supports.[18]

Looking Ahead

A future report on Year Up will provide impact analyses of administrative data on employment and college outcomes covering a seven-year follow-up period. These analyses will provide evidence on the extent to which the program's large earnings impacts persist over another two years. Impacts estimated from the extended follow-up period will also be used to extend the findings from the cost-benefit analysis.

A third follow-up survey conducted approximately six years after random assignment will support even longer term analyses of a broader range of employment and education experiences. The survey also will measure outcomes in other life domains such as financial status, family formation, and psycho-social well-being. Given the program's large and persisting earnings impacts, the long-term evaluation of Year Up affords a valuable opportunity to study causal connection across domains.

The sudden economic downturn in early 2020 caused by the coronavirus pandemic is likely to affect employment and related outcomes for both the Year Up treatment and control groups. Whether and how effects on the two groups might differ are uncertain. The implications for impacts will depend on the depth and duration of the downturn in different occupations and on the degree of job security sample members in each group had achieved prior to COVID-19. A future report on Year Up will cover at least six quarters following the pandemic's onset and begin to assess these effects.

[18] Positive impacts in an RCT testing enhanced academic supports in Year Up's next-generation Professional Training Corps (PTC) program support this recommendation (Fein et al. 2020, Maynard et al. 2020). The enhanced supports generated a 10-percentage point increase in PTC retention and a 13-point increase in college persistence.

I. Introduction

As opportunities for young adults with college degrees have grown in recent decades, prospects for those without postsecondary credentials have steadily worsened. With declining opportunities for well-paying jobs, millions maintain weak connections with the labor force. Short spells of withdrawal often lead to long-term disconnection and life-long disadvantages. The societal costs of disconnection are high: lack of opportunity is associated with higher rates of crime, substance abuse, poor health, economic dependency, child abuse and neglect, and intergenerational poverty. Tax revenues are diminished, and employers are deprived of millions of workers needed to close skills gaps in growing industries.[19]

This report provides evidence on the longer-term impacts of Year Up, a national program with very positive early results for young adults at risk of disconnection.[20] The program serves young adults ages 18-24 with a high school diploma or equivalent in nine cities. Operated by an organization of the same name, Year Up entails six months of full-time training in information technology (IT) and financial services occupations followed by six-month internships at major companies. It provides extensive social and material supports—including weekly stipends—and puts a heavy emphasis on professional as well as technical skills. In 2013-2014—the period that this study's cohorts enrolled in Year Up—the program served more than 3,500 young adults.[21]

Abt Associates is evaluating Year Up's core program as part of the Pathways for Advancing Careers and Education (PACE) project.[22] Sponsored by the Administration for Children and Families within the U.S. Department of Health and Human Services, PACE is evaluating nine programs that include key features of a "career pathways framework" (Fein 2012). Initiated in 2007, PACE represents the first large-scale, multi-site experimental evaluation of career pathways programs. (See *Programs in PACE* box below.)

The Year Up evaluation includes implementation, impact, and cost-benefit studies. The evaluation's first report assessed the program's implementation and short-term impacts about 18 months after random assignment (Fein and Hamadyk 2018). The present report extends the impact analysis to a period centering on three years and extending to five years for some outcomes. It also adds an analysis of costs and benefits for the five-year period. Future reports will cover longer follow-up periods.

This chapter provides an overview of the overall PACE project, describes Year Up's design, reviews the research backdrop for Year Up, and outlines the report's remaining chapters.

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19 For evidence on the prevalence and consequences of disconnection, see Belfield et al. (2012), Lewis and Gluskin (2018), Loprest et al. (2019), National Research Council (2014), and Ross et al. (2018).

20 See Fein and Hamadyk (2018) for a detailed analysis of Year Up's implementation and early impacts and Chertavian (2012) for an account of the program's inception and development.

21 Except where noted otherwise, references to the program in this report refer to Year Up's original, stand-alone ("core") program—the version evaluated in PACE. A newer model—the Professional Training Corps—operates on more than 15 college campuses and is being evaluated separately. Fein et al. (2020) provide an early assessment of that model's implementation and impacts.

22 For more information on the PACE project, go to https://www.acf.hhs.gov/opre/project/pathways-advancing-careers-and-education-pace-2007-2018.

1.1 The PACE Project

The career pathways framework posits that postsecondary education and training are best organized as a series of manageable steps leading to successively higher credentials and employment opportunities in growing occupations (Fein 2012). It developed as a basis for advocating for needed changes in wider policies and systems—particularly with an eye to improving outcomes for nontraditional students. The framework encompasses four major categories of services:

(1) **Academic and non-academic assessment** to identify student needs and factors that may facilitate or hinder academic success, so advisors can make appropriate placements and referrals;

(2) **Innovative basic skills and occupational skills instruction** to make education and training more manageable for nontraditional students who are likely to be balancing school and work and who may have inadequate basic skills (e.g., accelerated courses; contextualized curricula; and active, project-based teaching approaches);

(3) **Academic and non-academic supports** to help students succeed in their current academic step and to proceed to and complete subsequent steps (e.g., academic advising, tutoring, financial support, and referrals to support services); and

(4) **Strategies to connect participants and employers** during and after the program (e.g., involving employers in program activities, internships, and employment services).

Programs in PACE

- **Bridge to Employment in the Healthcare Industry**, San Diego Workforce Partnership, County of San Diego, CA*
- **Carreras en Salud**, Instituto del Progreso Latino, Chicago, IL^
- **Health Careers for All**, Workforce Development Council of Seattle-King County, Seattle, WA*
- **Integrated Basic Education and Skills Training (I-BEST) program** at three colleges (Bellingham Technical College, Everett Community College, and Whatcom Community College), Washington State
- **Pathways to Healthcare**, Pima Community College, Tucson, AZ*
- **Patient Care Pathway Program**, Madison College, Madison, WI
- **Valley Initiative for Development and Advancement (VIDA)**, Lower Rio Grande Valley, TX
- **Workforce Training Academy Connect**, Des Moines Area Community College, Des Moines, IA
- **Year Up**, Atlanta, Bay Area, Boston, Chicago, National Capital Region, New York City, Providence, Greater Seattle

*Programs funded through the Health Profession Opportunity Grants (HPOG) Program.

^Program partially HPOG funded.

Programs operating within the career pathways framework typically draw on multiple strategies within and across these four categories. This emphasis reflects recognition that nontraditional students often face multiple barriers and need a variety of supports to succeed in training and employment. The number and kinds of strategies programs include, and the career steps they target, can vary widely. Many programs focus on training for just one or two steps on a career pathway.

Each of the nine programs in the PACE project follows a different model. All share some elements of the career pathways framework, but each reflects its own choices, based on its target population, focal occupations, funding, and other considerations. Given this substantial variation in designs, PACE is evaluating each program separately.[23]

The goal of PACE is to evaluate the nine programs within a common overarching conceptual framework and with a consistent research design and measures. The most critical element of the evaluation design is random assignment of eligible applicants to treatment and control groups. As explained in Chapter 2, this approach ensures that the study's treatment and control groups will be equivalent in their observed and unobserved characteristics. As a result, any systematic differences in their subsequent outcomes (i.e., the program's impacts) can be attributed to the treatment group's access to program services.

1.2 The Year Up Program

This section describes Year Up's context and principal services. The program consists of two successive six-month phases:

- During the first half of the program—**the Learning and Development (L&D) Phase**—students attend classes at Year Up from 8:30 AM until 3:30 PM four days a week and for a half day on Wednesdays. [24] The instructors also assign homework. Training addresses both occupation-specific and general skills. The focus of technical training varies by Year Up office and cohort among five target occupational fields: IT (the most common), quality assurance, financial operations, project management, and customer service. Other courses focus on professional and business communications skills. Students gain experience in writing, giving presentations, interacting with clients and colleagues, and developing critical-thinking skills.
- In the second half of the program—**the Internship Phase**—students work in entry-level professional roles at local employers, often major corporations. They maintain full-time schedules, working at internship sites four and a half days a week and returning to Year Up on Wednesday afternoons to share and process their internship experiences, attend workshops, and plan post-program career transitions.

Two cohorts enter the program each year, in March and September. There is thus always one cohort in L&D and one in internships throughout the year.

As discussed in Chapter 2, Year Up's logic model identifies full-time employment as the preferred first step following the program. The theory is that graduates will be in a better position to continue their education and training once their financial circumstances are stable.

The remainder of this section describes Year Up's local environments (Section 1.2.1), national and local staffing models (Section 1.2.2), and principal services (Section 1.2.3).

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[23] All PACE-related reports, including profiles and implementation and early impact reports for each program, can be found on https://www.acf.hhs.gov/opre/project/pathways-advancing-careers-and-education-pace-2007-2018 and www.career-pathways.org.

[24] The Wednesday schedule gives L&D students an unstructured afternoon when they can catch up on homework and other life needs. It also frees up staff and space for weekly workshops with interns who return to Year Up offices at that time.

1.1.1 Local Context

The program operates in nine cities: Atlanta, Boston, Chicago, National Capital Region (Washington, DC), New York City, Providence, San Francisco, San Jose, and Seattle. Local offices operate independently from a single central location in each city, with the exception of San Francisco and San Jose, which Year Up administers jointly.[25] The first section below summarizes basic demographic and economic statistics for the nine metropolitan areas. The second section briefly describes some of the other services available to young adults in these areas.

Population, Geography, and Labor Markets

The nine urban areas span both coasts and the Midwest. Census Bureau estimates for Metropolitan Statistical Areas (MSAs) in 2013—the year that Year Up began enrollment for PACE—indicate widely varying demographic and economic characteristics (Exhibit 1-1).

Total populations range from under two million residents (Providence and San Jose) to nearly 20 million (New York). African Americans and Latinos make up a substantial proportion of the population in all but three areas (Boston, Providence, and Seattle). Poverty rates range from 9 percent (Washington, DC) to 16 percent (Atlanta), with public assistance receipt generally tracking poverty levels. The “disconnection rate” for young adults—measured here as the fraction of 16- to 24-year-olds not currently in school or working—varies from 8 percent (Boston) to 15 percent (Atlanta) and also generally tracks with poverty rates. In most MSAs, the proportion of all jobs in Year Up’s target occupational sectors—computer and mathematical occupations and business and financial operations—is higher than for the United States as a whole. Over 2013-2016, employment in these sectors grew rapidly in New York, San Francisco, and San Jose but little in Boston, Chicago, and Washington, DC. Access to mass transit—a critical employment support—also varied widely.

[25] The San Francisco and San Jose offices share some staff and are identified as a single office in Year Up data and statistics.

Exhibit 1-1: Characteristics of Metropolitan Statistical Areas With Year Up Offices in 2013

Characteristic	Atlanta	Boston	Chicago	New York	Providence	San Francisco	San Jose	Seattle	Washington DC
Total population (1,000s)	5,525	4,684	9,537	19,950	1,604	4,516	1,920	3,610	5,950
Disconnected 16- to 24-Year-Olds[a]									
Percentage of all youth (%)	14.9	8.2	12.5	13.5	13.0	10.4	9.7	12.4	12.4
Number (1,000s)	111	49	148	324	28	51	20	51	94
Black, non-Hispanic (%)	33.0	7.7	16.9	17.2	5.3	7.9	2.7	5.7	25.5
Hispanic, any race (%)	10.5	9.9	21.4	23.5	11.2	21.9	27.7	9.5	14.7
Educational Attainment, 25+ year olds (%)									
Less than high school graduate	11.8	8.8	12.8	14.7	15.2	11.9	13.5	8.3	9.5
High school graduate/equivalent	24.8	24.0	24.8	25.6	28.1	16.9	15.3	20.3	19.1
Some college or associate degree	28.2	22.4	27.2	22.2	27.1	26.1	24.5	31.9	22.8
Bachelor's degree	22.4	25.0	21.4	21.9	18.2	27.0	25.3	25.2	25.3
Graduate or professional degree	12.7	19.8	13.7	15.5	11.4	18.2	21.3	14.2	23.3
Unemployed (%)	9.8	7.2	9.8	8.8	9.6	8.0	8.3	7.3	6.7
Below poverty (%)	15.9	10.4	14.4	14.6	14.3	11.5	10.5	12.6	8.5
In Household with Benefits in Last 12 Months from (%)									
Cash public assistance	2.1	2.9	2.7	3.2	3.2	2.8	2.3	3.4	2.0
Food stamp/SNAP benefits	14.2	11.3	13.3	14.0	16.2	6.3	5.4	12.6	7.9
Prominence of Occupation (Location Quotient)[b]									
Computer and mathematical occupations	1.44	1.77	1.08	1.08	0.89	1.91	3.76	2.50	2.72
Business and financial operations	1.36	1.33	1.08	1.22	0.93	1.46	1.38	1.38	2.06
Change in Number Employed 2013-2016 (%)									
Computer and mathematical occupations	23.5	6.6	13.7	13.8	13.0	24.2	34.0	5.2	0.5
Business and financial operations	6.0	-0.2	11.4	11.0	9.8	18.3	18.2	17.9	0.4
Extent of Transit Index (0-100)[c]	44	74	65	84	48	80	41	57	71

Key: SNAP = Supplemental Nutrition Assistance Program.

Source: 2013 population characteristics at www.factfinder.census.gov. Disconnection estimates from Lewis and Burd-Sharps (2015). Occupation statistics at www.bls.gov/oes/tables. Transit index scores at www.walkscore.com/methodology.shtml.

[a] Estimates of disconnection are based on current school and work status (Lewis and Burd-Sharps 2015).

[b] The "location quotient" is a Bureau of Labor Statistics measure representing the ratio of the fraction of all workers in a particular occupation in the MSA to the fraction for the U.S. overall. Values above 1 indicate that an occupation is more prominent in the MSA than in the nation as a whole.

[c] Higher values on the transit index indicate greater access to major transit routes (factors include frequency, transit mode, and distances to nearest stop).

These statistics show that Year Up's nine offices operate in varied environments. An implication is that PACE provides a strong test of the degree to which the Year Up program model can be implemented and generate its intended impacts in diverse urban settings.

Other Services Available in the Community

Each of the metropolitan areas in which Year Up operates has available an extensive range of alternative employment and training services, including training at community and technical colleges, for-profit postsecondary institutions, and non-profit training providers. Some of the better known community-based providers include Job Corps, Per Scholas, Jewish Vocational Services, Center on Employment and Training, and Goodwill Industries. Many training providers offer job readiness and job placement services in conjunction with technical skills training. Some offer mentoring by volunteers in the business community. Some of these providers offer training free of charge, whereas others require participants to apply for financial aid or cover their costs by other means. In some communities, participants might qualify for college access programs that provide free financial aid advising. A few programs offer internships or other work experience opportunities (e.g., Per Scholas in Boston and the Young Adult Internship Program in New York). Few programs offer extended professional experience at major corporations comparable to Year Up's internships.

1.2.2 National Organization and Local Staffing

A national staff team headquartered in Boston supports local offices with operations assistance (such as human resources, marketing, and accounting); facilitates cross-office knowledge building; and provides guidance and oversight on implementation. Each Year Up office is in or near the central business district of the city in which it operates. Year Up receives funding from employer payments for interns; foundation grants; donations from companies and individuals; and, to a small degree, government agencies. During 2013-2014, employer payments for interns financed 59 percent of the program's $28,290 per participant cost. Foundations and private donors provided the vast majority of the balance. Governmental funding accounted for only 2 percent of Year Up's revenue.

There were five categories of staff in each office during PACE:

1. Admissions and student services (typically located in the same department);
2. Program and instructional (including learning community leaders and instructors, also often located together);
3. Corporate partnerships (typically including partnership development, internship services, and career and alumni services);
4. Development(sometimes including coordination of volunteer staff); and
5. Operations (typically including accounting, human resources, facilities, and related strategic planning).

An executive director in each office provided overall leadership and devoted substantial attention to external relationships and fundraising. Most offices also had a deputy with more responsibility for day-to-day management: this role (also known as "site director" or "program director") became more common over the study period. A typical office had about 40 regular staff.

In addition to staff, each office appointed an executive board of leaders from local business, philanthropic, and education communities. These boards provided ongoing counsel on strategy

and developments in the community and often played key roles in introducing Year Up leaders to new donors, corporate partners, and college partners.

1.2.3 Program Design

Year Up's approach embodies principles shared by other programs that train for targeted occupational sectors. These programs focus on entry-level positions in growing fields such as health care, IT, business, and financial services, as well as more skill-intensive jobs in manufacturing and the trades.[26] They typically aspire to a "dual customer" approach, treating both employers and disadvantaged adults as clients. Sectoral programs aim to become reliable and trusted sources of workers with the skills local employers need.

This section describes Year Up's design. The discussion is organized around the four major career pathways design dimensions outlined in Section 1.2.

Assessment and Monitoring

A comprehensive approach to assessing participants and program performance is a hallmark of promising career pathways programs. The Year Up model incorporates multiple assessment and feedback components.

To identify and select applicants who are a good fit to the program, admissions staff in each local office administer an intensive, multi-stage assessment and screening process. Recruitment and screening are ongoing, timed to generate the target number of admissions to cohorts starting the program in March and September of each year.

In addition to making sure that applicants meet basic eligibility qualifications (e.g., 18-24, high school credential), screening seeks to identify young adults who are motivated to do well in the program and who face life challenges that can be managed with help from the program. Year Up accepted 16 percent of applicants during the PACE period (Fein & Hamadyk 2018).

Careful screening is a hallmark of sectoral programs more generally.[27] Although few studies have measured stringency, one study of attrition in the applicant pipelines of four sectoral programs reported acceptance rates ranging from 10 to 30 percent.[28]

In addition to up-front screening, Year Up staff follow program-wide protocols for monitoring each participant's progress and behavior and use a set of quantitative indicators known as "FM-RADIO" to measure local offices' performance. For the latter, Year Up national and local staff use a management information system (based on a Salesforce© database) that provides weekly dashboard reports for each office summarizing performance on: Financial Management (revenue covers costs), student Retention, Admissions (meeting recruitment targets), Development (fundraising), Internships (securing enough positions), and post-graduation employment Outcomes. Local offices are expected to meet performance targets in each area.[29]

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[26] See Conway and Giloth (2014) and Maguire (2016) for discussions of sectoral training strategies.

[27] See Kazis and Molina (2016) and Maguire (2016).

[28] Tessler et al. (2014).

[29] Performance targets set by Year Up's national office included: achieving 75 percent program retention to graduation, developing internship placements for all L&D completers, and ensuring that at least 70 percent of participants were working full-time in Year Up target occupations four months after graduating. Failure to meet targets typically prompts intervention by national office staff, to help troubleshoot and develop responses to problems.

Instruction

During L&D, Year Up offers courses in three subjects:

(1) One set of courses focuses on **technical skills** in specified occupational tracks. Occupational tracks vary by office (see Exhibit 1-2). Within tracks, offices have the flexibility to choose or develop curricula to meet the needs of local employers and generate credit through arrangements with local colleges. Some offices use existing curriculum, such as Cisco's *IT Essentials* for those in the IT track, whereas other offices create their own curricula with input from employers and assistance from consultants.

Exhibit 1-2: Selected Characteristics of Local Year Up Programs

Office/ Year of Inception	Students per Cohort	Occupational Focus	Partner College	Maximum College Credits Awarded for Participation in Year Up
Atlanta, GA 2009	85	Information Technology	Atlanta Metropolitan College	21 credits + IT Certificate
Bay Area, CA (San Francisco 2008, San Jose 2012)	80 (San Francisco) 40 (San Jose)	Information Technology Quality Assurance	Foothill College	29 quarter semester credits + Fundamentals of Technical Support Certificate
Boston, MA 2001	180	Information Technology Financial Operations	Cambridge College	18 credits
Chicago, IL 2010	80	Information Technology	Harold Washington College	18 credits
National Capital Area (Washington, DC) 2006	120	Information Technology	Northern Virginia Community College	18 credits
New York City 2006	135	Information Technology Quality Assurance Financial Operations Project Management	SUNY Empire State College	30+ credits (18-21 credits per track, with additional credits possible for submitting an internship portfolio)
Providence, RI 2005	80	Information Technology Customer Service	Community College of Rhode Island	23 credits for IT; 22 for Customer Service
Seattle, WA (Puget Sound) 2011	80	Information Technology Quality Assurance	Bellevue College	18 credits + Intro to Information Technology Certificate

Note: Quarter semester credits at Foothill College represent about 19 regular semester hours, following the general standard that each quarter semester credit represents .6667 semester credits.

(2) A second course—**Business Communications**—focuses on English and related communication skills needed to succeed in corporate settings. In these classes, students learn how to compose, analyze, and respond to professional emails. Instruction in basic reading, writing, and critical-thinking abilities draws heavily on situations and tasks that arise in professional environments. Students also learn public-speaking techniques and how to express ideas persuasively, as well as develop an "elevator pitch" about their career interests and skills. Business Communications introduces the concept of code switching—or being able to move alternately between two different languages or dialects. This concept encourages students to become fluent in the language and culture of corporate America, while acknowledging that different manners and vocabulary may be appropriate in students' home communities.

(3) A third course—**Pro Skills**—focuses on the wider set of expectations and behaviors needed to function effectively in professional settings. Classes explore business

etiquette, non-verbal communication, workplace relationship skills, and appropriate responses to common workplace scenarios. To help students manage their lives outside of the classroom or workplace, Pro Skills courses also typically include sessions on financial literacy, including topics such as debt, managing credit, and budgeting.

During the PACE period, local offices had substantial flexibility to tailor curricula to local circumstances. Fein and Hamadyk (2018) describe some of the ways local approaches varied to reflect the interests and experience of local instructors, curriculum standards of local college partners, and skills prioritized by area employers.

As part of the program model during the PACE years, each office established a **formal agreement with a local college** partner.[30] Under these agreements, the colleges enrolled participants as students, granted credit for successful completion of courses, and sometimes awarded certificates for completing Year Up. The level of support from Year Up staff in the college enrollment process varied. In some offices, staff guided students through each enrollment step, including applying for financial aid and signing up for placement exams; in other offices, students were expected to apply on their own.

Though nearly all college partners granted credit for Year Up's technical and business courses, only a few awarded credit for its Pro Skills course. In some offices, colleges granted English credit for its Business Communications course only for students scoring high enough on college placement exams to qualify for college-level English.

Although graduating from Year Up does not normally result in an occupational certificate, a few partner colleges awarded certificates to Year Up graduates for work completed in Year Up. Examples certificates include Fundamentals of Technical Support and Introduction to Information Technology.

Preparation for industry certification also is not a formal focus in Year Up's technical courses. A number of offices, however, provide ad hoc supports, such as 1- to 2-week training boot camps, shorter workshops, elective courses taught by volunteers from local employers, and financial assistance with examination fees.

Supports

Year Up espouses a philosophy of "high support, high expectations" that promotes high standards for both participant behavior and program services. As described below, a formal contract with each student lists expectations for professional behavior, and varied program activities encourage feedback on behavior among peers and staff. Consisting of about 40 students and designated staff members, learning communities aim to foster a supportive social environment. Other supports include financial assistance, staff social workers, advisors, mentors, and instructional supports.

Behavior contract. Year Up specifies expected responsibilities and behaviors in a formal contract each student signs as a condition of participating in the program. The contract sets forth expectations for attendance, being on time, professional dress, behavior and conduct, assignment completion, and respect for the core values of the program (see *Year Up's Core Values* box below). One staff member described the contract as a tool that outlines the "rules to the game for corporate America."

[30] Shortly after the PACE period (2013-2014), Year Up shifted to a credit-recognition arrangement with the American Council on Education and discontinued local college partnerships.

Contract violations—called "infractions"—trigger loss of points and reductions in stipends. Although details varied across offices, students generally start with 200 points. When points fall to a specified threshold (usually 100-150, depending on the office), students must work with staff on an improvement plan and present it to their learning community. If points reach zero, students are said to have "fired" themselves and must leave Year Up.

Year Up's Core Values

- Respect and value others
- Build trust, be honest
- Engage and embrace diversity
- Be accountable
- Strive to learn
- Work hard and have fun

Year Up stresses a high-feedback culture in which students learn to both accept and give feedback constructively. In "Friday Feedback" sessions, they gather with their learning community to give one another specific feedback using a structured method called the "plus/delta approach."[31]

Financial assistance. Year Up provides its package of training and services at no cost to students. It also helps students address financial needs through weekly stipends and, in some offices, help applying for student financial aid.

Stipends provide an opportunity to "earn while you learn" and are designed to help students meet needs that otherwise might prevent participation. In most offices, the weekly stipend was $150 during the L&D phase and $220 during the internship phase. In theory, a student who finished the program and received their full stipend each week would earn $8,870 for the entire program (12 months). Although less than a student would receive in a full-time minimum-wage job ($15,080 at the $7.25 per hour federal minimum wage), the stipend's purpose is to make it easier for participants to work fewer hours in order to focus on the program, rather than to provide a regular wage.

Another function of stipends is to incentivize compliance with the expectations specified in the student contract. Contract infractions trigger reductions in stipends and can result in exit from the program. Thus, the amount students actually receive may be less than the $8,870 maximum. The PACE Year Up short-term report provided statistics on infractions and actual stipend amounts received by the PACE cohorts. The average treatment group member received $7,142 in stipends during the program, or 81 percent of the maximum possible amount (Fein and Hamadyk 2018).

In some local offices, staff help students assess eligibility and apply for Pell grants and other student financial aid to meet tuition and other school expenses required for enrollment at the programs' local partner colleges. Year Up provides the portion of tuition and fees not covered by Pell grants and other financial aid, making college available at no cost and without need for loans.

Social supports. Year Up's social supports begin with orientation and extend throughout the program. To foster a sense of belonging and to help new students acclimate to the demands of Year Up, many offices offer pre-program activities. These activities include welcome receptions, "bring a supporter" events open to friends and family, question-and-answer sessions with the office director or other senior program staff, and "Gear Up for Year Up" sessions aimed at

[31] The plus/delta approach is a tool commonly used in facilitation, debriefing, and instructional environments. As applied at Year Up, staff and peers begin by citing positive aspects of one another's behaviors (the "plus") and then note less positive aspects that might to be good to change (the "delta").

bolstering students' engagement. During the program, students are grouped in learning communities of about 40 members, who learn together and share a common identity as Year Up participants.

Social services. Year Up's student services staff includes trained social workers and mental health professionals equipped to support students' efforts to navigate challenges that may affect their chances of completing the program. During applicant screening, these staff members help to identify circumstances that might make it difficult for applicants to succeed in the program. Student services teams then help to decide whether the program has resources to support each applicant and the number of higher-risk applicants the program can handle.

Before classes start, social workers work with each admitted student to identify potential issues, develop an "onboarding plan" identifying needed preparatory steps, and arrange supports. Social workers participate in learning community activities over the course of L&D to get to know and be accessible to students.

Advising and mentoring. Each student is assigned a staff advisor at the outset of the program, and this relationship continues at least through graduation. Particularly during the L&D phase, advisors monitor each student's experiences in the program closely, providing encouragement and helping to solve problems that arise. All Year Up staff members, regardless of their role, serve as advisors to four to eight students. Advisors are required to meet with their advisees weekly but have substantial flexibility in the format of these meetings. For example, meetings might be in a one-on-one or group format, and discussions might be informal or structured.

Year Up also pairs each student with an outside mentor from the community for additional career and personal guidance.[32] The program recruits mentors from local businesses, often as part of the same outreach activities used to raise funds and develop internship positions at local employers. Mentors offer students an opportunity to meet and network with working professionals in settings relevant to the students' occupational interests. Mentors often participate in program activities such as tutoring and preparation for job search (e.g., resume development and practice interviews).

Instructional supports. Finally, local offices provide tutoring and other assistance to students who need additional academic help. The format and extent of such supports vary. In most offices, instructors or teaching assistants are available in computer labs after classes to assist students who have questions about course material. At least one office runs a peer tutoring program.

Employment Connections

Year Up provides students with six months of full-time work experience during the internship phase of the program. Students also receive intensive employment services towards the end of this phase and continuing for four months after graduation.

Internships. After completing the L&D phase, students continue their learning through six-month internships with companies in fields related to their program of study. Many of these companies are Fortune 500 firms in the IT (e.g., Facebook, Google, Salesforce) and financial (e.g., American Express, Bank of America, J.P. Morgan, State Street) sectors.

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[32] All but one Year Up office requires students to meet with their mentors. The remaining office believed that allowing students to decide whether they wanted mentors would result in stronger mentoring relationships.

The purpose of internships is to provide work experience, career awareness, and connections with potential future employers. Throughout, interns maintain contact with Year Up staff and attend weekly meetings with staff and peers to "process" their work experiences.

Employers pay Year Up for each intern to defray costs of recruiting, training, and supporting interns' success. The average payment was $22,404 per intern in the PACE study sample. Averaged across all participants (including those dropping out before their internship), this revenue amounted to $16,907 per participant and financed 59 percent of the program's $28,290 per participant cost.

Securing revenue-generating internships is a demanding ongoing activity for Year Up staff. National leaders initiate and coordinate relationships with large national companies with offices in multiple cities. Local Year Up corporate relations teams market the program to local employers, work with all worksites to develop internship positions, and manage relationships with internship sites.

Several weeks before each internship phase begins, local offices run an intensive operation to match interns with available internship slots. In matching a student to an internship, staff consider student attributes such as personality, interests and abilities, outside life circumstances, location, and transportation options. Admissions teams also consider the nature of potential internships in work environment, supervisory styles, typical duties, future career possibilities, and location.

During internships, students work full-time four days a week and a half-day on Wednesdays. The somewhat higher stipend they receive during their internships ($220/week) helps to compensate for transportation and any other additional needs during this phase. Contract monitoring during internships focuses mainly on attendance and work hours, with worksite supervisors filing regular online reports with Year Up. Year Up internship services teams also monitor and help to resolve any issues at work.

On Wednesdays, interns return to Year Up to debrief on their internship experiences and reconnect with staff and peers. Activities vary across offices, but generally include advising, group discussion of progress and challenges in internships, and workshops on selected topics. Towards the end of internships, Wednesday activities emphasize career planning, resume development, and job search.

Post-program services. Local Year Up career and alumni services teams assist participants with job search and placement for a period starting towards the end of internships and extending for up to four months after graduation from the program. Services include identifying job openings; sponsoring job fairs; and providing one-on-one support with career counseling, job search, and resume development. These teams staff an in-office resource center providing internet access and help completing online job applications and other job search activities.

The teams also promote more extended engagement through local alumni boards and social media platforms such as LinkedIn and Facebook. Related opportunities for Year Up graduates are attending alumni events, speaking to current program students, and sponsoring internships at their place of work.

In 2014, Year Up launched an affiliated employment services company—Year Up Professional Resources (YUPRO)—dedicated to Year Up alumni. YUPRO provides career supports to alumni and fee-based recruitment services to employers. It aims to be financially self-sustaining, returning any profit to Year Up to support expanded alumni programming.

1.3 Earlier Findings on Year Up From PACE

An earlier report (Fein and Hamadyk 2018) assessed Year Up's implementation and early impacts (at about 18 months after random assignment). The implementation study ended with that report, whereas impact analyses in the present report extend the earlier findings.

1.3.1 Findings from the Implementation Study

Results from the implementation study and quantitative analyses of program data show that the eight local Year Up offices fully implemented all program components as intended, generating strong results on a series of implementation indicators. This is a notable achievement given the number and complexity of program elements, varying local environments, and the need for tight coordination across many services.

- **Year Up achieved high levels on measures of implementation pertaining to recruitment, retention, internships, revenue, and post-program employment. It earned high praise from employers.**

All offices met the study's requirement for expanding recruitment by 50 percent for PACE. They did so while maintaining applicant quality, admitting only one in six applicants, as in the past. Nearly all (96 percent) treatment group members actually enrolled in training. Retention was high: 75 percent of the treatment group (78 percent of those who enrolled) completed the program. Staff diligently enforced Year Up's contract: 96 percent of enrollees received at least one infraction, and 45 percent received 10 or more infractions. The program placed 99 percent of Learning and Development (L&D) phase completers in internships and generated $22,404 in revenue from employers on average per intern.

Four months after graduation, Year Up program data show that 83 percent of graduates were employed. Of those working, 89 percent were employed full-time, 88 percent were in an occupation relevant to their Year Up training, 41 percent had jobs with their internship sponsors, and 77 percent were earning $15 per hour or more.

Employers' perceptions of Year Up interns were generally favorable. Several employers noted that experience with Year Up interns had led them to revamp career pathways in skilled technical occupations to create new career entry points at lower levels. One large company heavily re-oriented its entry-level hiring practices to recruit interns who did not have a bachelor's degree. For another, creating assignments for interns stimulated the realization that a substantial layer of tasks currently handled by mid-level employees could be performed by Year Up graduates.

- **Treatment group members reported experiencing promising instructional practices more often at Year Up than control group members experienced at other training providers.**

Virtually all treatment group members participated in Year Up, and more than half of control group members received education and training from other providers—mostly community colleges. In the 18-month follow-up survey, treatment group members were more likely than control group members who pursued training elsewhere to say that the instruction they received included practices seen as promising in the workforce field. Year Up participants were more likely to say that their classes mostly involved project- and group-based work and less likely to say that classes mostly involved lectures. The former also were more likely than the latter to indicate that their classes stressed active learning methods (e.g., discussion and projects), and that courses were relevant to important life pursuits. More students in the treatment group reported taking courses specifically focused on life skills than did students in the control group.

More treatment than control group students said they received supports while in education and training. Year Up students were 9 percentage points more likely than control group students to receive academic advising, 18 percentage points more likely to receive tutoring, and 9 percentage points more likely to receive financial aid advising. Year Up participants were 13 percentage points more likely to receive grants or scholarships and 22 percentage points less likely to take out loans than were control group members at other schools.

- **Year Up increased receipt of career supports.**

The 18-month follow-up survey also measured receipt of selected services from any source for all sample members, including those who did not enroll in the program or school elsewhere. Year Up increased the likelihood of receiving career counseling by 39 percentage points; supports for meeting school, work, or family responsibilities by 33 points; and job search and placement assistance by 43 points.

1.3.2 Findings from the Short-term Impact Study

This section briefly recaps key findings on Year Up's early impacts on earnings, employment, and postsecondary education.

- **Year Up generated a large, statistically significant increase in average earnings in the sixth and seventh quarters following random assignment (the short-term confirmatory outcome).**

The primary criterion for success in the short-term report was whether Year Up would increase average quarterly earnings in the sixth and seventh quarters after random assignment.[33] The research team chose that period to evaluate short-term success because those quarters immediately followed Year Up's four-month post-graduation employment services. Year Up produced a statistically significant $1,895 (53 percent) positive impact on average quarterly earnings in Quarters 6 and 7. Impacts extended at least through the end of the three-year period covered in the first report.[34]

- **Year Up's impacts on earnings reflect increases in average hourly wages and hours worked rather than increases in the percentage of sample members employed.**

Employment rates were identical (at 74 percent) for the control and treatment groups in the 18-month follow-up survey. Impacts on total earnings came from increases in hours worked (3–4 hours per week more) and hourly wages (about $4 per hour more).

- **Impacts on postsecondary education were mixed.**

As a result of Year Up's partnering with local community colleges, twice as many treatment group members were enrolled in college during the first follow-up year, compared to control group members. As Year Up graduates went to work in the second year after random assignment (consistent with the program's logic model), college enrollment in the treatment group fell to below that of the control group.

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[33] Measures of average earnings include sample members who did not work (and thus had zero earnings) during each quarter.

[34] The short-term report centered on an 18-month follow-up period (informed by the 18-month follow-up survey). However, it was able to extend employment and earnings analyses for a longer period, using data from an April 2018 National Directory of New Hires extract extending through 12 quarters after random assignment.

Year Up produced a small increase in the average number of credits earned (4.0 more credits) in the first 18 months after entering the program. There was no impact on receipt of college credentials: only 3 percent of the treatment and control groups reported receiving a college credential since random assignment. On the other hand, Year Up increased receipt of industry certifications and licenses by 18 percentage points.

- **Year Up produced statistically significant increases in earnings for every subgroup of participants examined and for all eight local Year Up offices. The size of impacts nonetheless varied for a number of characteristics.**

Impacts on average quarterly earnings in Quarters 6 and 7 were at least $1,000 and statistically significant in every subgroup across 10 characteristics examined. There were statistically significant (at $p<.10$) differences in the *size* of those effects for a number of characteristics measured at baseline, however. Impacts were lower for participants who, compared to other subgroups, reported lower high school grades, expected to work full-time over the next few months after study intake, identified as African American, and rated themselves as more highly motivated to get more training. Though all eight local offices generated positive impacts, the size of the impacts varied substantially across offices.

1.4 Organization of This Report

This report's remaining chapters are organized as follows. **Chapter 2** describes evaluation's design and methodology. **Chapters 3, 4, and 5** provide findings on Year Up's longer-term impacts on, respectively, employment and earnings; further postsecondary education; and other life outcomes.[35] **Chapter 6** analyses Year Up's costs and benefits over the first five follow-up years. **Chapter 7** summarizes and discusses the implications of the report's findings.

For convenience, a set of exhibits with supplemental findings closely related to the main analyses appears at the end of this document. A separate volume with the report's technical appendices provides additional details on analysis methods, data sources, and sensitivity analysis.

[35] This ordering of chapters follows Year Up's logic model, which identifies full-time employment as the preferred first step following the program. The model posits that graduates will be in a better position to continue their education and training once their financial circumstances are stable.

2. Evaluation Design and Methods

This chapter describes the evaluation approach. It starts in Section 2.1 with a review of the theory of change underlying Year Up's model. Section 2.2 states the study's major research questions. Section 2.3 describes the main data sources. Section 2.4 covers technical details of random assignment and of methods used in the impact and cost-benefit analyses.

2.1 Year Up's Theory of Change

As mentioned in Chapter 1, the PACE project is using a "career pathways framework" to provide consistency in research questions and analyses across its nine study programs. This framework identifies potential promising features of programs and hypothesized connections between these features and desired outcomes.

Exhibit 2-1 depicts the PACE career pathways theory of change as applied to Year Up. The exhibit shows how major program components target "intermediate" outcomes, which in turn are expected to affect the "main" outcomes of interest when assessing whether the program was successful.

2.1.1 Recruitment and Screening

The Year Up program model begins with recruitment (Exhibit 2-1, box A). As described in Chapter 1, recruitment targets urban young adults ages 18-24 who have a high school credential and whom program staff judge can benefit from Year Up. In assessing ability to benefit, admissions teams look for applicants who are motivated to succeed and whose challenges are manageable given the supports the program can offer.

2.1.2 Major Program Components

Year Up provides an extensive array of services (box B). Chapter 1 and an earlier report (Fein & Hamadyk 2018) describe the nature and implementation of these services in more detail.

2.1.3 Intermediate Outcomes

These Year Up services aim to improve intermediate outcomes in five domains (box C):

(1) **General (21st Century) Competencies.** These competencies include cognitive skills (e.g., literacy, numeracy, critical thinking, creativity); intrapersonal skills (e.g., core self-evaluation, work ethic/conscientiousness, self-regulation/meta-cognition, intellectual openness); and interpersonal skills (e.g., teamwork, collaboration, leadership). The Year Up program seeks to develop these skills through its Business Communications and Pro Skills courses, behavior contracts, learning communities and other social supports, and exposure to work situations during internships.

(2) **Occupation-Specific Competencies.** Technical courses; ad hoc learning opportunities at Year Up offices (e.g., workshops, elective courses, guest lectures); and hands-on experience during internships all impart specific occupational skills.

(3) **Career Orientation and Knowledge.** Many elements of the program aim to foster broader awareness of career options and pathways in the fields Year Up targets. They include extensive exposure to local employers, technical instruction from instructors with extensive industry experience, and formal career planning services.

(4) **Material Resources.** Stipends and supports arranged by student services teams are designed to alleviate material hardships that can interfere with students' ability to participate in the program.

(5) **Personal and Family Challenges.** Close assessment and strong supports help to identify and address other potentially destabilizing life challenges.

2.1.4 Main Outcomes

The theory of change posits that improvements in intermediate outcomes will lead to improvements in three major outcome domains (box D):

(1) **Success in Career-Track Employment.** Year Up defines success largely in terms of full-time work in targeted occupations at $15 per hour or more four months after graduation from the program.

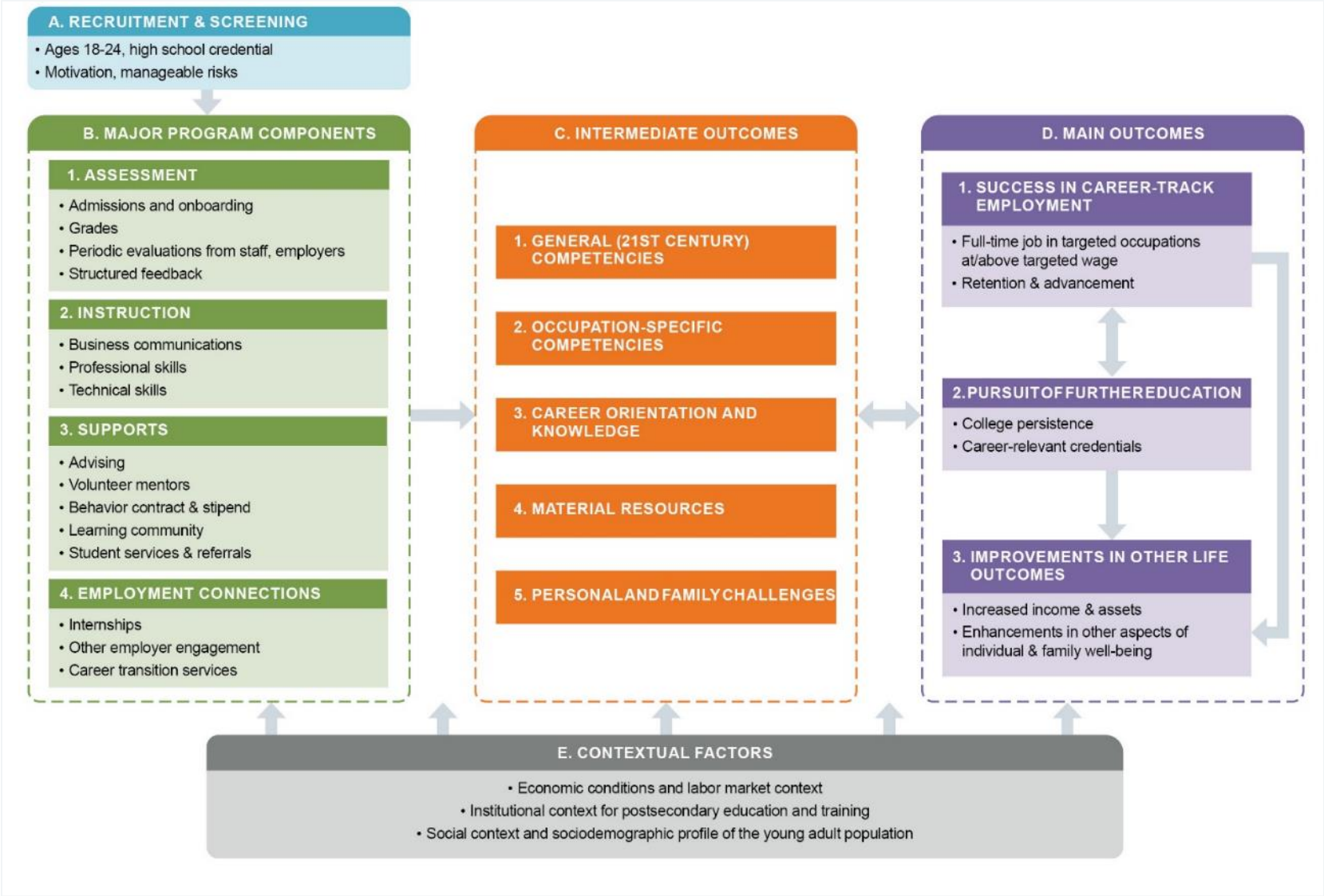
(2) **Pursuit of Further Education.** Year Up also identifies college persistence and completion as important longer-term goals, once program graduates are financially stable. To this end, during the program students are enrolled at local colleges, and completing Year Up courses there earn them credits.

(3) **Improvements in Other Life Outcomes.** The model posits that good jobs will raise income and assets and thus enhance other dimensions of individual and family well-being in the longer term (e.g., physical and mental health, formation of healthy family and social relationships).

2.1.5 Contextual Factors

Finally, each local Year Up program tailors its program to local conditions, including the sociodemographic composition of young adults in the area, local industry and employment base, economic conditions, and colleges and other postsecondary options in the community (box E).

Exhibit 2-1: Theory of Change for Year Up



2.2 Major Research Questions

The concluding chapter of the earlier, short-term impact report (Fein and Hamadyk 2018) raised a series of questions about how Year Up's impacts would evolve over the longer term. To paraphrase, these questions included:

- Would the program's large positive earnings impacts persist?
- Would further impacts on post-secondary education and training develop?
- Would there be impacts in other life domains?
- Would Year Up's overall benefits exceed its costs for different program stakeholders and for society as a whole?

The current report begins to answer these questions. Future reports will extend analysis to longer follow-up periods.

2.3 Data Sources

The Year Up impact study draws on a wide range of data sources, including data collected directly from young adults and from records in administrative data systems. This section describes the study's main data sources. More detailed information about each data source is in the report's technical appendices.

2.3.1 Baseline Surveys

Prior to random assignment, all study participants completed two baseline forms. A Basic Information Form (BIF) collected demographic and economic information. A Self-Administered Questionnaire (SAQ) measured a variety of attitudes, beliefs, psycho-social dispositions, and other more-sensitive personal characteristics such as criminal background and financial security.

2.3.2 Follow-Up Surveys

This report focuses on outcomes measured in a three-year follow-up survey, with some reference to 18-month follow-up survey data analyzed in the short-term report.

- **18-month Survey.** The earlier follow-up survey covered education and training experiences, receipt of related supports, employment and self-assessed career progress, financial status, psycho-social outcomes, and family formation. The survey response rate was 78 percent for the treatment group and 73 percent for the control group (Fein and Hamadyk 2018).
- **Three-year Survey.** The three-year follow-up survey measured outcomes that Year Up's theory of change suggested might be affected over a longer time horizon. In addition to details on employment and related financial circumstances, the survey assessed educational history, psycho-social skills, and other outcomes. The response rate for the three-year follow-up survey was 71 percent overall (74 percent in the treatment group and 67 percent in the control group). The median response occurred at 39 months after random assignment in both the treatment and control groups. Appendix B lists and defines the three-year survey outcomes used in this report.[36]

[36] The full instrument is available at http://www.career-pathways.org/career-pathways-pace-three-year-instrument/.

2.3.3 National Directory of New Hires (NDNH)

Maintained by the federal Office of Child Support Enforcement, the NDNH includes an individual's quarterly earnings across multiple employers, excluding earnings from self-employment and "off the books" jobs. Data from a January 2020 extract cover a period extending from two quarters before random assignment to five years (20 quarters) after random assignment for all sample members.

2.3.4 National Student Clearinghouse (NSC)

Maintained as an enrollment verification service for purposes of administering student loans, the NSC provides very high coverage of enrollment at public two- and four-year colleges (more than 96 percent) and private nonprofit (96 percent) colleges. It also provides good coverage of for-profit four-year colleges (81 percent), but coverage is relatively low for nonprofit (42 percent) and for-profit (27 percent) two-year colleges. Data from a July 2019 extract cover enrollment outcomes for a five-year (20-quarter) follow-up period following random assignment.

2.3.5 Integrated Postsecondary Education Data System (IPEDS)

The National Center for Education Statistics's IPEDS database includes enrollment, financial, and other information on more than 6,000 public, private not-for-profit, and private for-profit institutions. The Year Up cost-benefit analysis (CBA) uses IPEDS data to calculate five-year averages of the expenditure, revenue, enrollment, and student aid variables used in that analysis, from the 2011-2015 school years.[37]

2.3.6 Additional Data Sources for the Cost Benefit Analysis (CBA)

The CBA also drew on two additional data sources. Statistics on Year Up costs and revenues are based on a report from Year Up showing revenues and expenses for 2013-2014—the period of study enrollment for PACE participants. In addition to cost data, enrollment counts in the report provide the basis for calculating cost per participant in the CBA.

Another CBA data source was interviews with a dozen Year Up corporate partners in 2014-2015, conducted as part of the implementation study (Fein and Hamadyk 2018). Responses to questions about financial and non-financial motivations for participating in Year Up helped to inform assumptions about likely rates of return to employers from investments in Year Up interns.

2.4 Study Design and Analysis Plan

The Abt team used a random assignment research design to estimate the impacts of access to the Year Up program. This design ensures that estimated effects can be attributed to access to the program and not to unmeasured differences in characteristics or external circumstances between individual students with access (treatment group) and without access (control group) to the program. This section describes the study's random assignment procedures, characteristics of the study sample, and methods used in the impact and cost-benefit analyses.

2.4.1 Recruitment and Random Assignment Procedures

The impact study design called for randomly assigning a full year's worth of eligible applicants to either a treatment group that was encouraged to participate in Year Up or a control group that

[37] IPEDS-based unit cost measures in the CBA follow definitions in the Delta Cost Project Database, as described in Hurlburt et al. (2017).

was not allowed to participate. The target number for the treatment group was pegged to the total number of program seats that Year Up sought to fill, and the target number of control group members was set to half that amount. Meeting the targets thus required local admissions teams to over-recruit by 50 percent. The recruitment effort succeeded and generated a total sample of 2,544 young adults, including 1,669 treatment and 875 control group members.

New cohorts start Year Up twice a year. The study enrolled two cohorts in each of the program's eight local offices on a staggered basis between January 2013 and July 2014.[38] Thus, although intake occurred over a two-year calendar period, the sample represents a full year's worth of Year Up recruits at each of the eight offices.

Just prior to random assignment, staff administered an informed consent form and the study's two baseline data collection forms: the BIF and SAQ. After applicants signed the consent form and completed the baseline data collection forms, staff used an online lottery tool developed for PACE to randomly assign them to the treatment or control group. Treatment group members had the opportunity to participate in Year Up (but were not required to enroll). Control group members could not participate in Year Up, but could receive other services available in the community. Program staff normally called study participants to inform them of their group assignments and provided control group members a list of alternative services in the community. Local offices enforced a three-year embargo on Year Up participation for control group members.[39]

2.4.2 Characteristics of the Study Sample

Exhibit 2-2 describes the study sample using a selection of characteristics measured through the BIF.[40] Results show that random assignment in 2013-2014 produced well-balanced treatment and control groups. Of 28 characteristics tested, only one shows a statistically significant difference: parent's education—a result that easily could be due to chance.

Baseline statistics also show that Year Up succeeded in reaching its target population. All sample members were aged 18-24, with a roughly even age distribution within this group. A majority of sample members identified as non-Hispanic Black (54 percent) or Hispanic of any race (31 percent). Men (59 percent) outnumbered women (41 percent), though women account for a higher share of participants in Year Up's heavily IT-focused training program than in IT training generally.[41] Most sample members (68 percent) were living with their parents, and few (9 percent) had children. Many had struggled in high school: 40 percent reported usual grades of C or below, and only 10 percent reported usually receiving A's. About half had attended some college. Nearly two thirds (63 percent) were in families with annual incomes below $30,000.

Although Year Up screens for motivation, levels of training commitment in the Year Up sample were somewhat lower than levels for all PACE sites.[42] About a quarter of Year Up applicants rated themselves as relatively highly motivated, compared with a third for the pooled PACE

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38 That is, one set of offices enrolled two cohorts in January and July of 2013, another in July 2013 and January 2014, and another in January 2014 and July 2014.

39 Control group members who turned 25 during the embargo period (about half of the sample) were not eligible for Year Up when the embargo ended.

40 See Appendix A for definitions and details for these characteristics.

41 For example, in 2014 women accounted for only 20 percent of recipients of associate degrees in computer science nationally. See https://www.nsf.gov/statistics/2017/nsf17310/static/data/tab4-1.pdf.

42 For statistics on all PACE sites, see Abt Associates (2015) and Fein (2016a).

sample. The Year Up sample also was slightly less likely to report significant life challenges interfering with work, school, or family responsibilities (21 percent) than the overall PACE sample (27 percent). Young adults in the Year Up sample were more likely than all PACE participants to have an internet-equipped computer at home (85 versus 72 percent) but less likely to own a car (29 versus 56 percent)—perhaps because many Year Up participants came from central city neighborhoods.

Exhibit 2-2: Selected Characteristics of the Study Sample at Enrollment

Characteristic	All Participants	Treatment Group (T)	Control Group (C)	*p*-Value of Difference (T−C)
Age (%)				.811
18 to 20	42.8	43.2	42.1	
21 to 24[a]	57.2	56.8	58.0	
Female (%)	41.0	41.0	41.0	.992
Race-Ethnicity (%)				.720
Hispanic, any race	31.4	31.6	31.1	
Black, non-Hispanic	53.7	53.6	53.8	
White, non-Hispanic	5.5	5.1	6.2	
Any race, non-Hispanic	8.8	9.7	8.9	
Living Arrangements (%)				.452
Not living with spouse/partner or children	86.6	87.1	85.8	
Not living with spouse/partner, living with children	6.5	6.6	6.2	
Living with spouse/partner, not living with children	4.5	4.2	5.1	
Living with spouse/partner and children	2.4	2.1	2.9	
Living with Parents (%)	68.4	68.8	67.7	.564
At Least One Parent with Some College (%)	55.4	54.0	58.0	.064
High School Grades (%)				.249
Mostly A's	10.4	10.0	11.1	
Mostly B's	49.4	48.6	50.8	
Mostly C's or below	40.3	41.4	38.1	
Educational Attainment (%)				.791
Less than a high school degree	0.6	0.7	0.5	
High school or equivalent	51.8	51.0	53.3	
Less than 1 year of college	22.1	22.3	21.5	
1+ years of college	22.5	22.9	21.8	
Associate degree or higher	3.1	3.1	2.9	
Received Vocational or Technical Certificate or Diploma (%)	18.4	18.9	17.3	.349
Career Knowledge Index (mean)[b]	0.46	0.46	0.47	.625
Psycho-Social Indices (means)[b]				
Academic discipline	5.28	5.28	5.27	.671
Training commitment	5.52	5.52	5.50	.232
Academic self-confidence	5.05	5.04	5.07	.226
Emotional stability	5.33	5.33	5.32	.987
Social support	3.35	3.34	3.36	.135
Stress	2.20	2.21	2.18	.315
Depression	1.59	1.60	1.57	.103
Family Income Last Year (%)				.533
Less than $15,000	37.1	37.3	36.7	
$15,000 to $29,999	25.7	25.0	27.1	
$30,000 or more	37.2	37.7	36.2	

Characteristic	All Participants	Treatment Group (T)	Control Group (C)	*p*-Value of Difference (T−C)
Family Income Last Year (mean $)	27,021	27,287	26,528	.443
Public Assistance in Past 12 Months (%)				
Received WIC or SNAP	32.8	32.6	33.1	.756
Received public assistance or welfare	6.6	6.3	7.3	.352
Financial Hardship in Past 12 Months (%)	29.7	29.4	30.3	.578
Current Work Hours (%)				.490
0	47.6	47.9	47.1	
1 to 19	10.5	10.3	11.0	
20 to 34	26.7	27.4	25.3	
35 or more	15.2	14.5	16.6	
Expected Work Hours in Next Few Months (%)				.866
0	36.3	35.9	37.1	
1 to 19	23.0	23.1	22.7	
20 to 34	31.1	31.5	30.3	
35 or more	9.6	9.4	9.9	
Life Challenges Index (mean)[b]	1.46	1.47	1.45	.264
Owns a Car (%)	28.8	28.7	28.9	.959
Has Computer and Internet at Home (%)	84.9	84.1	86.5	.111
Ever Arrested (%)	16.2	16.6	15.5	.502
Sample size	2,544	1,669	875	

Key: SNAP is Supplemental Nutrition Assistance Program. WIC is Special Supplemental Nutrition Program for Women, Infants, and Children.

Source: Abt Associates calculations based on data from PACE BIF and SAQ.

Note: The means and percentages were calculated without weights. The *p*-values are based on *t*-tests (and for sets of categories, *F*-tests) for differences between the two groups.

[a] A small number of enrollees were accepted to Year Up just prior to their 25th birthdays and had reached age 25 by the time they completed the BIF. For simplicity, this table includes these sample members (less than 1 percent of the sample) in the age 21-24 group.

[b] See Appendix A for definitions of indices and other variables in this table.

2.4.3 Impact Analysis

Prior to estimating impacts, the research team published an analysis plan specifying key hypotheses and outcome measures (see Judkins et al. 2018). The team subsequently assessed data quality, refined the plan, and publicly registered it on the Open Science Framework website.[43] The purpose of the analysis plan and registration was to document the approach and publicly commit to particular hypotheses and an estimation approach. Such practices are consistent with ACF's Evaluation Policy and commitment to rigor, relevance, transparency, independence, and ethics in conducting evaluation.[44]

The impact study estimates:

- **The impact of *the offer* to participate in Year Up—known as the "intent-to-treat" effect—not the impact of actual participation.** That said, a very high percentage of treatment group members—96 percent—accepted the offer and began the program, and 75 percent completed it.
- **The impact of *all components* of Year Up combined, not the impact of specific program components.** Because the offer included access to Year Up's entire array of

[43] See https://osf.io/2gxuh/?pid=wcus9.

[44] See https://www.acf.hhs.gov/opre/resource/acf-evaluation-policy.

services, the random assignment design does not provide a rigorous basis for disentangling what individual program components contributed to impact.

- **The impact of Year Up in the context of other programs available locally.** Both treatment and control group members could access other education, training, and support services in the community**.** The experimental design allows the study to estimate the impacts of Year Up for students who may have had opportunities to participate in other programs and services.

2.4.4 Hypothesis Testing

An essential principle in the PACE analysis plan is to organize and discipline the statistical tests conducted. If the evaluation did not in some way for account multiple hypothesis tests, at least some of the relatively large number of tests conducted would reach conventional levels of statistical significance by chance—even if there was no true effect on these outcomes. This situation is known as the problem of "multiple comparisons." To address the issue, the PACE project established three categories of hypotheses: confirmatory, secondary, and exploratory.

- **Confirmatory hypotheses** involve outcomes most critical to judging whether the program is on track—that is, producing the results expected—at a given follow-up duration. The sole confirmatory outcome for Year Up is *average quarterly earnings in the 12th and 13th quarters after random assignment*, measured using administrative data from the NDNH.

- **Secondary hypotheses** involve a set of additional indicators consistent with expected effects within the period covered by the study report. The number of such secondary hypotheses is kept small to minimize the likelihood of false results due to chance, which increases as the number of tests grows.

  Secondary analyses estimated Year Up's impacts on *annual earnings for up to five years after random assignment*. Survey-based outcomes correspond to the three-year follow-up point, including indicators of *career pathways employment, self-assessed career progress, average household income, health insurance coverage, public benefits receipt, total debt,* and *financial hardship*.

Confirmatory and secondary hypotheses identify the expected direction of impacts—as either an increase or decrease in the outcome. The hypothesized direction is generally an increase in the average level of outcomes, except for expected decreases in debt and financial hardship.

- **Exploratory hypotheses** include a larger number of additional possible effects for related outcomes. Some examples of outcomes for exploratory hypotheses include *quarterly earnings and employment in quarters other than quarters 12 and 13, additional measures of job quality and financial well-being, varied measures of progress in postsecondary education, psycho-social skills, childbearing* and *family structure*. The analysis also treats subgroup analyses as exploratory. Exploratory hypotheses may, but do not necessarily, posit a direction to effects.

2.4.5 Impact Estimation Procedures

Random assignment ensures that, on average, study sample members in the treatment and control groups will have similar characteristics at baseline. Random assignment also ensures that measured differences in subsequent outcomes provide unbiased estimates of program impacts. To address any effects chance differences arising from random assignment might have on estimates, analysts typically estimate impacts using a procedure that adjusts for chance

differences in measured baseline characteristics. The procedure also helps to increase the precision of estimates.

To select baseline characteristics for the adjustment, we included all characteristics with statistically significant treatment-control differences at baseline and an additional set of empirically selected covariates. Appendix A describes the covariate selection approach—a recently developed technique called "least absolute shrinkage and selection operator" (LASSO).[45]

The analysis then included selected covariates in regression-adjustment models used to estimate impacts. Analyses of survey data incorporated weights to adjust for differential nonresponse across groups of study participants.

Once estimated, the analysis tested impacts for statistical significance at the 10 percent, 5 percent, and 1 percent levels. Tests of outcomes corresponding to confirmatory and secondary hypotheses were one-tailed, because expected effects were in a single direction. Exploratory analyses applied two-tailed tests, because the nature and direction of effects were less certain.

Additional details on these and other aspects of the analysis appear in Appendices A-F. A text box at the end of this chapter describes how to read the tables in the impact chapters.

2.4.6 Cost-Benefit Analysis

Cost-benefit analysis (CBA) provides a broad accounting of costs and benefits. A program whose overall benefits exceed its costs is said to generate a net gain for society. One whose benefits are less than its costs is said to produce a net loss.

The Year Up CBA involved four steps: (1) measuring costs and benefits affected by Year Up, (2) calculating the difference between average costs and average benefits, (3) identifying unmeasurable costs and benefits and reflecting on their implications for conclusions, and (4) conducting sensitivity analyses.

Policymakers and other stakeholders are often interested in a program's costs and benefits as experienced by relevant groups of stakeholders, each with a different perspective. CBAs typically consider benefits and costs from the perspectives of program participants, government, and the rest of society. Taken together, these reflect the perspective of "society as a whole." Year Up is unusual among programs targeting low-income populations for its success in securing the bulk of its funding (59 percent) from internship fees paid by for-profit companies (employers). The current study thus adds the perspective of employers to the set of stakeholders typically considered.

The CBA analyzes benefits and costs only for the first five years after random assignment—the follow-up period for the present report. Additional follow-up reports for Year Up will extend follow-up for several years and include projections for lifetime costs and benefits.[46]

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[45] We used LASSO to select covariates that were correlated with key study outcomes. Criterion outcomes included a measure of average earnings based on NDNH records (for analyses of NDNH data), of total months of NSC-based college enrollment (for analyses of education outcomes), and a measure of average earnings based on survey data for all other survey outcomes.

[46] For additional detail on methods, see the analysis plan for the PACE cost-benefit study (Dastrup et al. 2017) and Chapter G of the appendix to this report (Judkins et al. 2021).

How to Read Impact Tables

Many exhibits in Chapters 3-5 follow a common format in reporting impacts.

The left-most column identifies the **Outcome** whose findings appear in each row.

The next column (**Treatment Group**) presents the treatment group's regression-adjusted mean outcome, followed in the next column by the control group's actual mean outcome (**Control Group**). Regression adjustment corrects for random variation in baseline covariates between the two groups and improves the precision of the estimates.

The next column (**Impact**) is the difference between the treatment and control group means—that is, the impact of being offered Year Up. The **Standard Error** column is a measure of uncertainty in the estimated impact that reflects chance variation due to randomization and any measurement error. The column labeled **Relative Impact** presents the impact as a percentage change from the control group mean. It offers a sense of how "big" or "small" the impact of the program on the treatment group is, at least relative to the control group's level.

For outcomes with no natural unit of measurement we report an **Effect Size** instead of the relative impact. The effect size is a standardized measure that defines impacts as a fraction of the pooled standard deviation across the treatment and control groups. It offers a sense of the size of the impact relative to how much the outcome varies across the full sample and allows for comparison of the size of the impact across scale outcomes.

The final column, ***p*-Value**, is the probability that the observed or a larger difference between the treatment and control groups would occur by chance, even if there was in reality no difference between the two groups.

<u>Statistical significance</u>

This report identifies estimated impacts as statistically significant if their associated *p*-values are below .10. The smaller the *p*-value, the more likely that the observed difference between the treatment and control groups is real, rather than occurring by chance. Asterisks distinguish results that are statistically significant:

* at the 10 percent level ($p<.10$)

** at the 5 percent level ($p<.05$)

*** at the 1 percent level ($p<.01$)

Categories of findings

Tests of statistical significance for confirmatory and secondary outcomes are one-sided tests because their associated hypotheses have direction. The impact tables highlight these outcomes using **bolded text.** Tests of significance for exploratory outcomes are two-sided, because we do not have a directional hypothesis. Tables present these outcomes using regular (not bolded) text.

3. Impacts on Earnings and Employment

Year Up's logic model identifies full-time employment as the preferred first step following the program, with hopes that graduates will continue their education and training once their financial circumstances are stable. This chapter presents findings for employment-related outcomes, and the following chapter (Chapter 4) examines education and training outcomes.

This chapter's first two sections start with impacts on a number of earnings outcomes (Section 3.1) and turn then to employment outcomes (Section 3.2). Subsequent sections examine impacts on job characteristics (Section 3.3) and differences in impacts on earnings across subgroups (Section 3.4). Survey-based outcomes center on a three-year follow-up period, while analyses based on National Directory of New Hires wage records (i.e., quarterly employment and earnings) extend to five full follow-up years (20 quarters).

The central finding is that impacts on earnings and employment are positive, large, and remarkably stable over time and across subgroups and local offices.

3.1 Earnings

Year Up had a large positive impact on the confirmatory earnings outcome for this report. The program increased *average quarterly earnings in the 12th and 13th quarters after random assignment* by $1,857—a 38 percent increase (Exhibit 3-1). Average earnings were $6,782 for treatment group members and $4,925 for control group members. The result indicates that Year Up's impacts persisted virtually undiminished after reaching $1,895 in Quarters 6 and 7—the confirmatory outcome in the short-term report (Fein and Hamadyk 2018).[47]

Exhibit 3-1: Impact on Average Earnings in Specified Follow-Up Periods

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	*p*-Value
Confirmatory Outcome: Average quarterly earnings in Quarters 12 and 13 ($)	6,782	4,925	+1,857***	190	37.7	<.001
Average total earnings ($) in follow-up:						
Year 1 (Quarters 0-3)	3,974	9,742	−5,769***	258	−59.2	<.001
Year 2 (Quarters 4-7)	19,245	13,978	+5,267***	501	37.7	<.001
Year 3 (Quarters 8-11)	24,365	17,320	+7,045***	627	40.7	<.001
Year 4 (Quarters 12-15)	27,939	20,326	+7,612***	737	37.4	<.001
Year 5 (Quarters 16-19)	31,176	23,346	+7,830***	822	33.5	<.001
Years 1-5	106,697	84,712	+21,986***	2,360	26.0	<.001
Sample size	1,638	858				

Source: Quarterly wage records obtained in a match to the National Directory of New Hires.

Note: Rows in **bold** identify confirmatory and secondary earnings outcomes. Significance tests are one-sided for confirmatory and secondary outcomes and two-sided for other (exploratory) outcomes. Statistics under "Relative Impact" represent impacts in column 3 as a percentage of the corresponding control group mean (i.e., 100 * [impact / control group mean]).

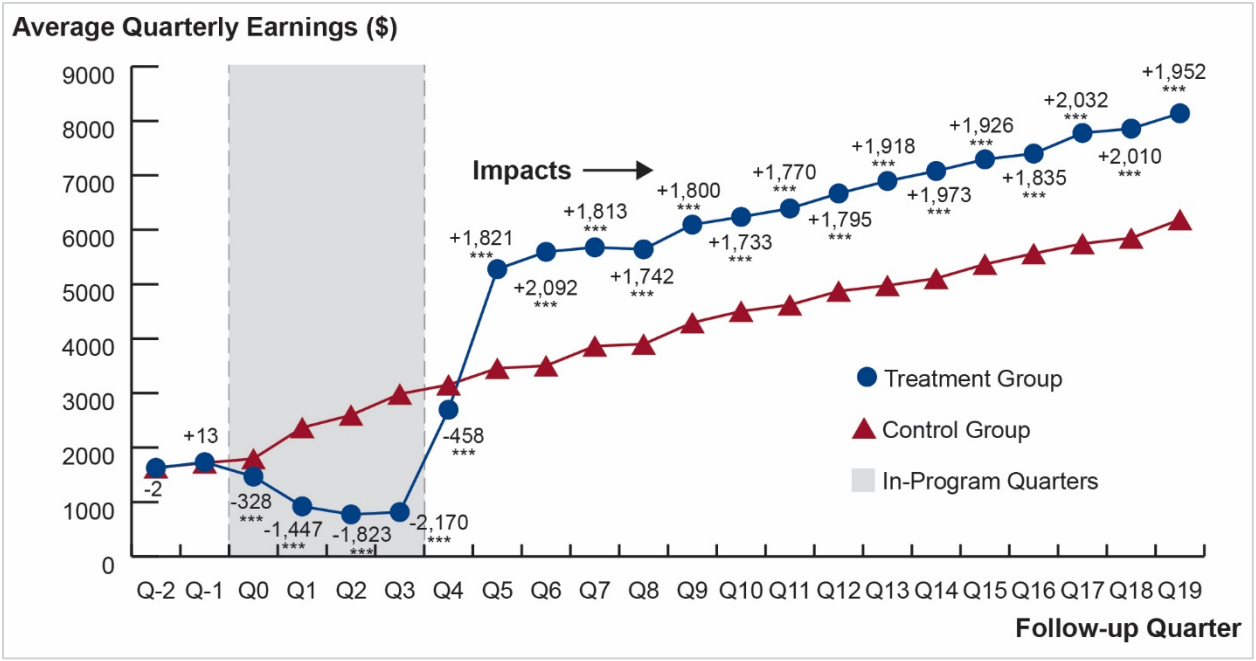
Statistical significance levels based on differences between research groups: * 10 percent level, ** 5 percent level, *** 1 percent level.

[47] Analyses in Appendix E of the technical appendices for this report (Judkins et al. 2021) show very close agreement between earnings impacts estimated with NDNH and survey data.

Year Up reduced earnings in the first year after random assignment by $5,769, as treatment group members were less likely to work while participating in the demanding full-time program (Exhibit 3-1, bottom panel). As pointed out in the short-term report, however, the average treatment group member received $7,172 in Year Up stipends during the same year—more than making up for foregone earnings. The stipend payments are not captured in the NDNH.

Earnings impacts turn positive and large in Year 2 ($5,267). The size of the impact appears to grow with each additional year of follow-up (reaching $7,830 in Year 5), but statistical tests do not find the increases to be statistically significant. This same pattern appears in the quarterly impact estimates in Exhibit 3-2.

Exhibit 3-2: Impact on Average Earnings in Successive Follow-up Quarters



Source: Quarterly wage records obtained in a match to the National Directory of New Hires for 1,638 treatment and 858 control group members.

Statistically significant in a two-tailed test: * 10 percent level, ** 5 percent level, *** 1 percent level.

3.2 Employment and Hourly Wages

Consistent with the short-term impact report, Year Up had little impact on the overall employment rate as measured in the three-year follow-up survey (Exhibit 3-3, first row). Rather, the survey data show that earnings increases discussed above arose from employed treatment group members working more hours and earning higher hourly wages than their control group counterparts (Exhibit 3-3). In particular, treatment group members were more likely to work full time (58 percent) than employed control group members (47 percent). Employed treatment group members earned $3.35 more per hour than their control group counterparts.

In contrast to the survey, NDNH wage records show small positive employment impacts in a number of quarters during follow-up Years 4 and 5 (Exhibit 3-4). The impacts are small (only 3 percentage points) but statistically significant.

Exhibit 3-3: Impacts on Earnings and Employment Outcomes at Three Years

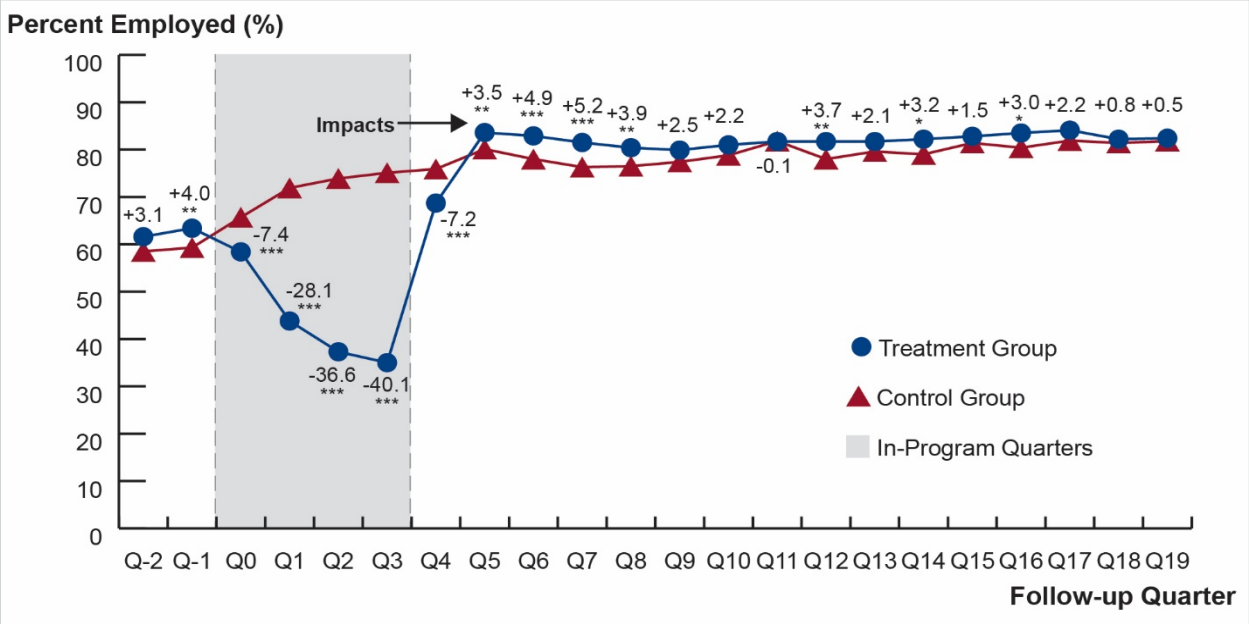
Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	*p*-Value
Hours working per week (%)						
Not currently employed	27.3	28.5	−1.3	2.3	−4.6	.576
1-19 hours	4.0	4.9	−0.8	1.1	−16.3	.448
20-34 hours	10.0	18.8	−8.9 ***	1.9	−47.3	<.001
35+ hours	57.9	46.8	11.1 ***	2.5	23.7	<.001
Total	100.0	100.0				
Average weekly hours	26.8	24.9	2.0 **	0.9	8.0	.037
Median weekly hours	38.4	30.0	8.4 ***	1.7	28.0	<.001
Hourly wages if employed (%)						
$1-9	6.5	7.4	−0.8	1.6	−10.8	.598
$10-14	26.8	48.0	−21.2 ***	3.0	−44.2	<.001
$15-19	27.4	31.3	−4.0	2.8	−12.8	.160
$20-29	30.7	10.0	20.7 ***	2.3	207.0	<.001
$30-39	6.9	1.8	5.2 ***	1.1	288.9	<.001
$40+	1.7	1.5	0.2	0.7	13.3	.804
Total	100.0	100.0				
Average hourly wage if employed ($)	18.55	15.20	3.35 ***		22.0	<.001
Median hourly wage if employed ($)	17.56	14.00	3.56 ***		25.4	<.001
Sample size (all survey respondents)	1,232	583				

Source: PACE three-year follow-up survey.

Note: Estimates for wages are conditioned on employment at the time of the survey and thus not purely experimental.

Statistically significant in a two-tailed test: * 10 percent level, ** 5 percent level, *** 1 percent level.

Exhibit 3-4: Impact on Employment in Successive Follow-up Quarters



Source: Quarterly wage records obtained in a match to the National Directory of New Hires for 1,638 treatment and 858 control group members.

Statistically significant in a two-tailed test: * 10 percent level, ** 5 percent level, *** 1 percent level.

3.3 Job Characteristics

Year Up had substantial, statistically significant positive impacts on a series of job characteristics captured in the survey (Exhibit 3-5). These outcomes include the percentage working in jobs that were full-time, paid $15 per hour or above, required at least mid-level skills,[48] and were in a Year Up target occupation. Year Up had small positive impacts on several indicators of self-assessed career "traction"—including career progress (.21 effect size), confidence in career knowledge (.07 effect size), and access to career network (.17 effect size).

Consistent with Year Up's occupational emphases, employed treatment group members were substantially more likely to be working in IT (31 percent) and business/financial services (21 percent) sectors than were employed control group members (5 and 14 percent, respectively; Exhibit 3-6).

Exhibit 3-5: Impacts on Selected Career Outcomes at Three Years

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	*p*-Value
Indicators of career pathways employment: of all sample members, the percentage who were (%):						
Working at time of survey (any hours)	72.7	71.5	1.3	2.3	1.8	.576
Working full-time (32+ hours/week)	58.8	48.2	10.6 ***	2.5	22.0	<.001
Working and $15/hour or more	48.1	31.5	16.6 ***	2.4	52.7	<.001
Working in job requiring ≥mid-level skills	41.1	21.4	19.7 ***	2.2	92.1	<.001
Working in a Year Up target occupation	42.4	17.2	25.2 ***	2.1	146.5	<.001
Working full-time & Year Up target occupation	37.4	13.8	23.6 ***	2.0	171.0	<.001
Indices of self-assessed career development (average value)						
Perceived career progress (3-item; 1-4 scale)	3.34	3.21	0.12 ***	.04	.17	<.001
Confidence in career knowledge (7-item; 1-4 scale)	3.30	3.26	0.04 *	.03	.07	.094
Access to career network (count of 6 Y/N items)	4.55	4.24	0.30 ***	.09	.17	<.001
Sample size (all survey respondents)	1,232	583				

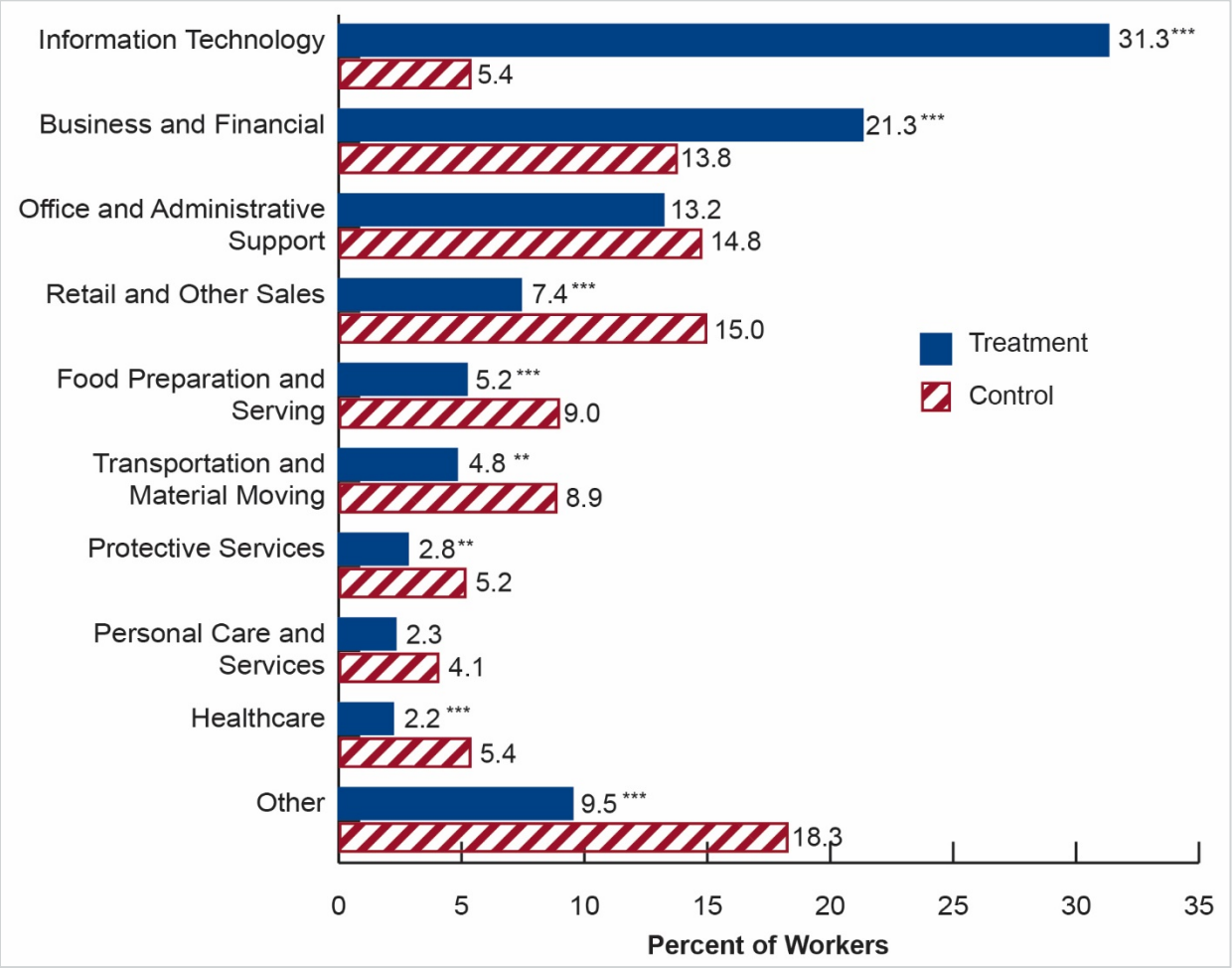
Source: PACE three-year follow-up survey.

Note: Rows in **bold** identify secondary outcomes. Significance tests are one-sided for secondary outcomes and two-sided for other (exploratory) outcomes. Statistics under "Relative Impact" in the top panel represent impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 * [impact / control group mean]). For statistics in the bottom panel, column 5 provides effect sizes (impact / standard deviation for control group).

Statistically significant: * 10 percent level, ** 5 percent level, *** 1 percent level.

[48] Skill levels correspond to a Bureau of Labor Statistics O*NET measure (see Appendix B).

Exhibit 3-6: Percentage of Employed Working in Broad Occupational Sectors in Current/Last Job at Three Years



Source: PACE three-year follow-up survey.

Note: Based on samples of 903 treatment and 414 control group members reporting employment at the time of the survey. Because comparisons are conditioned on employment, they are non-experimental. Statistics incorporate nonresponse weights but are not regression-adjusted.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

3.4 Subgroup Differences in Earnings Impacts

Identifying groups of participants and office locations with smaller and larger impacts can help in deciding where changes in participant recruitment or program supports might help to increase a program's effectiveness. The analysis tested for variation in impacts across the same nine personal characteristics and offices assessed in Fein and Hamadyk (2018) for average earnings in follow-up Quarters 6 and 7. As in the earlier short-term report, the current analysis focuses on differences in impacts on the confirmatory earnings outcome—here, *average quarterly earnings in the 12th and 13th quarters after random assignment*. Supplemental Exhibit S-3 provides estimated subgroup impacts for total earnings over the entire five-year follow-up period.

The analysis considers results from two kinds of statistical significance tests for each characteristic. The first test assesses whether observed differences in impacts *between* subgroups are larger than expected by chance (summarized as daggers in header rows in Exhibit 3-7). The second test assesses whether the impact *within* each subgroup differs from zero (summarized as stars). The tests both adopt a 10 percent threshold for statistical significance and are two-tailed.

Although the size of impacts varies for several characteristics (as discussed below), the most striking feature of the results is the consistency of large positive effects across subgroups. Impacts on quarterly earnings are positive, large, and statistically significant for every subgroup and office. The earnings impacts range across subgroups defined by participants' characteristics from about $1,300 to nearly $3,000.

Tests for differences in impact magnitudes nevertheless do show statistically significant differences for several characteristics.[49] Impacts are smaller for participants with weaker educational backgrounds compared to those with stronger educational backgrounds at the time of random assignment (based on usual high school grades and prior college experience). Weaker academic backgrounds likely made it harder to handle Year Up coursework.

Patterns of impacts by level of motivation ("Training Commitment") for Quarters 12-13 are similar to those seen both in analyses of Quarters 6-7 for the prior short-term report (Fein and Hamadyk 2018) and in supplementary analyses of total earnings over the five-year follow-up period for the current report.[50] For all three follow-up periods, point estimates for earnings impacts are *smaller* for the *most motivated* group (i.e., Year Up applicants scoring in the top third on a 10-item scale administered at baseline) than for the two less motivated groups. Differences in impact by level of motivation for Quarters 12-13 just miss the 10 percent significance level in Exhibit 3-8 (at p=.100). A *post hoc* test comparing the two less motivated groups pooled versus the most motivated group does show a statistically significant difference (p=.042), however. That test suggests that the most highly motivated applicants in the sample may have had somewhat less need for Year Up's services than less motivated applicants did.

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[49] Care is needed in interpreting results from multiple tests, as the likelihood of finding at least one spurious difference due to chance increases with the number of characteristics tested. With 10 characteristics, we would expect to find one significant difference by chance at the 10 percent level if sampling could be repeated a large number of times. Three characteristics (denoted by daggers) have statistically significant differences—more than the single difference expected by chance. There is thus a high likelihood of real variability in impacts.

[50] See Supplemental Exhibit S-3.

Exhibit 3-7: Impacts on Average Quarterly Earnings in Follow-Up Quarters 12 and 13, by Subgroup

Characteristic (*p*=probability of no difference in impacts)	Treatment ($)	Control ($)	Impact ($)	Relative Impact	Subgroup Sample Size	
					Treatment	Control
Age (*p*=.888)						
<20	5,970	4,257	1,713 ***	40.2	419	219
20-22	6,985	5,127	1,859 ***	36.3	782	386
23-24	7,164	5,197	1,967 ***	37.8	437	253
Gender (*p*=.838)						
Male	6,979	5,155	1,824 ***	35.4	968	506
Female	6,496	4,595	1,901 ***	41.4	670	352
Race-Ethnicity (*p*=.130)						
Hispanic, any race	7,611	5,737	1,875 ***	32.7	524	273
Black, non-Hispanic	5,770	4,200	1,570 ***	37.4	888	462
White/Another race, non-Hispanic	8,781	5,850	2,931 ***	50.1	226	123
Usual High School Grades (*p*=.040)			††			
C's or below	6,240	4,851	1,388 ***	28.6	675	328
A's and B's	7,149	4,971	2,178 ***	43.8	963	530
Educational Attainment (*p*=.088)			†			
High school	6,159	4,698	1,460 ***	31.1	842	462
<1 year college	6,679	4,547	2,132 ***	46.9	366	183
1+ year college	8,190	5,742	2,448 ***	42.6	430	213
Training Commitment (*p*=.100)						
Low	6,866	4,887	1,979 ***	40.5	548	279
Medium	6,942	4,643	2,300 ***	49.5	503	283
High	6,567	5,232	1,335 ***	25.5	587	296
Depressive Symptoms (*p*=.562)						
Low	7,092	4,986	2,106 ***	42.2	663	358
Medium	6,851	5,124	1,727 ***	33.7	347	213
High	6,368	4,702	1,667 ***	35.5	628	287
Life Challenges (*p*=.808)						
Low	7,263	5,249	2,015 ***	38.4	630	336
Medium	6,939	5,228	1,711 ***	32.7	480	257
High	6,034	4,222	1,812 ***	42.9	528	265
Expected Work Hours (*p*=.591)						
<10/week	6,265	4,329	1,936 ***	44.7	637	341
10-29/week	7,381	5,450	1,931 ***	35.4	720	363
30+/week	6,490	5,010	1,480 ***	29.5	281	154
Office (*p*=.006)			†††			
A	5,119	4,162	956 **	23.0	161	85
B	7,334	5,986	1,348 ***	22.5	316	161
C	7,170	5,810	1,361 ***	23.9	156	85
D	6,414	4,588	1,826 ***	39.8	242	120
E	5,520	4,045	1,475 ***	36.6	173	98
F	6,108	4,184	1,923 ***	46.0	273	149
G	7,210	5,403	1,807 ***	33.4	158	82
H	9,954	5,143	4,811 ***	93.6	159	78
Sample size (all respondents)	1,638	858				

Source: Average annual earnings calculated from quarterly wage records obtained in a match to the National Directory of New Hires. Characteristics as measured in PACE baseline survey.

Note: See Appendix A for definitions of characteristics.

Daggers appearing in a label row ("Impact" col) for each panel identify those for which subgroup impacts differ, based on a two-tailed test: † 10 percent level; †† 5 percent level; ††† 1 percent level. Associated *p*-values shown immediately to the right of characteristics' names.

Stars summarize tests of whether impacts for individual subgroups are statistically significant, based on a two-tailed test: * 10 percent level, ** 5 percent level; *** 1 percent level.

Patterns by race-ethnicity also are similar to those in the analyses of Quarters 6-7 for the short-term report (Fein and Hamadyk 2018) and new analyses of total earnings over a five-year follow-up period for the current report. Those patterns show the largest impacts for youth who identified as White, non-Hispanic and somewhat smaller impacts for youth who identified as Hispanic of any race and Black, non-Hispanic. Differences by race-ethnicity meet the 10-percent standard for Quarters 6-7 and for the five-year follow-up period (at $p<.10$) but narrowly miss it in analyses for Quarters 12-13 ($p=.130$).[51]

Impacts also evidence statistically significant variation across local Year Up offices ($p<.006$). Estimates range from $956 to $4,811, falling mostly between $1,300 and $1,900.[52] The office with the largest impact (at $4,811) also had the largest impact in the earlier short-term report (at $3,666). The findings thus suggest that local conditions matter.[53]

[51] *Post hoc* tests of differences for each pairings of race-ethnicity groups in Quarters 12-13 show a statistically significant difference between Whites and Blacks ($p<.01$), but no difference between Whites and Hispanics or between Hispanics and Blacks.

[52] The exhibit anonymizes offices. Offices are identified by same letters in Fein and Hamadyk (2018).

[53] Possible explanations include differences in local job markets, program implementation, or both. The number of offices was too small to assess such factors statistically.

4. Impacts on Postsecondary Education and Training

Although full-time employment is Year Up's main goal, the program's logic model also embodies an expectation that graduates will continue in college once their employment situations are stabilized. Program components addressing this goal include basic academic skills instruction and co-enrolling participants at local colleges (see Chapter 1). Because Year Up puts much more emphasis on employment outcomes than on educational ones, tests in this chapter treat educational outcomes as exploratory.

The chapter examines impacts on college enrollment and credits (Section 4.1), credentials (Section 4.2), and educational aspirations (Section 4.3). It then assesses the degree to which impacts on education and employment tend to coincide or diverge (Section 4.4).

This chapter extends analyses of education outcomes in the short-term report (Fein and Hamadyk 2018). The chapter's analyses draw on data from the three-year follow-up survey as well as administrative data from the NSC and the NDNH extending to five years (20 quarters).

4.1 Enrollment and College Credit

As documented in the short-term report, Year Up substantially *increased* the percentage of its students with any college enrollment in the first year after random assignment (by 32 percentage points; Exhibit 4-1) — reflecting co-enrollment during the program. Enrollment for treatment group members then plummeted in Year 2—declining to a level 7 percentage points *below* the control group.

Exhibit 4-1: Impacts on College Enrollment in Follow-Up Years 1-5 (NSC Data)

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	*p*-Value
Percentage ever enrolled during:						
Year 1 (Quarters 0-3)	64.3	32.4	31.9 ***	1.9	98.5	<.001
Year 2 (Quarters 4-7)	26.2	32.7	−6.6 ***	1.9	−20.2	<.001
Year 3 (Quarters 8-11)	25.9	26.3	−.4	1.8	−1.5	.832
Year 4 (Quarters 12-15)	22.8	22.8	0.0	1.7	0.0	.988
Year 5 (Quarters 16-19)	20.4	20.3	0.0	1.7	0.0	.981
Average total months in Years 1-5	11.6	9.7	1.8 ***	0.52	18.6	<.001
Average total full-time-equivalent months in Years 1-5	8.2	7.2	1.0 **	0.41	13.9	.015
Sample size	1,668	871				

Source: Match to college records in the National Student Clearinghouse.

Note: Statistics under "Relative Impact" represent impacts in column 3 as a percentage of the corresponding control group mean (i.e., 100 * [impact / control group mean]).

Statistically significant in a two-tailed test: * 10 percent level, ** 5 percent level, *** 1 percent level.

Extended analyses of NSC data in Exhibit 4-1 show that college enrollment rates for the two groups did not differ between Years 3 and 5. For both groups, the percentage enrolled fell from 26 to 20 percent between Years 3 and 5. The boost in Year 1 nonetheless was sufficient to create statistically significant positive impacts on total months enrolled over the

entire five-year follow-up period (1.8 and 1.0 months for any and full-time equivalent enrollment, respectively, as shown in Exhibit 4-1's last two rows).[54]

Analyses of three-year survey data show no impact on training at schools other than colleges. Only 3 to 4 percent of treatment or control group members reported enrollment in non-college training programs at the time of the survey (Exhibit 4-2).

Exhibit 4-2: Impacts on Education and Training at Three Years (Survey Data)

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	*p*-Value
Since random assignment, ever enrolled in:						
A college	52.2	54.2	−2.0	2.5	−3.7	.420
Another education/training institution	53.5	16.0	37.4 ***	2.1	233.7	<.001
Any education/training program	90.6	66.6	24.0 ***	2.1	36.0	<.001
At three-year survey, percentage enrolled in:						
A college	18.9	20.2	−1.3	2.0	−6.4	.525
Another education/training institution	2.7	4.0	−1.3	.9	−35.0	.176
Any education/training program	21.6	24.2	−2.6	2.2	−10.7	.233
Average number of college credits received	16.2	18.2	−2.0	1.5	−11.0	.181
Percentage who received credential since random assignment from:						
A college						
Certificate requiring >1 year of study	8.9	10.4	−1.5	1.5	−14.4	.309
Associate degree or higher	4.4	8.5	−4.2 ***	1.3	−49.4	<.001
Any credential	16.7	13.9	2.7	1.8	19.4	.129
Another education/training institution						
Credential requiring >1 year of study	8.5	2.3	6.3 ***	1.1	273.9	<.001
Any credential	31.6	8.5	23.1 ***	1.8	271.8	<.001
A licensing/certification body	36.4	19.8	16.6 ***	2.2	83.8	<.001
Any source	61.5	33.6	27.9 ***	2.5	83.0	<.001
Sample size (all survey respondents)	1,232	583				

Source: PACE three-year follow-up survey, with statistics for license/certification receipt blending responses at three years with earlier responses in the PACE 18-month survey.

Note: Estimates for ever enrolled in training at "another education/training institution" in the second row suggest that many treatment group members did not report their Year Up participation in the three-year survey, since we know from Year Up records that 96 percent did enroll in the program (and 75 percent completed it). Some respondents may have misreported this participation as college enrollment. As documented in Appendix C, treatment group members also tended to under-report Year Up-related college enrollment in Year 1 (Judkins et al. 2021). Statistics under "Relative Impact" represent impacts in column 3 as a percentage of the corresponding control group mean (i.e., 100 * [impact / control group mean]).

Statistically significant in a two-tailed test: * 10 percent level, ** 5 percent level, *** 1 percent level.

Whereas in the 18-month survey treatment group members reported receiving an average of four more credits than control group members did (12 and 8 credits, respectively), the difference had disappeared by the time of the three-year follow-up (see Exhibit 4-2): treatment and control group members reported receiving a similar number, averaging 16 and 18 credits, respectively.

[54] See also the quarter-by-quarter estimates for impacts on cumulative enrollment in Supplemental Exhibit S-4.

4.2 Credential Receipt

Survey data show no impacts on receipt of any college credential (Exhibit 4-2), whereas the NSC data show positive impacts (Supplemental Exhibit S-5). Likely reflecting short-term certificates granted by several college partners for Year Up completion, the NSC-based impact estimates reached seven percentage points by Quarter 5 and declined gradually thereafter.

This discrepancy in impacts on receipt of any college credential may arise from misclassification of Year Up-related college credentials in the survey. When asked about credentials from non-college training programs, substantially more treatment than control group members reported receipt (bottom panel of Exhibit 4-2). It is possible that respondents credited some college credentials granted for Year Up completion as coming from Year Up rather than the program's college partners.

The survey and NSC data both show a small *negative* impact on receipt of college degrees (i.e., an associate degree or above), however. In the survey data, four percent of treatment group members received a degree, compared with eight percent of control group members—a four percentage point reduction (see Exhibit 4-2). NSC estimates show a smaller, but statistically significant two percentage point reduction in degree receipt (see Supplemental Exhibit S-4).

The three-year survey data also show higher receipt of exam-based certifications and licenses from a licensing/certification body for treatment than for control group members (36 and 20 percent, respectively).[55] Most of this impact probably occurred during or soon after students completed Year Up: the three year rates are little changed from those in the 18-month survey (31 and 13 percent, respectively).

4.3 Psycho-Social Aspects of Education

The analysis measured impacts on two psycho-social aspects of education (academic self-confidence and future educational aspirations). **Findings show no impact on either psycho-social indicator (see Exhibit 4-3).**

[55] Although the analysis plan originally classified certification/license receipt as a secondary outcome, closer consideration prompted a decision to classify the outcome as exploratory in the study registration. As explained in Fein & Hamadyk (2018), although Year Up staff sometimes supported efforts to help participant obtain these credentials, their receipt was not an important emphasis in the program's logic model. This decision and study registration preceded data analysis for this report.

Exhibit 4-3: Impacts on Educational Aspirations and Academic Self-Confidence at Three Years

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	*p*-Value
Index of academic self-confidence (12-item, 1-6 scale)	5.14	5.11	.03	0.04	.05	.356
Highest level of education expected (%)						
Bachelor's degree or higher	71.5	67.9	3.6	2.4	5.3	.131
Associate degree	16.8	18.6	−1.8	2.0	−9.7	.373
Less than associate degree	11.7	13.5	−1.8	1.7	−13.3	.301
Total	100.0	100.0				
Sample size (all survey respondents)	1,232	583				

Source: PACE three-year follow-up survey.

Note: Statistics in column 5 are effect size (impact / standard deviation for control group) for index of academic self-confidence and relative impacts (100 * [impact / control group mean]) for highest level of education.

Statistically significant in a two-tailed test: * 10 percent level, ** 5 percent level, *** 1 percent level.

4.4 School Versus Work

As mentioned at the beginning of the chapter, though Year Up places a strong emphasis on full-time work after program completion, it also aims to position its graduates to continue in college after their financial circumstances are stable. But analyses in earlier sections show little evidence of positive impacts on enrollment in the longer term. One possible interpretation is that increases in employment and earnings reduced time and incentives to return to school. This section looks more directly at the connections between Year Up's effects on work and school.

Statistically significant differences in impacts across local offices for both earnings and college enrollment at the end of the third follow-up year provide one opportunity to explore this relationship.[56] Exhibit 4-4 summarizes the relationship between office-level impacts on earnings and on college enrollment in follow-up Quarters 12 and 13. **The graph shows a negative relationship: offices with the largest *positive* impacts on earnings in Quarters 12-13 tended to have the largest *negative* impacts on college enrollment in the same quarters.** The correlation between the two impacts is fairly large (r=−.83).[57]

Cross-tabulations of survey-ascertained activities in month 36 show the relationship between work and school at the individual level (see Exhibit 4-5). **Young adults who were working full-time had substantially lower rates of school enrollment in both the treatment and control groups (15 and 18 percent, respectively) than those who were not working (24 and 37 percent, respectively).**[58] As the latter figures indicate, significantly fewer non-working treatment than non-working control group members were enrolled in school—suggesting that Year Up may have increased preferences for work over school even during spells of unemployment.

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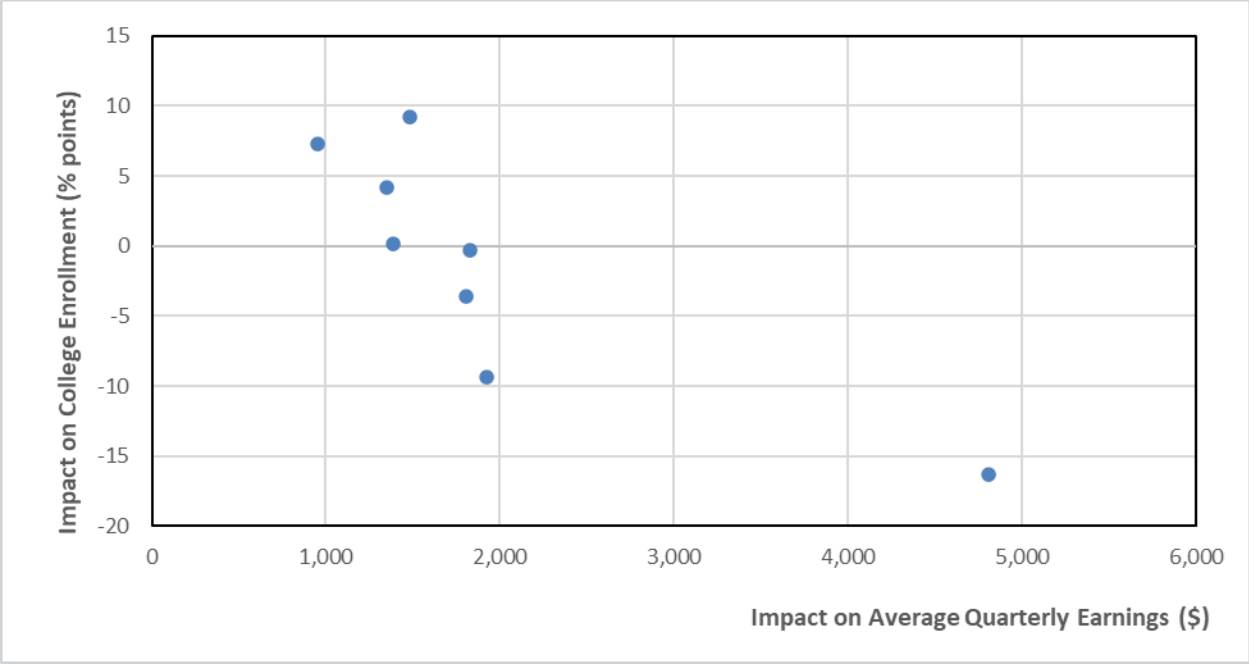
[56] Subgroup analyses for college enrollment showed differences in impacts across local offices (p<.01) but impacts did not vary for other characteristics. To conserve space in this chapter, we provide results as a supplemental table (Exhibit S-7) at the end of this report.

[57] Removing the outlier observation in the graph's lower-right section reduces the correlation slightly (to r=−.77).

[58] Because they condition on a status (employment) subject to influence by the intervention, these comparisons are non-experimental.

Exhibit 4-4: Impacts on Average Quarterly Earnings and College Enrollment in Quarters 12 and 13, by Office



Source: Matches to quarterly wage records in a match to the National Directory of New Hires and to college records in the National Student Clearinghouse.

Note: The correlation between impacts on earnings and on college enrollment is −.83 overall and −.77 removing the extreme value in the lower right-hand corner. The corresponding *p*-values are .010 and .041, respectively.

Together these findings suggest that sustained increases in full-time work will not necessarily lead to increased college enrollment. Perhaps providing additional follow-on coaching and financial supports to program graduates could help to bring such impacts. In the shorter run, for participants with strong college aspirations, Year Up also might put more emphasis on transitions to college combined with part-time employment following the program for participants.[59]

Exhibit 4-5: Percentage Enrolled in School, by Employment Status in Follow-up Month 36

	Employment Status			
School Enrollment Status	Full-Time	Part-Time	Not Working	Full Sample
Percentage of treatment group in:				
Full-time education/training	6.4	17.6	14.3	9.9
Part-time education/training	8.9	9.9	10.1	9.3
No education/training	84.7	72.5	75.6	80.6
Total	100.0	100.0	100.0	99.8
Sample size	752	162	318	1,232

[59] See Fein et al. (2020) for discussion and recommendations addressing the tensions between work and school following completion of Year Up's next-generation college-based Professional Training Corps.

School Enrollment Status	Employment Status			Full Sample
	Full-Time	Part-Time	Not Working	
Percentage of control group in:				
Full-time education/training	9.0	19.0	20.8	14.3
Part-time education/training	9.0	12.4	16.6	11.7
No education/training	82.1	68.6	62.5	73.8
Total	100.1	100.0	99.9	99.8
Sample size	300	132	151	583

Source: PACE three-year follow-up survey school and employment histories, analyzed for follow-up month 36.
Note: Column totals do not always add exactly to 100.0 due to rounding.

5. Impacts in Other Domains

Given large impacts on earnings, Year Up's theory of change suggests radiating effects on more distal outcomes. The analysis considered outcomes in three potentially affected domains: financial status, family formation, and other dimensions of adult well-being.

5.1 Financial Status andRelated Strains

Pre-registered secondary hypotheses in this domain included that Year Up would increase average household income and health insurance coverage; and reduce reliance on means-tested public benefits, average total debt, and the average number of nine types of financial hardships experienced in the past year.

Results were mixed (Exhibit 5-1). The estimated impact on average annual household income, $1,931 (a 4 percent increase), is not statistically significant and is substantially smaller than the $4,306 impact on personal income, which is statistically significant.

Exhibit 5-1: Impacts on Financial Status and Related Strains at Three Years

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	*p*-Value
Financial Status						
Household income (annualized $)						
Average	48,251	46,320	1,931	1,574	4.2	.213
Median	42,566	38,400	4,166 **	1,964	10.8	.034
Personal income (annualized $)						
Average	24,913	20,607	4,306 ***	894	20.9	<.001
Median	23,616	18,000	5,616 ***	1,605	31.2	<.001
Percentage receiving Earned Income Tax Credit	51.1	46.3	4.9 *	2.6	10.6	.065
Percentage with health insurance	85.4	83.9	1.5	1.9	1.8	.213
Percentage w/someone in household receiving means-tested public benefits last month	42.8	47.9	−5.2 **	2.6	−10.9	.026
Debt (average $)						
Student loans (own name)	1,277	2,530	−1,253 ***	302	−49.5	<.001
Student loans (parent's name)	202	362	−160	117	44.2	.174
Other debt	2,777	3,875	−1,098	685	−28.3	.109
Total unsecured debt	4,330	6,825	−2,495 ***	805	−36.6	<.001
Related Strains						
Average number of nine types of financial hardships in last 12 months (range: 0-9)	.78	.93	−0.15 **	0.08	−.10	.031
Index of life challenges (5-item, 1-5 scale)	1.53	1.60	−0.07 **	0.03	−.12	.017

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	*p*-Value
Index of perceived stress (4-item, 1-4 scale)	2.01	2.10	−0.05	0.04	−.06	.248
Sample size (all survey respondents)	1,232	583				

Source: PACE three-year follow-up survey.

Note: Rows in **bold** identify secondary outcomes. Significance tests are one-sided for secondary outcomes and two-sided for other (exploratory) outcomes. Statistics under "Relative Impact" in the top panel represent impacts in column 3 as a percentage of the corresponding control group mean (i.e., 100 * [impact / control group mean]). For statistics in the bottom panel, column 5 provides effect sizes (impact / standard deviation for control group).

Statistically significant: * 10 percent level, ** 5 percent level, *** 1 percent level.

The difference between impacts on household and personal income may be partly due to increased fractions of young adults living in households without a parent or spouse.[60] Such households tend to have lower incomes because they contain fewer income earners. The rest of the difference reflects reduced household income for young adults who do live in such households.[61]

Year Up also had no effect on health insurance coverage. In contrast, the results do show expected reductions in public benefits receipt (−5 percentage points, an 11 percent effect); average total unsecured debt (−$2,495, a 37 percent effect); and average number of financial hardships (−0.15, a 16 percent effect). More than half of the reduction in debt is due to reduced borrowing for education (−$1,253 impact), likely because treatment group members received Year Up training at no charge and had slightly lower rates of college enrollment compared to the control group in Year 2.

5.2 Family Formation

Theory and non-experimental evidence give reasons to expect Year Up's large impacts on earnings to affect family formation and living arrangements. **Results provide suggestive evidence that Year Up led some young adults (mainly women) to postpone marriage while allowing others (mainly men) to leave their parents' home.** Since hypotheses were not pre-specified, the findings should be treated with caution. They do, however, echo results from observational studies of the connections between economic opportunity and marriage, childbearing, and living separately from parents.

Non-experimental analyses have found that college attendance and completion reduce the probability of marriage and childbearing for young adults from economically disadvantaged backgrounds. One possible explanation is that college and career require more energy and focus when they are not the usual pursuits for one's social group, leaving less time to start a family (Brand and Davis 2011, Musick et al. 2012). For reduced marriage, another possible explanation is that improved career prospects alter the marriage markets that young adults face—increasing incompatibility with less employable peers in their (lower-status) groups of

60 Exhibit 5-2 in the next section shows 4 percentage point reductions in both the percentage living with parent and percentage living with a spouse. Though nearly identical, only the latter is statistically significant.

61 One possible explanation for smaller household income impacts in such living arrangements is that young adults may be more likely to live with parents or a spouse/partner when these other adults have greater financial needs. Other possibilities are that Year Up-related income tends to decrease public benefits and increase tax payments more at the household than at the individual level.

origin, but not bringing them into the same social circles as potential partners in higher-status groups (Musick et al. 2012).

Concerning young adults' living with their parents, discussions in the literature treat independence and space as "normal goods"—that is, things young adults tend to consume more of as their means improve. Studies of home-leaving have found economic resources to be one of the most consistent predictors of living independently (Britton 2013, Lei and South 2016, Warner and Houle 2018).

We might expect similar effects from programs such as Year Up that immerse young adults in a year of intensive training and move many into full-time career-track jobs.

Findings for the overall sample show a statistically significant, 4 percentage point reduction in the percentage of study participants living with a spouse (p<.05, Exhibit 5-2, column 3). As noted below, results also show a similarly sized reduction in the percentage living with parents, as expected, although this effect does not reach statistical significance.

Exhibit 5-2: Impacts on Family Structure and Childbearing by Gender at Three Years

	All Respondents			Women			Men			(10)
Outcome	(1) Treatment	(2) Control	(3) Impact	(4) Treatment	(5) Control	(6) Impact	(7) Treatment	(8) Control	(9) Impact	Women v. Men
Living with: (%)										
Parents	49.3	53.2	−3.8	42.6	44.1	−1.5	53.1	60.1	−7.0**	.274
Spouse	13.6	17.5	−3.9**	16.8	23.3	−6.5**	11.2	12.9	−1.7	.208
Partner	9.6	8.0	1.6	11.4	10.2	1.3	8.2	6.2	2.0	.798
Own/partner's child	20.5	22.5	−2.0	34.3	39.6	−5.3	10.7	12.8	−2.0	.445
Spouse/partner and:										
Own/partner's child	10.2	11.7	−1.5	14.5	15.3	−.8	7.2	9.7	−2.5	.609
No child	12.9	13.5	−.7	13.8	17.9	−4.1	12.0	9.1	2.9	.044 ††
No spouse/partner and:										
Own child	10.1	10.5	−.4	19.6	23.8	−4.2	3.4	2.7	.7	.155
No child	66.5	63.5	2.9	51.9	42.0	9.9***	77.0	77.8	−.8	.023 ††
Birth since random assignment or currently pregnant (%)	NA	NA	NA	21.4	20.1	1.3	NA	NA	NA	NA
Sample size	1,232	583		518	239		714	344		

Source: PACE three-year follow-up survey.

Daggers identify outcomes for which impacts differ by gender in a two-tailed test: † 10 percent level; †† 5 percent level; ††† 1 percent level.

Stars summarize tests of whether impacts shown for women, men, and all respondents are statistically significant in a two-tailed test: * 10 percent level, ** 5 percent level, *** 1 percent level.

The gender difference in impacts on living with a spouse is not statistically significant (p=.208). The observed difference in point estimates—showing a larger, statistically significant impact for women and little sign of effect for men—could be due to chance. On the other hand, that impacts on a closely related outcome—the probability of living with both a spouse/partner and an own child—also show larger reductions for women than men (with the difference significant at p<.05) tends to bolster the case for differential effects.[62]

Furthermore, analyses of another PACE program—VIDA—show a statistically significant (p<.05) gender difference in marriage impacts consistent with the Year Up results (Rolston et al. forthcoming). VIDA produced a 14 percentage point reduction in the percentage of women living with a spouse or partner (p<.01) but had no statistically significant effect for men.

Why these two programs both might reduce marriage is uncertain, as their logic models at first appear quite different—Year Up places a strong emphasis on work experience and employment after one year, whereas VIDA emphasizes college credential completion. A noteworthy similarity, however, is that both programs require full-time participation and are in that respect the most demanding, on average, of the nine PACE programs. The notion that more immersive and demanding career experiences would displace marriage more than other programs fits with the "energy and focus" and "marriage market" hypotheses mentioned above. It is unclear why effects might be larger for women. One review of mostly non-experimental studies concluded that improved economic situations generally hastened marriage for low-income men but had more mixed effects, sometimes delaying marriage, for women (Burstein 2007).

There is little sign that Year Up affected having children through this follow-up point. Nearly identical percentages of female treatment and control group members (21 and 20 percent, respectively) reported that they had given birth since random assignment or were pregnant at the time of the three-year survey.[63] There is suggestive evidence that Year Up may have affected the living arrangements of women's children, however: the percentage of study participants living with their own children was 5 percentage points lower in the treatment than the control group. The impact does not reach statistical significance at conventional levels, however (p=.148).

Moving out from one's parents' home is an important marker of adulthood. The percentage of young adults living with parents declined by 4 percentage points in the overall sample, an effect that also does not reach statistical significance (p=.126).

Though impacts on living with parents appear to differ by gender, this difference also is not large enough to reach statistical significance (p=.274). Based solely at the point estimates, there is a statistically significant 7 percentage point decline (p<.05) in the percentage of men living with their parents but little sign of an effect for women. This Year Up gender pattern resembles VIDA's, and thus provides some cause for treating it as plausible. Rolston et al. (forthcoming) report that VIDA reduced the percentage of men living with their parents by 11 points, whereas it increased the percentage of women living with their parents by only 5 points (p<.05 for the difference in impacts).

Results in this section should be treated with caution. We did not pre-specify hypotheses for gender differences in family formation impacts; and some, but not all, of the results reached

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[62] The exhibit also shows that Year Up reduced the percentage living with only a spouse/partner (that is, with no child) for women but not for men. That gender difference in impacts is statistically significant (p=.04), though neither point estimate (−4 for women and +3 for men) is significant.

[63] The survey did not ask men whether they had fathered children during the follow-up period.

conventional statistical significance thresholds. Furthermore, RCTs for at least two other programs for young adults have found somewhat different effects. Notably, an eight-year follow-up survey found that Career Academies increased the likelihood that young men would be living with a spouse or child and decreased the likelihood that women would be living with their parents (Kemple 2008). Four-year results for Job Corps were different: They showed a small increase in the fraction of women who were living with a spouse but no effects for men (Mamun 2007).[64]

Such differences suggest that impacts on family formation will depend on the characteristics of young adults and programs involved as well as the length of follow-up. Planned longer-term analyses for Year Up will help to establish whether the three-year findings reported here foreshadowed more substantial shifts in family formation outcomes.

5.3 Other Dimensions of Adult Well-Being

Year Up produced to small reduction in the average number of reported life challenges, but had no impact on several other facets of well-being. The latter included standard measures for perceived stress, social support, core self-evaluation, and grit (Exhibit 5-3).[65]

Exhibit 5-3: Impacts on Psycho-Social Outcomes at Three Years

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Effect Size	*p*-Value
Index of life challenges (5-item, 1-5 scale)	1.53	1.60	−0.07**	.03	−.12	.017
Index of perceived stress (4-item, 1-4 scale)	2.01	2.10	−0.05	.04	−.06	.248
Social support (10-item, 1-4 scale)	3.56	3.57	−0.01	.03	−.02	.645
Core self-evaluation (12-item, 1-4 scale)	3.19	3.17	0.02	.02	.04	.498
Grit (7-item, 1-4 scale)	3.37	3.36	0.01	.02	.03	.584
Sample size (all survey respondents)	1,232	583				

Source: PACE three-year follow-up survey.

Note: Effect sizes are calculated as impact / standard deviation for control group.

Statistically significant in a two-tailed test: * 10 percent level, ** 5 percent level, *** 1 percent level.

The lack of effects for the first two outcomes—despite large impacts on earnings and employment—may bolster the traditional view of these constructs as being stable personality traits, rather than the more recent tendency to emphasize their potential malleability.[66] Such an

[64] RCTs of other employment and training experiments have not found marriage effects for either gender (Scheider 2015).

[65] "Core self-evaluation" is a composite index of self perception reflecting self-esteem and self-efficacy. Grit is an indicator of determination and persistence. See Appendix B in the accompanying appendix volume (Judkins et al. 2021) for additional details on measures.

[66] For example, Whitehurst (2016a, 2016b) argues that measures of grit mostly capture inherited personality traits that are not very malleable. He recommends that schools and evaluators focus on behavior and take steps to identify and measure attitudes and skills that are malleable.

interpretation must be considered tentative, as “reference bias” and other errors in comparisons of self-reported psycho-social attributes also are plausible explanations.[67]

[67] In this context, “reference bias” refers to the possibility that Year Up led young adults to judge themselves more critically by increasing their awareness of the importance of strong psycho-social skills. See Duckworth and Yeager (2015) and West et al. (2016) for evidence on reference bias.

6. Cost-Benefit Analysis

This chapter presents a cost-benefit analysis (CBA) for Year Up, summarizing benefits and costs for the first five years after random assignment. The CBA estimates Year Up's financial ***benefits*** and compares them to the ***costs*** incurred to produce these benefits, resulting in an estimated ***net benefit*** (see "Key Terms" box). A program whose benefits exceed its costs is considered to represent a gain, whereas the opposite is considered to be a loss.

CBAs typically consider benefits and costs from the perspectives of program participants, government, the rest of society, and society as a whole (summing across perspectives). Benefits to these groups arise largely through the direct and indirect effects of program-related increases in participants' earnings. The main costs arise from changes in spending on education, training, and related supports.

This CBA adds a fifth perspective: that of employers. Year Up is unusual among programs for low-income populations for its success in securing funding from for-profit employers, who pay a fee to Year Up for each intern they receive (amounting to 59 percent of Year Up's total revenues).[68] As for-profit companies, employers' willingness to pay a fee to Year Up for each intern implies that they expect some financial return. This CBA therefore must attach some value to the benefits employers receive from interns.

To preview the main findings, **the CBA estimates a net benefit to society of $15,349 per treatment group member in the first five years after program enrollment.** That is the amount by which Year Up's estimated average benefit per individual ($38,484) exceeded its

Key Terms in the Cost-Benefit Analysis

- **Cost:** The average cost per treatment group member minus the average cost per control group member for a given component.
- **Total cost:** The sum of all cost components.
- **Benefit:** The average benefit per treatment group member minus the average benefit per control group member for a given component.
- **Total benefit:** The sum of all benefit components.
- **Net benefit:** Total benefits minus total costs; the final combined outcome of the cost-benefit analysis.
- **Perspective:** Our primary focus is the net benefits to *society as a whole*. We also consider costs and benefits as they accrue separately to five societal subgroups: *study participants*, *employers*, the *federal government, state and local governments*, and the *remainder of society.*

[68] Private philanthropy accounts for virtually all of the remainder (39 percent); Year Up relies very little on government funding (2 percent).

average costs ($23,135). This gain compares favorably with estimates from prior evaluations of workforce training programs.[69]

The estimates are conservative in several respects. First, large earnings impacts persisted undiminished to the end of the five-year analysis period, suggesting that additional benefits are likely to accrue in the longer-term (while it is unlikely that costs will increase). Second, the analysis does not monetize several potential radiating societal benefits—such as improved health, reduced crime, and improved child well-being. Finally, the estimates assume a return of only 50 percent to employers from their payments to Year Up for interns, whereas actual returns could be higher.[70]

The chapter has five sections. Section 6.1 provides an overview of the CBA accounting framework. Two following sections present estimates of costs (Section 6.2) and benefits (Section 6.3). Section 6.4 discusses benefits not included in the analysis. Last, Section 6.5 compares costs and benefits to estimate the net benefit for society as a whole and addresses uncertainty in the CBA estimates.

6.1 The Cost-Benefit Framework

As summarized in Exhibit 6-1, the cost-benefit framework applied in this chapter represents costs and benefits from the perspectives of specific stakeholders and across all stakeholders. Costs and benefits represent *differences* in average values between the treatment and control groups—that is, the amount Year Up adds or subtracts to each cost or benefit component. Costs and benefits are expressed per treatment or control group member to align with the intent-to-treat estimates in the impact analysis (see Section 2.5.3). For each perspective, Year Up's net benefit is the difference between benefits and costs.

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69 Examples include estimated net losses to society per participant of $5,203 for Workforce Investment Act (WIA)-funded training (observed over 30 months) and net gains of $3,636 for WIA-funded intensive and training services and $8,840 for WIA intensive services (Fortson et al. 2017). Although costs outweighed benefits for the overall Job Corps sample, larger sustained earnings gains for older youth (ages 20 to 24) resulted in a $26,229 net gain to society (Schochet et al. 2006). A recently published analysis of WorkAdvance found that three of four sites had positive net benefits to society over a five-year observation period: Towards Employment produced net benefits of $5,487; Madison Strategies Group, $12,363; and Per Scholas, more than $25,959 (Schaberg and Greenberg 2020). (These results are adjusted to 2014 dollars for comparability with the Year Up results in this chapter.)

70 One plausible alternative assumption is that, as profit-maximizers, employers expect to receive at least a dollar in value for each dollar they invest in Year Up interns. As discussed in Section 6.3.2, expected benefits include the value of interns' work output, savings over traditional hiring approaches, and increased productivity—as well as potential indirect financial benefits from improved public image and general workforce productivity increases. Sensitivity analyses in Section 6.5.2 and Appendix G show that the estimated net benefit from Year Up ranges from $11,164 to $29,700, respectively, for assumed extremes of 0 and 115 percent return per dollar invested. Year Up thus produces a positive net benefit even under the unlikely assumption of no benefits to employers at all.

The remainder of this section briefly defines the costs and benefits considered in the analysis, noting how each element appears from relevant perspectives.[71] Some elements affect only one group of stakeholders, whereas others represent transfers from one group to another. In rendering an overall judgment on whether a program is cost-beneficial, policymakers often put most emphasis on the implications for *society as a whole*—that is, the sum of costs and benefits across all stakeholders.

The top and bottom panels of Exhibit 6-1 identify the costs and benefits assessed in the analysis, respectively.

Exhibit 6-1: Hypothesized Costs and Benefits Assessed in the CBA, by Perspective

Component	Participants	Employers	Government, Federal	Government, State/Local	Rest of Society[a]	Society as a Whole (sum)
Costs						
Year Up services	0	+	+	+	+	+
Education and training and supportive services outside Year Up	−	0	−	−	−	−
Total Cost	**−**	**+**	**−**	**−**	**+**	**+**
Benefits						
Earnings	+	0	0	0	0	+
Fringe benefits	+	0	0	0	0	+
Taxes	−	0	+	+	0	+
Public benefits	−	0	+	+	+	+
Work-related expenditures	−	0	0	0	0	−
Year Up stipend[b]	+	0	0	0	0	+
Corporate partner (employer) revenue gains	0	+	0	0	0	+
Nonmarket time	-	0	0	0	0	-
Deadweight loss	0	0	0	0	+	+
Total Benefit	**+**	**+**	**+**	**+**	**+**	**+**
Net Benefit						
Net Benefit = Total Benefit − Total Cost	+	?	+	+	-	+

Note: Symbols in each cell indicate whether the expectation is for a net increase (+), decrease (−), zero effect (0), or uncertain effect (?) in costs or benefits from specified perspectives.

[a] Private philanthropy is the main stakeholder in this category in the Year Up analysis.

[b] The cost of providing this stipend is included in the "Year Up services" row.

[71] Section 6.4 discusses additional costs and benefits that are not included in our analysis. These are elements that are not readily monetized or that we do not observe and have no basis for approximating. Examples include radiating benefits of education and training and increased income such as improved psycho-social well-being and improved outcomes for future generations.

Costs in the analysis arise from two principal sources:

- **Year Up services.** This includes costs for direct services and administrative expenses incurred in operating the Year Up program. Key cost elements include staffing and office facilities, stipends to students, and payments to partner colleges for the small amount of tuition not covered by financial aid. Employers bear 59 percent of Year Up's costs, and private philanthropy (the main entry in the "rest of society" perspective) bears 39 percent of costs. Government funding covers a very small portion (2 percent) of costs.
- **Education and training and supportive services outside Year Up.** This category includes costs for non-Year Up education and training that members of either the treatment or control group might receive.[72] Such costs fall mainly on governments—through direct state and local funding of education (e.g., appropriations for community colleges) and federal and state financial aid programs—or on students themselves (through loans and out-of-pocket expenditures). Notwithstanding hopes that the program would encourage more treatment group members to continue in college after graduating the program, their enrollment was lower than that of the control group in the second follow-up year and very similar from the third year on (Exhibit 4-1). For this reason, and due to substantially reduced college costs during the program itself, the expected net effect is to reduce costs. This category also includes estimated costs to control group members for supportive services related to other employment and training and not already included in training costs.[73]

The bottom panel of Exhibit 6-1 shows the primary benefits considered in this CBA. They include:

- **Earnings**. Year Up's effects on earnings are the main expected contribution to benefits. As explained in this chapter's introduction, this CBA assesses the effects of impacts on total earnings over the first five years after random assignment. Changes in a number of items that result from increased earnings are included in the CBA:
    1. **Fringe benefits.** Increases in earnings and full-time work imply increases in fringe benefits such as health insurance, employer retirement contributions, paid vacation, and sick leave. These benefits represent a value to participants in addition to earnings. The value of fringe benefits is estimated by multiplying observed earnings by external estimates of the value of average benefits as a share of income, adjusted for the survey-measured rates of fringe benefit receipt by study participants
    2. **Taxes.** Increased earnings generate increases in taxes. The analysis includes estimated increases in income, payroll, and sales taxes (the latter assuming increased taxable purchases). Because taxes represent a transfer from study participants and employers to federal, state, and local governments, the amounts cancel in the society as a whole

[72] These other education and training costs exclude costs for treatment group members' co-enrollment at partner colleges provided as part of the Year Up program. Year Up's co-enrollment arrangement does not generate an increase in college costs because the program, rather than college partners, provides all training and services.

[73] We estimated control group use of supportive services to promote employment and training using 18-month follow-up survey data on receipt of career counseling, help arranging supports for school or work such as childcare, and job search assistance. Unit costs for these services are based on estimates in Fortson et al.'s (2017) for WIA core and intensive services. Appendix G provides details.

perspective. Increased employer contributions to payroll taxes based on participants' wages do represent a benefit to society.[74]

3. **Public benefits.** Increases in earnings reduce treatment group members' eligibility for, and receipt of, means-tested public benefits. The loss to participants and benefit to government budgets largely cancel each other out, although there is a small net savings to society from reduced governmental costs for administering programs. Public benefit receipt is estimated by multiplying earnings impacts by external estimates of how increases in income affects benefits, and adjusting for survey-measured rates of benefit receipt by study participants.[75]

4. **Work-related expenditures.** Although impacts on any employment were generally small, increases in the number of hours worked likely increased Year Up participants' spending on transportation, childcare, and other work-related needs. The analysis includes estimates for such expenses in the participant perspective.

- **Year Up stipend.** Year Up stipends provided to treatment group members represent a benefit from the participant perspective. The total cost for Year Up services (top panel of Exhibit 6-1) includes funds used to pay these stipends. The benefits and costs cancel in the society as a whole perspective.

- **Corporate partner (employer) revenue gains from improved productivity.** As profit-maximizers, employers generally invest where they expect resources to generate at least commensurate financial returns.[76] To the extent that investments in Year Up interns allow employers to profitably generate greater output, such returns should be included in the CBA.[77] Possible avenues for greater output include the value of work that program participants perform during internships; reduced recruitment and turnover costs from hiring

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[74] As taxes paid directly by the employer on behalf of employees, the employer portion of payroll taxes implies an increase in employers' production that is a benefit to society just as participant earnings are, although the employer portions do not appear in participants' paychecks. The CBA assumes that employers' production increases by an amount equal to the difference in tax, which results in a zero net effect for the employer column.

[75] Specifically, this CBA considers public assistance items that are included in the PACE surveys, which provide estimates of the incidence of benefit receipt. These items are food assistance (Supplemental Nutrition Assistance Program/SNAP or Special Supplemental Nutrition Program for Women, Infants, and Children/WIC), Temporary Assistance for Needy Families/TANF or other cash public assistance, Unemployment Insurance, housing assistance, and Medicaid (public health insurance). Benefit reduction rates are based on various external estimates, as documented in Appendix G.

[76] Economists refer to the price companies pay to access potential employees (and low-cost short-term labor during the internship) as a "shadow price." Economists take employers' willingness to pay a particular price, in this case a fee to access Year Up interns, as an indication of the value of the output they expect such investments to generate (Boardman et al. 2017, Cordes 2017).

[77] The literature suggests that many of the benefits of interns come once those interns are "converted" to employees. Even when interns are not hired, they can generate increases in productivity. Converted interns also reduce recruitment, hiring, and turnover costs. Sanahuja Velez and Ribes Giner (2015) provide an extensive review of the literature on the effects of internships on employers. See also Gardner (2013) and Rose (2013). An internal Year Up project identified potential returns to employers as including reduced employee turnover, improved performance, and reduced hiring costs.

interns; lower labor costs; and greater worker productivity.[78] Possible indirect benefits include general increases in staff morale and job satisfaction. The plus sign in this row in Exhibit 6-1 indicates that the expected return is positive, whereas the question mark in the last row acknowledges uncertainty about whether returns exceed costs. Section 6.3.2 discusses the bases for assumptions about returns used in the analysis, and the sensitivity analysis in Section 6.5.2 includes results calculated using alternative assumptions.

- **Nonmarket time**. Increases in time spent in work and training leave less time for other activities that have value for participants—activities such as leisure, childcare, and other domestic tasks. The analysis includes the value of this diminished time. This value is estimated as the sum of the values of time lost to work and time lost to training. The value of time lost to employment is estimated as the amount of the overall earnings gain that was due to increased work, multiplied by 0.5—an external estimate of the value of diminished nonmarket time. A similar calculation is used to estimate the value of diminished nonmarket time from increased training. Appendix G explains the steps and associated assumptions in detail.
- **Changes in deadweight loss**. Year Up participation decreases public expenditures on other forms of education and training, and participants' increased earnings lead to decreases in public benefits received. There are two reasons why these results generate an additional small benefit to society as a whole. First, raising revenue for government expenditures creates inefficiency (known as "deadweight loss") as the rest of the economy reacts to taxes or government borrowing. Second, real resources are required to raise the revenue (Weimer and Vining 2009, Chapter 14). Exhibit 6-1 shows an expected positive return as governmental expenditures both on public benefits and on education and training outside Year Up are expected to decrease, reducing deadweight loss.

The overall implications for costs and benefits appear in **bolded** rows in the first and second panels of Exhibit 6-1, respectively. We expect total costs to participants and governments to decline and costs to employers and the rest of society (e.g., philanthropy) to increase. The overall implication for society as a whole is increased costs, because increased costs for Year

[78] A systematic review of the literature by Sanahuja Velez and Ribes Giner (2015) concludes that employers value internships as a source of inexpensive, well-qualified labor; a source of fresh thinking and new ideas; and a way to save on recruitment costs. Some revenue gains from interns may also reflect improved sales and market position from improved public perceptions of companies. Although such revenue may represent real profit, it also may be the basis for funding internships. Alternatively, if interns do not increase revenue, companies may fund internships for altruistic reasons. In such cases, shareholders implicitly may be accepting lower profits, or employees may be accepting lower wages, to support Year Up. Gains that solely result from corporate social responsibility effects, whether through higher prices from improved public perception or through shareholder or employee concessions to support Year Up's mission, should not be included as a benefit in the CBA. Rather, they are essentially an alternative form of philanthropic giving. A study of Per Scholas, which provides similar training to Year Up (IT training customized to employers' needs) but not internships, found that employers of program graduates had lower turnover and screening costs and a modest gain in productivity from greater diversity, customized training, and better customer service skills (Adams et al. 2018). The study estimated that employers could see gains of $1,300 to $1,800 per employee per year. These figures give some indication of the gains Year Up employers might see from converted interns.

Up services outweigh decreases in other costs. Offsetting increases in costs, total benefits are positive from every perspective, including "society as a whole."

The last row of Exhibit 6.1 summarizes the expected net benefit across all costs and benefits from each perspective. Participants are unambiguously better off. The net benefit from the employer perspective depends on the magnitude of positive financial returns from investments in Year Up interns, which is uncertain. The expected net benefit to the rest of society—mainly private philanthropy—is negative because costs from contributions to Year Up outweigh small gains from reductions in deadweight loss. Federal and state/local governments should see positive net benefits from Year Up. Whether the net benefit for society as a whole is a gain or a loss depends on whether total benefits to society as a whole exceed total costs, summarized across the other perspectives.

6.2 How Much Did It Cost?

Exhibit 6-2 shows cost estimates for each major cost component and for all components. The bottom row shows estimated costs for treatment and control groups of $33,906 and $10,771, respectively, and a total cost (the difference) for Year Up of $23,135. This section discusses each cost element and how costs are allocated across stakeholders.

Exhibit 6-2: Year Up Treatment and Control Group Members' Cost per Participant at Five Years

Cost Component	Cost per Treatment Group Member ($)	Cost per Control Group Member ($)	Cost ($)
Year Up services	27,158[a]	0	27,158
Stipends	*6,885*		
All other direct services and administrative costs	*20,273*		
Education and training and supportive services outside Year Up	6,748	10,771	−4,023
Education and training enrollment	*6,748*	*9,986*	
Supportive services in community		*785*	
Total cost	**33,906**	**10,771**	**23,135**

Source: Year Up program financial records. National Student Clearinghouse database. Year Up enrollment database. PACE follow-up surveys. Delta Cost Project Database. Integrated Postsecondary Education Data System. Research team investigation and approximations of costs of alternative services accessed by the control group.

[a] This figure represents the average cost per treatment group member. It reduces Year Up's $28,280 average per participant cost to account for the four percent of treatment group members who dropped out after random assignment and never received services.

6.2.1 Year Up Services

The cost of Year Up services was $27,158 per treatment group member (Exhibit 6-2, first panel).[79] This estimate includes $20,273 for staffing, facilities, and small payments to college partners and an average of $6,885 for stipends.[80]

Year Up costs are on the high end of the spectrum for workforce training programs studied in recent decades. For example, a 2003 meta-analysis of 15 government-sponsored youth training programs reported an average cost of $12,479 (with a standard deviation of $5,728).[81] A recent study of the relatively low-intensity, national WIA and Workforce Innovation and Opportunity Act programs found per-person costs ranging from $1,127 (core program) to $2,376 (full program).[82] Average costs for other sectoral training programs were $11,156 for Project QUEST and $6,231 to $7,929 for programs studied in the WorkAdvance demonstration.[83] Estimates for more intensive youth programs include $19,824 for YouthBuild, $24,703 for Job Corps, and $14,864 for the National Guard Youth ChalleNGe program.[84]

6.2.2 Education and Training Outside Year Up

The estimated average gross per-person costs for non-Year Up education and training and supportive services received by treatment and control group members over the five years after random assignment were $6,748 and $10,771, respectively—representing $4,023 per-person lower costs, on average, for the treatment group relative to the control group (Exhibit 6-2, panel 2). The savings arise mainly from negative impacts on college enrollment not related to Year Up during Year 1 and Year 2 of the study.

The estimated costs for education and training are the product of students' months enrolled and institutions' estimated cost per student enrolled per month. The primary data source for months enrolled is the National Student Clearinghouse (NSC) database (see Section 4.1). The estimates exclude Year Up-related college co-enrollment, because such enrollments do not add to real costs (i.e., Year Up, rather than colleges, provides the actual training). In addition to

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79 This figure is based on Year Up financial reports showing total spending of $28,290 for each young adult actually enrolled in the program in calendar years 2013-2014. This amount reflects the cost to Year Up per individual served. To allow costs to be compared to impact estimates of benefits, the CBA measures the cost per treatment group member (i.e., per person who received an offer to participate in Year Up). To adjust for a small fraction of treatment group members (4 percent) who never enrolled in Year Up (but received an offer to participate), the research team reduced the reported cost per enrollee of $28,290 by 4 percent (i.e., $28,290 x 0.96 = $27,158). This cost is then comparable to intent-to-treat impact estimates from Chapter 5, which also estimate the impact of this offer (see Section 2.5.3).

80 The average stipend for enrolled students in Year Up administrative data was $7,172 as reported in the short-term report (Fein and Hamadyk 2018). This amount is reduced by 4 percent to account for treatment group members who never enrolled in Year Up (i.e., $7,172 x 0.96 = $6,855).

81 See Greenberg et al. (2003). Figures adjusted for inflation to 2014 dollars.

82 See Fortson et al. (2017). Figures adjusted for inflation to 2014 dollars.

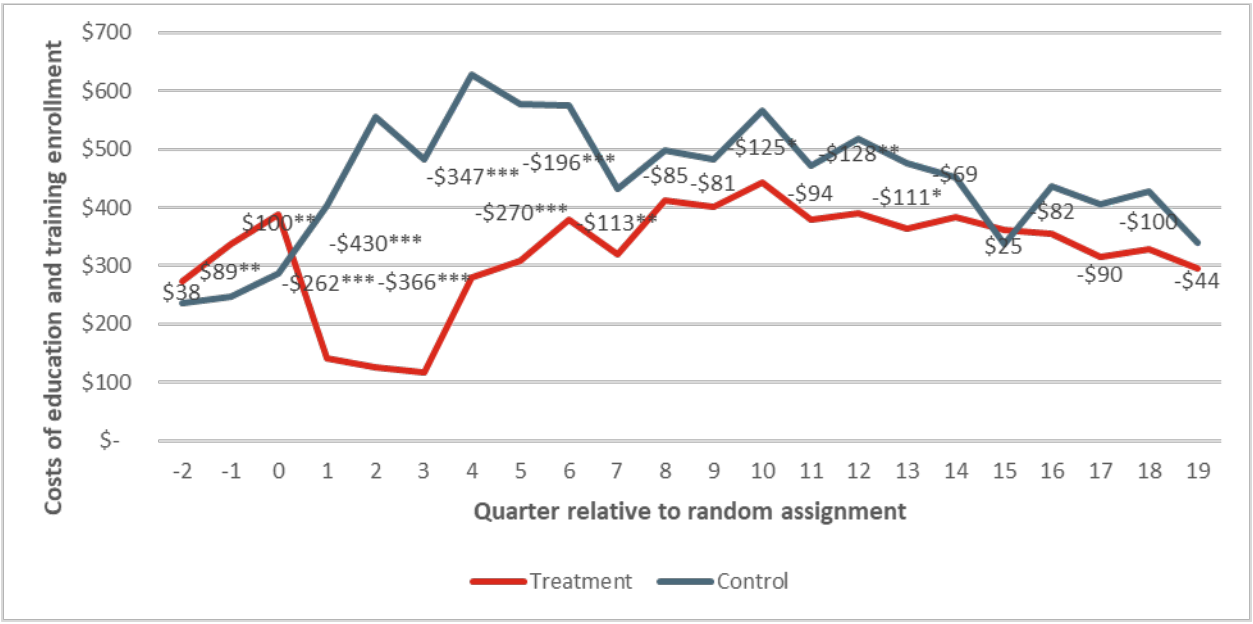
83 See Roder and Elliot (2019) for Project QUEST and Hendra et al. (2016) for WorkAdvance.

84 See Cohen and Piquero (2015) for YouthBuild; Schochet et al. (2006) for Job Corps, also summarized in Greenberg et al. (2003); and Perez-Arce et al. (2012) for National Guard Youth ChalleNGe.

NSC-recorded enrollments, the estimates include training that young adults reported in the three-year follow-up survey at providers not included in the NSC database. Estimates for average costs involved multiplying the number of months each treatment and control group member was enrolled by unit costs for the institutions they attended. Institution-specific cost data in the IPEDS were the basis for these unit costs.[85]

A sense of how differences in education and training costs changed over the five-year follow-up period helps in anticipating how this component might influence Year Up's net benefits in the longer term. The quarterly estimates graphed in Exhibit 6-3 show that by the end of the five-year period, treatment group costs were no longer clearly lower than control group costs. Longer-term analyses to be conducted in the future will provide more direct information, but at this point additional differences (past five years) in costs of education and training outside of Year Up for the treatment and control groups seem unlikely given that there are no significant difference in treatment and control group costs in the final six quarters of the analysis.

Exhibit 6-3: Cost of Education and Training Outside of Year Up Over Five Years



Source: National Student Clearinghouse database. Year Up enrollment database. Integrated Postsecondary Education Data System.
Note: Data point labels are (treatment cost – control cost).
Statistical significance levels based on differences between research groups: * 10 percent level, ** 5 percent level, *** 1 percent level.

85 Survey-reported enrollments included a small number of providers for which expenditure data is not available in IPEDS. For such schools, we imputed the average IPEDS-recorded costs for training at comparable levels in similar sectors (see Appendix G for details).

As the last item in Exhibit 6-2 panel 2, the research team estimates an additional $785 in costs per control group member for support services related to employment and training available in the community (i.e., not attendant to enrollment in education and training).[86]

6.2.3 Costs From Different Stakeholder Perspectives

Exhibit 6-4 shows how these costs are distributed across stakeholders. In accordance with Year Up financial reports, the first row allocates 59 percent of the costs to Year Up's corporate partners and 39 percent to philanthropic donors (in the "rest of society" column). Two (2) percent of Year Up program gross costs are attributed to government agencies.[87]

The average cost to employers of $16,118 per treatment group member in Exhibit 6-4 is noteworthy for its size and because few other, if any, workforce programs are mostly financed through revenue from for-profit companies. This cost to employers is realized as they pay fees for each intern that Year Up provides. Not all program enrollees progress to internships, so the $16,118 represents the $24,700 that companies pay per allocated intern averaged over the entire treatment group, whether or not they made it to the internship phase.

Exhibit 6-4: Cost per Participant by Perspective at Five Years, by Perspective

Cost Component	Participants	Employers	Government, Federal	Government, State/Local	Rest of Society	Society as a Whole (sum)
Costs ($)						
Year Up services	0[a]	16,118	246[b]	245	10,549	**27,158**
Education and training and supportive services outside Year Up	−169	0	−1,284	−1,981	−589	**−4,023**
Total Cost	**−169**	**16,118**	**−1,038**	**−1,736**	**9,960**	**23,135**

Source: PACE cost data interviews. Year Up program financial records. National Student Clearinghouse database. Year Up enrollment database. PACE follow-up surveys. Delta Cost Project Database. Integrated Postsecondary Education Data System. Research team investigation and approximations of costs of alternative services accessed by the control group.

[a] Program participants forgo earnings to participate in the program, which is captured in total earnings during the five-year follow-up period in Section 6.3.

[b] Detailed information on the share of federal versus state/local grant funding for Year Up is not available, so the CBA assumes an even split. Similarly, costs of supportive services for employment and training in the community are split evenly between federal and state/local governments.

The second row shows that reduced costs for non-Year Up education and training and supportive services accrue mainly to the two government perspectives. The research team

86 The PACE 18-month and three-year follow-up surveys did not collect data on where control group members received supportive services related to employment and training, so the research team estimated the share who received career services outside of what they may have received through enrollment in an institution reporting to the National Student Clearinghouse based on survey responses. Details are provided in Appendix G.

87 Absent data on the sources of government grants to Year Up, the estimates allocate half to federal and half to state and local government sources.

allocated stakeholders' shares of education and training costs based on the sources of institutions' annual revenue, as calculated from IPEDS data on revenue by category (e.g., state and local appropriations, federal grants, private donations, endowment income), averaged over participants' estimated enrollment.

Results show education and training and supportive services-related savings of $1,284 for federal and $1,981 for state/local governments—a total of $3,265. The savings reflects that state and local appropriations are the most prominent revenue source for community colleges and other public institutions that participants attended, followed closely by federal Pell and other grants.[88] Governments also provide funding for supportive services for employment and training. Because governments spent more overall on services to control group members than to treatment group members, the total row shows a net savings in these columns ($1,038 and $1,736).

The average cost of $10,549 shown for the "rest of society" perspective reflects other revenue sources for postsecondary education and training (chiefly philanthropy and college endowment spending on scholarships to low-income students). Estimates for the non-Year Up education and training row show $589 in savings in this column. The same row also shows a small ($169) reduction in out-of-pocket spending for education-related expenses by participants. Control group participants paid more out-of-pocket tuition and fees for education and training than did treatment group participants over the five-year follow-up period.

In summary, as shown in the total row of Exhibit 6-4, employers and private philanthropy bore all of the program's net costs (at an average of $16,118 and $9,960 per participant, respectively), while participant and government stakeholders experienced cost reductions.

6.3 What Was the Return?

Important issues arise in assessing benefits from different perspectives. This section thus organizes discussion of Year Up's estimated benefits on a stakeholder-by-stakeholder basis.

6.3.1 Participant Perspective

Benefits to participants accrue mainly from Year Up's substantial positive impacts on earnings, and to a lesser degree from program stipends. The estimated $18,088 benefit from increased earnings (Exhibit 6-5, row 1) represents the net present value (NPV) of impacts over the five-year follow-up period. The NPV is similar to the overall five-year earnings impact in Chapter 3 ($21,986) but applies a 5 percent annual discount to earnings in successive follow-up years before estimating impacts.[89]

Increased earnings also affect several other sources of income for participants (see middle rows of Exhibit 6-5). Most notably, increased earnings generate an estimated increase of $7,334 in

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88 The research team assumed that study participants qualified for and received the maximum amount of Pell grants at institutions attended.

89 The discount reflects inflation and the general principle that opportunities to spend today are more valuable than opportunities to spend tomorrow. The nominal discount rate of 5 percent assumes 2 percent annual inflation and a 3 percent rate for increased present value otherwise (see Boardman et al. 2016, chapter 6). This value assumes that $1 at random assignment is valued equivalently to $1.03 a year later. See Dastrup et al. (2017) for further motivation and Appendix F for sensitivity analyses to higher and lower discount rates.

fringe benefits from employers—benefits such as paid vacation, holidays, sick leave, and retirement contributions. In the other direction, participants lose some of the earnings gains to taxes (totaling $6,495 across federal income, payroll, state income, and state/local sales taxes), and they receive somewhat lower public benefits (an estimated $1,818 loss).[90] Benefits also include an estimated average total of $6,885 in Year Up stipends for the program year, as was calculated in Section 6.2.1. Finally, we reduce total benefits by $3,874 to reflect the value of foregone nonmarket time. Combined with increases in earnings, **the total benefit to participants is $19,605 (Exhibit 6-5, total row).**

Exhibit 6-5: Benefits from Participant Perspective at Five Years

Benefit Component	Treatment Group ($)	Control Group ($)	Benefit ($)
Total earnings in Years 1-5	91,290	73,202	18,088
Fringe benefits	37,015	29,681	7,334
Taxes			
Federal income	−7,328	−3,592	−3,941
Federal payroll, employee	−7,313	−5,944	−1,369
State income	−2,315	−1,705	−611
State/local sales	−2,902	−2,328	−574
Public benefits[a]			−1,818
Work-related expenditures[a]			−515
Year Up stipend	6,885	0	6,885
Nonmarket time			-3,874
Total benefits to participants			**19,605**

Source: National Directory of New Hires. National Bureau of Economic Research taxsim model (Feenberg and Coutts 1993). State and local tax research resources: https://www.avalara.com/taxrates/en/calculator.html, Consumer Expenditure Survey by Income Quintiles (Table 1203). Congressional Budget Office (2015) marginal effective tax rates.
[a] Average receipt of public benefits and work-related expenditures is not estimated; benefit is calculated based on earnings impact.

6.3.2 Employer Perspective

Year Up's success in securing substantial funding from corporate partners makes the employer perspective a novel and important one in this cost-benefit analysis. Section 6.2.3 documented that Year Up cost employers an average of $16,118 per treatment group member in internship fees. This section considers the benefits to employers from their investment in interns.

Direct estimation of benefits to corporate partners was not within this project's scope. In lieu of such evidence, the analysis applies a best estimate based on anecdotal evidence of positive returns in the literature and qualitative reports on a dozen employers' motives for engaging Year Up interns. **Based on this evidence, we assume an average return to employers of 50 percent of their average investment in interns—representing a return of 8,059 per participant (see fifth row of Exhibit 6-6).** Given uncertainty about the exact value of this

[90] Estimated changes in taxes are based on calculations from the NBER tax simulation program Taxsim (See Feenberg and Coutts (1993) and http://www.nber.org/taxsim) that calculates tax liabilities based on individual profiles that include earnings and household composition. The analysis estimates benefit reductions by multiplying survey-reported rates of receipt of TANF, SNAP and WIC, UI, housing assistance, and Medicaid to external estimates of average benefit reduction resulting from increased earnings for each program applied to the observed earnings impact.

benefit, the analysis also considered the implications for benefits to society as a whole for assumed returns ranging from 0 to 115 percent. As noted below, both extremes have important policy implications.

Exhibit 6-6: Benefits per Participant by Perspective at Five Years

Benefit Component	Participants	Employers	Government, Federal	Government, State/Local	Rest of Society	Society as a Whole (sum)
Benefits ($)						
Earnings	18,088					**18,088**
Fringe benefits	7,334					**7,334**
Taxes[a]	−6,495		6,679	1,185		**1,369**
Public benefits[b]	−1,818		2,041			**223**
Work-related expenditures	−515					**−515**
Year Up stipend	6,885					**6,885**
Corporate partner revenue gains (50% ROI)		8,059				**8,059**
Deadweight loss					915	**915**
Nonmarket time	-3,874					**-3,874**
Total Benefits	**19,605**	**8,059**	**8,720**	**1,185**	**915**	**38,484**
Alternate corporate partner revenue gains assumptions						
0%	23,479	0	8,720	1,185	915	30,425
115%	23,479	18,536	8,720	1,185	915	48,961

Source: National Directory of New Hires. National Bureau of Economic Research taxsim model (Feenberg and Coutts 1993). State and local tax research resources: https://www.avalara.com/taxrates/en/calculator.html, Consumer Expenditure Survey by Income Quintiles (Table 1203). Congressional Budget Office (2015) marginal effective tax rates. Research team estimation.

[a] Federal and state including credits, payroll, and sales. Employer portion of payroll taxes implies additional output/revenue.

[b] TANF, SNAP/WIC, Unemployment Insurance, housing assistance, and Medicaid. Gain to rest of society is due to savings in program administrative costs.

In-depth interviews with 12 employers conducted earlier in the project for the implementation study (Fein & Hamadyk 2018) identified two main reasons for investing in Year Up interns (see box below). First, as profit-maximizers, companies generally invest their resources where they expect at least commensurate returns. Second, increased expectations for companies to behave in socially responsible ways create a possibility for spending based on altruistic considerations. The two motives are not mutually exclusive and, as discussed below, investments regarded as corporate social responsibility spending can have financial motives as well as purely altruistic ones.

Under the profit-maximizing rationale, employers might see Year Up interns as a means for boosting profitability through more efficient production. Such a result could arise through multiple channels, including the value of work output during internships (e.g., interns' services as IT helpdesk, customer assistance, and loan servicing providers); savings from a lower-cost pipeline for recruiting and training entry-level workers; reduced costs from turnover; or lower production costs (e.g., by replacing higher-paid workers with lower-paid workers).

Year Up internships give employers a low-cost route to finding and trying out new workers and, potentially, hiring entry-level workers at lower salaries. Based on employer interviews, Year Up hires will be a good source of new ideas, more productive in their positions, and add value-enhancing diversity to the workplace.[91]

A growing literature has sought to measure the financial implications of corporate contributions to social programs where the direct benefits are less clear.[92] Under the corporate social responsibility rationale, there are two possible benefits to companies. First, such investments can enhance a company's image and market position, allowing it to increase sales volume and prices in ways that increase profits. Second, companies, and

Employer Perspectives on Motives for Investment in Year Up

Business reasons:

- "We're an investment company. If it wasn't worth it, we wouldn't do it."
- "[Year Up's fee] is a lot less than we pay for contractors, so while some are less skilled we're paying a lot less initially. … We give [Year Up] value, and we get value. We get a good return on investment."
- "[It's] a major talent pipeline. We began [participating] in 2005, when we weren't able to find the talent we were looking for … just from four-year graduates."
- "The benefit for me personally is that [interns] are an awesome source of new hires. … And the six months they are here is like a long interview."
- "About one third of current helpdesk staff are YU grads. … We just keep them. … They've been trained [here] for six months, so they really hit the ground running."
- "A lot of interns come in with really great ideas. Things they've learned at the program or at site visits they did during the program... I think we've gotten value from that. They're eager and excited. They want to learn and engage."

Social responsibility:

- "[It's] about 90 percent trying to help the community, because we could get contract workers from professional staffing agencies. But we're a part of the city and they're a part of the city, [so our view is] let's do something good for everybody."
- "[The organization is] probably thinking more of the social aspect first, maybe 60-70 percent, and the remainder is the value of [the interns'] work."

91 This finding is consistent with the discussion and the literature cited in Section 6.2 on the benefits of internship programs to companies.

92 Kitzmueller and Shimshack (2012) provide a comprehensive review of the theory and empirical evidence on corporate social responsibility (CSR). Margolis et al. (2007) give results from a meta-analysis of empirical studies of the link between CSR and financial performance. They find that increased CSR correlates with modest improvements in financial performance, but they do not assess the extent to which improvements increased profits. As a more recent example, Lins et al. (2017) study the relationship between CSR and company performance during the 2008-2009 financial crisis, finding that stock returns of companies with higher CSR intensity outperformed those with low social capital. The higher-intensity companies also raised more debt and experienced higher profitability, growth, and sales per employee compared with companies with low social capital. The authors suggest that CSR builds trust between a company and its stakeholders and investors, and that this is most valuable when the overall level of trust in corporations and markets experiences a negative shock.

their customers and shareholders, may attach value to the societal contributions of such spending in its own right.

In the second instance, shareholders may agree to give up profits, employees to accept lower salaries, or customers to pay higher prices for purely altruistic reasons. The company essentially acts as a conduit for philanthropic interests: payments for a program such as Year Up are thus no different from philanthropic donations, from a CBA perspective.

Complicating matters, companies may invest in social programs for multiple reasons, and the benefits are likely to vary greatly depending on particular programs' goals and effectiveness. Not surprisingly, efforts to measure the benefits to companies of corporate social responsibility investments to date have not produced findings applicable to specific programs.

In interviews with a dozen Year Up corporate partners, most cited both financial and philanthropic motivations for participating in Year Up (see box above). As mentioned at the top of this section, this study's main CBA estimates assume an average financial benefit to employers equaling half the amount they paid Year Up. The bottom panel of Exhibit 6-6 shows the benefits associated with assumed returns to corporate partners of 0 and 115 percent. Although it is unlikely that employers receive no benefit, the results with this assumption provide a sense of the benefits that would accrue to society in a world where government assumed responsibility for costs currently borne by employers. The 115 percent return assumption simulates benefits in a scenario where employers receive a healthy profit on their Year Up investment. It embodies the goal of a Year Up initiative aimed at customizing internships to maximally address the needs of both employers and young adults.[93]

6.3.3 Government and "Rest of Society" Perspectives

Federal, state, and local governments experience gains from increased taxes and reductions in education and training subsidies and (for the federal government) from reduced expenditure on public benefits—the latter including an average 11 percent savings in administrative costs. This decline in government expenditures ($1,818 in public benefits and $2,480 in education and training subsidies) has an associated effect: it reduces deadweight loss by $915, which is a gain to society as a whole (discussed next).

6.3.4 "Society as a Whole" Perspective

Year Up's total benefit to society as a whole is $38,484 (Exhibit 6-6, total row, last column). The largest portion derives from increased earnings ($18,088; with an accompanying increase in fringe benefits of $7,334), followed by corporate partner revenue gains ($8,059) and Year Up stipends ($6,885). Decreased nonmarket time and increased work-related expenditures generate losses to participants (-$3,874 and −$515, respectively). Changes in taxes and public benefits are largely transfers that net to zero for society as a whole, although an increase in employer payroll taxes and savings in administrative costs result in additional positive benefits to society as a whole. Reduced government expenditures benefit society by reducing deadweight loss (a gain to the rest of society of $915).

The alternative assumptions about corporate partner revenue gains affect benefits for society as a whole. The low-end assumption—that corporate partners see no return from participating in

[93] For discussions of Year Up's "customer service" initiative, see Fein (2016b) and Fein and Hamadyk (2018).

the Year Up program (i.e., contributions are pure corporate social responsibility)—reduces total benefits to society as a whole from $38,484 to $30,425. The high-end assumption—a 115 percent return—increases total societal benefits to $48,961.

6.4 Costs and Benefits Not Included

This analysis covers the costs and benefits most typically included in CBAs. It is important to acknowledge the potential for other costs and benefits that either cannot be monetized using existing accepted approaches or are beyond this project's scope. For example, Year Up's theory of change (Exhibit 2-1) anticipates enhancements in other aspects of individual and family well-being. There is also a possibility for wider benefits to society from longer-term reductions in crime and improvements in health and child well-being.

To date, the PACE project has measured only some of these outcomes via the three-year follow-up survey, as reported in Chapter 5. At that point, Year Up had not affected several measures of psycho-social well-being. It produced small reductions in financial stress and life challenges but had no effect on health insurance.[94] The program produced small increases in the likelihoods of not living with a spouse or child (especially among women) and not living with parents (especially among men). The CBA also does not include an estimated $650 in reduced interest payments associated with the $2,495 reduction in total debt shown in Exhibit 5-1.[95] Reduced debt, increased income, and improved career prospects all might help to improve mental and physical health, which might contribute to increased productivity and could have other financial benefits. These financial and health benefits might lead to improvements in material and psycho-social resources employed in parenting, with positive implications for child well-being for participants' current or future children.

As this brief sketch suggests, the omitted costs and benefits generally have positive implications for net benefits to society as a whole from Year Up. Thus, it is unlikely that including them would change the CBA's basic conclusion that Year Up was cost-beneficial.

6.5 Was Year Up Worthwhile Overall?

Having presented Year Up's costs and benefits, it remains to estimate the difference between the two. Section 6.5.1 examines basic results for *net benefits* (that is, total benefits – total costs), and Section 6.5.2 considers their robustness to alternative assumptions and sampling error.

6.5.1 Summary Findings

For society as a whole, Year Up produced a net benefit of $15,349 per participant in the first five years after random assignment (Exhibit 6-7, last column). This figure is the difference between an estimated total benefit of $38,484 and total cost of $23,135 per participant. It implies a return of $1.66 for every dollar spent. Net benefits vary by stakeholder:

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94 Although there is no effect on having any type of health insurance, treatment group members are less likely to have public health insurance (Medicaid). In monetizing public benefits, the analysis reflects this shift from Medicaid towards private (presumably employer-provided) health insurance.

95 Estimated payments represent the net present value of payments during the first five years (this report's follow-up period) on a 10-year loan at a 5 percent real interest rate.

they are positive for participants and government and negative for employers and private donors (philanthropy being the main stakeholder in the "rest of society" column).

Exhibit 6-7: Total Costs, Total Benefits, and Net Benefits of Year Up at Five Years, by Perspective

CBA Component	Participants	Employers	Government, Federal	Government, State/Local	Rest of Society	Society as a Whole (Sum)
Total Cost ($)	−169	16,118	−1,038	−1,736	9,960	23,135
Total Benefit ($)	19,605	8,059	8,720	1,185	915	38,484
Net Benefit (Total Benefit − Total Cost) ($)	**19,774**	**−8,059**	**9,758**	**2,921**	**−9,045**	**15,349**

Source: See Exhibits 6-4 and 6-6.

The results shown in Exhibit 6-7 understate Year Up's total net benefits in two key respects. First, this report's analyses summarize benefits and costs only for an initial five-year follow-up period. The persistence of large earnings impacts through the end of this period (reported in Section 3.1) suggests a strong likelihood of additional benefits in the longer term, while substantial additional net costs seem unlikely (see Section 6.2). Second, the analysis does not include the monetary value of a number of potential radiating societal benefits—such as improved health, reduced crime, and improved child well-being (see Section 6.4).

The bottom line from this CBA is that even a relatively expensive program such as Year Up can be financially beneficial to society as a whole.

6.5.2 Implications of Uncertainty for the CBA's Conclusions

Estimates in this CBA are subject to three sources of uncertainty: sample variability, measurement error in program-level observations of Year Up costs, and inputs that had to be assumed because they could not be observed (notably, the extent of corporate partner revenue gains).[96] Although these assumptions are based on the best information available, they could be incorrect. A key question for the CBA is: do they matter? Do the sources of uncertainty have the potential to undermine the core finding of the CBA, which is that Year Up produces large net benefit for society as a whole? Or are the findings of the CBA robust to this uncertainty?

This section addresses these questions. It assesses uncertainty in cost and benefit estimates provided in prior sections of the CBA through a combination of sensitivity testing and Monte Carlo analysis. **As seen below, the results indicate that the study's key finding—that Year Up's net benefit to society overall was positive—is quite robust to uncertainty.**

[96] *Sampling variability* refers to the chance inclusion of just some cases from the universe of interest in the analysis sample rather than from the entire universe, and causes virtually all impact estimates and other parameters calculated using statistical analysis to be subject to some uncertainty, even for parameters found to be statistically significant. *Error in program-level observations* refers to inaccurately observed values for point estimates of Year Up costs, which are based on a single program-level observation. This type of uncertainty cannot be characterized using statistical analysis. Instead, the analysis uses a reasonable assumption about possible variability in costs to characterize the extent of uncertainty. *Uncertainty due to reliance on assumptions* also cannot be characterized using statistical analysis.

Appendix G describes further the sources of uncertainty, provides methodological details on the two approaches, and reports additional results.

Estimates that use participant-level data

Uncertainty in estimates of costs and benefits in the CBA that are based on statistical analysis of participant-level data can be characterized using confidence intervals—a range around a statistical estimate that includes plausible values for the estimate—that are generated by the analysis. Exhibit 6-8 reproduces the estimate of the cost of education and training outside of Year Up (Exhibit 6-2 panel 2) and the estimate of the benefit of increased earnings (Exhibit 6-5), adding detail on the statistical significance, standard errors, and implied confidence intervals associated with the estimates. A standard approach to assessing how the uncertainty characterized by the range of values that the confidence intervals around these estimates indicate are plausible is to consider whether recalculating net benefits using alternative values in the intervals would lead to materially different conclusions on the direction of net benefits. For each of these key CBA components *individually*, the range of plausible values is not large enough to alter the conclusion that Year Up produces a large, positive net benefit to society as a whole. Results from the Monte Carlo analysis presented below *simultaneously* account for alternative assumed values and sampling variance for various cost and benefit components in order to assess uncertainty in the net benefit estimate.

Exhibit 6-8: Characterization of Uncertainty for Costs and Benefits Estimated with Participant-level Data

CBA Component	Treatment Group	Control Group	Impact (Difference)	Standard Error	90% CI Lower	90% CI Upper	*p*-Value
Education and training outside of Year Up	6,748	9,986	-3,238 ***	746	-4,465	-2,012	<.001
Total net benefit recalculated			19,223		17,996	20,449	
Total earnings in Years 1-5	91,290	73,202	18,088 ***	2,015	14,774	21,402	<.001
Total net benefit recalculated			19,223		15,909	22,537	
Sample size	1,232	583					

Source: Quarterly wage records obtained in a match to the National Directory of New Hires.

Note: Statistical significance levels based on differences between research groups: * 10 percent level, ** 5 percent level, *** 1 percent level.

Assumed inputs

One important assumption in the CBA is especially consequential: the return to corporate partners on their investments in Year Up interns. The bolded net benefit estimate in Exhibit 6-7 assumes 50 percent for this return, based on economic theory, interviews with corporate partners, how frequently interns are hired as employees ("conversion rates"), and other information. To consider uncertainty associated with this assumption, it is useful to consider the implications of a range of possible values for employer returns. This is done for benefits in the bottom panel of Exhibit 6-7 and net benefits at the top of Exhibit 6-9, with high and low values of 0 percent and 115 percent. Although values at the extremes are unlikely, each has important implications for policy, as discussed in Section 6.3.2. Most importantly, Year Up has a large,

positive net benefit to society as a whole ($7,290) even under the assumption of 0 returns to corporate partners.[97]

Appendix G examines alternatives to other assumptions, including the discount rate of 3 percent.

Uncertainty in total net benefits calculation

While uncertainty in any individual cost and benefit estimate does not appear to cast doubt on the conclusions that Year Up has large, positive net benefit, it is also useful to characterize the combined effect of uncertainty in the many costs and benefits that go into the total net benefit calculation. Monte Carlo analysis is a standard approach to characterizing the overall uncertainty that results from combining costs and benefits that individually are estimated with uncertainty. Such an analysis recalculates the net benefit a large number of times (we select 50,000) using varying combinations of possible values for each cost or benefit estimate in the calculation.[98]

The second panel of Exhibit 6-9 reports results from a Monte Carlo analysis for the base case of estimates and assumptions. The uncertainty implied by the Monte Carlo analysis is characterized by the standard deviation of the results of the 50,000 calculations, and by the share of calculated total net benefits that represent net gains and net losses.[99]

For the base case (that assumes that the revenue gains are $8,059 with a standard deviation of $600), the key takeaway from the Monte Carlo analysis is that the standard deviation of the 50,000 recalculated net benefits for society as a whole is $4,573, with all but one of the recalculations resulting in an estimated total net gain to society as a whole. **A 90 percent confidence interval for the mean recalculated value of $16,119 contains values ranging from $13,779 to $26,008.**[100] The Monte Carlo analysis thus indicates that the central finding of positive net benefits to society as a whole is robust to uncertainty.

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97 The net benefit to society as a whole under the 115 percent return assumption is $29,700.

98 For elements that are estimated using statistical models that characterize uncertainty, possible values are drawn at random from distributions with a mean, standard deviation, and covariance that reflect the estimated uncertainty. For example, earnings impacts are drawn from a distribution with a mean of $18,088 and standard deviation of $2,015. For elements that are not estimated using statistical models, the analysis follows the standard practice of assuming a distribution of plausible values from which to draw each possible value. The Monte Carlo analysis also incorporates alternative assumptions tested in the sensitivity analysis.

99 This approach resembles that of Schaberg and Greenberg (2020).

100 In a Monte Carlo analysis, a 90 percent confidence interval includes 45,000 of the 50,000 recalculations, with 2,500 recalculations that are less than the low point of the interval and 2,500 that are greater than the high point. The main CBA estimate ($15,349) and the mean recalculated value ($16,119) differ slightly, because the former is based on a single set of estimated inputs whereas the latter is calculated from a large set of simulated values.

Exhibit 6-9: Summary Statistics from the Monte Carlo Analysis of Year Up Total Net Benefits, by Perspective

	Participants	Employers	Government, Federal	Government, State/Local	Rest of Society	Society as a whole (Sum)
Net benefit (from previous tables), assuming return to employers of:						
50% base case ($)	19,774	-8,059	9,758	2,921	-9,045	15,349
Alternative assumptions ($)						
0%	19,774	-16,118	9,758	2,921	-9,045	7,290
115%	19,774	2,418	9,758	2,921	-9,045	25,826
Monte Carlo analysis with 50% corporate partner return (base case)						
Costs and benefits ($)						
Mean cost	-169	16,129	-1,432	-2,129	9,968	22,367
Mean benefit	19,767	8,063	8,693	1,184	779	38,486
Mean net benefit	19,936	-8,066	10,125	3,313	-9,189	16,119
Std. deviation	3,085	1,488	1,131	566	912	4,573
Probability of (%)						
Net gains	100	0	100	100	0	>99.9
Net losses	0	100	0	0	100	<0.1
Monte Carlo analysis with 0% corporate partner revenue return						
Costs and benefits ($)						
Mean cost	-169	16,129	-1,432	-2,129	9,968	22,367
Mean benefit	19,767	0	8,693	1,184	779	30,423
Mean net benefit	19,936	-16,129	10,125	3,313	-9,189	8,057
Std. deviation	3,085	1,366	1,131	566	912	4,538
Probability of (%)						
Net gains	100	0	100	100	0	96.2
Net losses	0	100	0	0	100	3.8
Monte Carlo analysis with 115% corporate partner revenue return						
Costs and benefits ($)						
Mean cost	-169	16,129	-1,432	-2,129	9,968	22,367
Mean benefit	19,767	18,536	8,693	1,184	779	48,959
Mean net benefit	19,936	2,407	10,125	3,313	-9,189	26,592
Std. deviation	3,085	1,941	1,131	566	912	4,742
Probability of (%)						
Net gains	100	89.1	100	100	0	100
Net losses	0	10.9	0	0	100	0

Source: Chapter 6 Exhibits and assumptions detailed in Appendix G.
Note: Probability of net gains and net losses calculated as the share of the 50,000 recalculates that are respectively greater and less than zero.

The bottom half of Exhibit 6-9 reports Monte Carlo results recalculated for the most critical assumption in our analysis: the extent of corporate partner revenue gains.[101] Assuming $0 corporate partner revenue gain from Year Up participation reduces the overall average recalculated societal net benefit to $8,057 per participant. The net benefit thus remains positive and substantial. Positive net benefits are calculated for 96.2% of the 50,000 random draws, with an implied 90 percent confidence interval ranging from $615 to $15,499. Although it is very unlikely that employers received zero financial return from spending on Year Up interns, this assumption represents an important policy scenario: one in which government pays for costs currently borne by employers. **The results of the analysis suggest a wholly government-funded approach also would generate positive net benefits to society as a whole** (assuming that other aspects of program implementation and impacts are not affected by the change in funding source).

The high-end assumption that corporate partner revenue gain is 115 percent of employer costs results in a mean net benefit to society as a whole of $26,592 (with an implied 90 percent confidence interval ranging from $18,815 to $34,369). This assumption also represents an important policy scenario: **It implies even larger benefits to society when all internships are designed to provide cost-effective solutions to employers' labor needs.**[102]

[101] Additional sensitivity analyses in Appendix G show that net benefit conclusions also are robust to alternative values for other components.

[102] See Fein (2016b) and Fein and Hamadyk (2018) for further discussion of Year Up's "customer solutions" initiative, which tailors training to the needs of large companies to create larger pipelines to internships and jobs for program graduates.

7. Conclusions

To summarize this report's key findings, Year Up produced a $1,857 *average quarterly earnings impact in the 12th and 13th quarters after random assignment*—the study's sole confirmatory outcome. It sustained this effect at least through the end of a five-year follow-up period. Large positive earnings impacts appeared in every subgroup and local program office examined. Positive impacts extended to several broader measures of financial status. The program increased the proportion of women who were living on their own and without children. It had little impact on longer-term educational attainment and appeared to decrease the receipt of associate degrees.

Year Up's total benefits to society as a whole exceeded total costs by $15,349 for the average participant over the five-year follow-up period. With earnings impacts showing no signs of fading through the end of the five-year observation period covered in this report, benefits to come could increase substantially. The results show that a program can be relatively expensive—Year Up's direct costs were $28,290 per participant—and yet still pay for itself.

This chapter takes stock of the report's findings and examines some of the broader questions they raise. Section 7.1 answers the four main questions about longer-term impacts posed at the outset of this report. Section 7.2 discusses several broader questions provoked by the findings. Last, Section 7.3 looks ahead to future reports on Year Up.

7.1 Main Findings

The concluding chapter to the earlier, short-term impact report (Fein and Hamadyk 2018) raised four questions about Year Up's longer-term effects. To paraphrase, these questions included: Would the program's large positive earnings impacts persist? Would there be effects on post-secondary education and training in the longer run? Would there be effects in other life domains? And would Year Up's overall benefits to society exceed its costs? This report has begun to answer those questions.

- **Year Up's large positive earnings impacts persisted to the end of the current study's five-year follow-up period.**

Past randomized controlled trials (RCTs) often have found impacts to be short-lived, as control group members catch up with the treatment group's initial boosts in earnings.[103] Year Up's impact on average quarterly earnings in follow-up Quarters 12 and 13 (this report's confirmatory outcome) remained large—$1,857—and statistically significant. This impact represents a 38 percent increase over average earnings for the control group ($4,926). Impacts of about $2,000 extended to the end of this report's five-year follow-up period and showed no signs of fading.

At the time of the three-year survey, earnings gains stemmed mostly from increases in wages ($3.35/hour higher, a 22 percent increase) and to a lesser degree from hours worked by those employed (2 hours/week higher, an 8 percent increase). There was a marked shift towards jobs in Year Up target occupations. Of employed treatment group members, 31 percent were working in the information technology sector, and 21 percent were working in the business/financial sector. The corresponding control group percentages were 5 and 14 percent, respectively.

[103] Among youth-focused studies, an often-cited example is the Job Corps evaluation (Schochet et al. 2008). Positive earnings impacts faded after two years for the full sample (ages 16-24 at intake), though impacts persisted among older sample members (ages 20-24 at intake).

Large earnings impacts appeared for every subgroup examined and for all eight local Year Up offices. These findings are consistent with the first report's conjecture that the program might be effective for somewhat more disadvantaged young adults than it currently serves and in additional cities.

Although substantial for all subgroups and offices, the size of impacts did vary for some characteristics. For example, impacts on earnings were larger for young adults receiving mostly A's or B's in high school ($2,178) than for those receiving mostly C's or below ($1,388), and larger for those who identify as White ($2,931) than those who identify as Black ($1,570). Variation in impacts across the eight local offices (from $956 to $4,811, with most offices in the $1,348 to $1,807 range) suggest that local conditions matter.[104]

Year Up's impacts continue to rank among the largest reported from RCTs of training programs for low-income adults to date. Year Up's impact on annual earnings of $7,894 in Year 5 compares favorably with the largest reported impacts in other studies—notably, a $6,281 impact for Per Scholas[105] and a $5,239 impact for Project QUEST.[106]

Like other sectoral programs, Year Up incorporates intensive screening, trains for high-demand fields, provides intensive supports, includes substantial work-based learning, and cultivates strong relationships with employers. But Year Up is different in a number of respects. It is the only national multi-site sectoral program for young adults operated by a single nonprofit agency. At $28,290 per participant, it is a relatively intensive and costly program. Literature reviewed for this report offers no examples of professional internship programs for low-income young adults on a comparable scale and generating substantial revenue from employers.[107]

Although large and enduring, Year Up's earnings impacts nevertheless did not grow much after Year 2. *Levels* of average earnings did increase substantially in both the treatment and control groups, however. From Years 2 to 5, annual earnings increased from $19,245 to $31,176 (62 percent) in the treatment group and from $13,978 to $23,346 (67 percent) in the control group. Because the fractions employed were constant over this period in both groups, this earnings growth suggests increases in hourly wages, hours worked, or both.

- **The study did not detect an impact on college enrollment after the second follow-up year.**

Generating earnings impacts that increase over time might require doing more during the program to position young adults to successfully pursue additional education and training credentials after the

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[104] Differences across the eight offices were statistically significant (p<.01) in a global test. Possible explanations include differences in local job markets, program implementation, or both. The number of offices was too small to assess such factors statistically.

[105] This impact, highlighted in Schaberg and Greenberg (2020), is Per Scholas's estimated impact for calendar year 2018—approximately the fourth follow-up year for this study (Table 2.1). Impacts analyzed strictly by follow-up year peak at $5,384 in its third follow-up year and decline thereafter (Appendix Table A.2).

[106] This figure is the impact in follow-up Year 9, the largest impact reported for Project QUEST (Roder and Elliot 2019). Although positive for the overall sample, Project QUEST's impact for young adults aged 18-24 was negative (-$4,063) and statistically different from impacts for older adults.

[107] Like Year Up, Per Scholas provides training and internships in entry-level IT positions. While Year Up places interns with outside employers, Per Scholas interns work in the organization's own revenue-generating computer refurbishing business. Although both programs help prepare participants for industry certification exams, such training is a more central feature of the Per Scholas than of the Year Up model (see Fein and Hamadyk 2018, Chapter 4, Section 4.2).

program. The program's emphasis on full-time employment appears to have worked against increases in postsecondary attainment after graduation.

In Year 2, treatment group members' college enrollment rates fell below those of the control group. From Year 3 on, the two groups had equal enrollment rates (see Exhibit 4-1). Few members of either group—and even *fewer* treatment than control group members—had earned an associate degree or higher after five years (see Exhibit 4-2).

Descriptive evidence in Chapter 4 suggests that simultaneously promoting both full-time work and college enrollment can be difficult. Local offices with the largest positive impacts on earnings tended to have the largest negative impacts on college enrollment. And college enrollment rates were substantially higher among treatment and control group members who were working part-time or not working at all than among those who were working full-time. An implication is that adding school to full-time work imposes additional time and stresses that many young adults are unable or unwilling to shoulder.

During the PACE enrollment period (2013-2014), Year Up sought to encourage college persistence by co-enrolling participants at local partner colleges that agreed to grant credits for some program courses. The quality of these arrangements varied across offices but nonetheless boosted average full-time-equivalent college enrollment by about two months in follow-up Year 1 (Fein and Hamadyk 2018). After PACE, to increase the certainty and portability of college credits Year Up shifted to a broader national credit-granting arrangement with the American Council of Education and discontinued arrangements with local colleges.

Meanwhile, a newer Year Up model, the Professional Training Corps (PTC), moves in the opposite direction—to closer partnerships with local colleges. By operating on college campuses, using college courses, and collaborating with college instructors and advisors, the PTC seeks to foster longer-term persistence in college in addition to earnings gains. In both programs, Year Up recently overhauled its approach to career planning to ensure that plans included steps for continuing education after the program.[108]

Wary of diminishing the program's success in boosting entries to career-track jobs, Year Up's leaders have taken a cautious approach to increasing the emphasis on college persistence. Supporting such a stance, workforce experts have warned of the difficulties facing programs that try to take on too many challenges in a fragmented workforce system. Such experts argue that true career pathways require wider changes in systems and policies and cannot be created by individual programs.[109]

- **Three-year survey data show signs of impacts in other life domains, but such effects were not widespread.**

This study's theory of change for Year Up posits that increases in career-track employment and earnings will have radiating effects in other domains. This report found some wider effects on financial situations and family formation, but no impacts on psycho-social outcomes.

Findings from the three-year follow-up survey show expected reductions in public benefits receipt, debt, and financial hardship. Average household income did not increase—perhaps because increased earnings reduced some households' public benefits eligibility and allowed some young adults to live independently (Exhibit 5-1).

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[108] For more on PTC, see Fein et al. (2020).

[109] Hoffman (2015); Davis Jenkins, personal communication, 2013.

Year Up had small effects on living arrangements. It reduced slightly (by 4 percentage points) the fraction of the overall sample who were living with a spouse/partner as of the three-year survey. Among women—but not among men—the program increased the fraction who were not living with either a spouse/partner or child by 10 percentage points.[110] Year Up also may have reduced the fraction of young men living with their parents.[111]

Year Up's logic model posits recursive effects between the psycho-social skills it targets directly and improved economic outcomes. That is, initial increases in skills would help to improve career opportunities, and experience in professional settings would support further skill development.

The findings show no impacts on several psycho-social outcomes measured, however, including measures of grit, core self-evaluation, and social support. This result is somewhat unexpected given the program's immersive approach to life skills training.

Year Up may truly have had no effects on psycho-social outcomes. But other explanations are possible. One possibility is that the study did not measure the specific psycho-social skills that Year Up influenced. The constructs PACE measured – particularly grit and core self-evaluation – may reflect deeply-rooted personality traits rather than more malleable behaviors contributing to success at work and school.[112] Another possibility is that these outcomes were not captured well by the self-report measures included in the survey.[113] Finally, perhaps impacts on such distal outcomes simply take longer than three years to emerge. The next report will assess this last possibility using data from a six-year follow-up survey.

- **Despite its high cost, Year Up's benefits to society exceeded its costs.**

Year Up was financially worthwhile for society as a whole, as well as for participants. The net gain to society was $15,349 per participant—the difference between a benefit of $38,484 and a cost of $23,135. Society gained $1.66 for every $1.00 spent on Year Up.

In addition to the effects on net benefits of large earnings impacts, revenue from employers helped to reduce program costs. This revenue covered a large share (59 percent) of the program's $28,290 per participant cost.

The size of the net gain to society from Year Up depends importantly on the assumed return to employers from their payments. Employers could derive a variety of financial benefits, including the value of interns' work, savings from relying on this instead of more costly recruitment channels, and positive effects on revenues from enhanced perceptions of companies as socially responsible.

Viewing employers as pure profit maximizers would suggest that returns on their investments in interns might be 100 percent or more. On the other hand, if purely altruistic motives are in the mix, returns might be lower than 100 percent.

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[110] This gender difference in impacts for this joint outcome is statistically significant ($p<.05$).

[111] As discussed in Chapter 5, the seven percentage point reduction in living with parents for men is statistically significant ($p<.05$), but the gender difference for this outcome is not statistically significant. Thus, although the results suggest an effect for men, the finding could be spurious. It is nonetheless consistent with findings from basic research on income and living arrangements of young men and women and with results for another PACE site, VIDA (Rolston et al. forthcoming).

[112] Whitehurst (2016a, 2016b) argues this position.

[113] See Duckworth and Yeager (2015) and West et al. (2016) on reference bias and other biases in self-reported psycho-social skills.

Since measuring actual returns to employers was beyond the scope of this study, we selected 50 percent as a base case for the main CBA estimates. Although subjective, we judged this figure to be roughly consistent with the emphasis on financial and social responsibility motives discerned in interviews with a dozen employers.

The estimated net gains to society with zero and 115 percent assumed returns are $7,290 and $25,826, respectively. The first estimate shows that society still would break even if Year Up was entirely government- and foundation-funded and employers did not benefit. The second estimate shows that societal benefits will be quite large when internships are designed to maximally benefit employers as well as participants.

The estimates understate the total gains in two key respects. First, this report's analyses summarize benefits and costs only for an initial five-year follow-up period. The persistence of large earnings impacts through the end of this period suggests a good likelihood of additional benefits to come. Meanwhile, there will be few, if any, further costs since all direct program spending ended soon after the first year.[114] Second, the analysis does not include the monetary value of a number of potential societal benefits—such as improved health, reduced crime, and improved child well-being. Though plausible, the size of any such impacts is uncertain.[115]

Although it is cost-beneficial, Year Up still faces significant financial barriers to scaling due to limits in philanthropy and challenges in scaling its revenue-generating internships. The organization is pursuing a number of adaptations to address this challenge. For example, its college-based Professional Training Corps tests the possibility of bringing average costs down to a level that could be covered entirely by internship revenue (thereby eliminating the need for philanthropic funding). Year Up also is working with like-minded organizations to promote wider understanding of the benefits of increased investments in so-called "opportunity youth" to firms and the rest of society.[116]

7.2 Discussion

The Year Up findings should encourage efforts to adapt, replicate and scale key aspects of the program model. In pursuing such efforts, it is important to understand what aspects are most important to scale, the possibility for displacement of other workers, and the wider populations that might benefit. This section discusses these issues.

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[114] Longer-term increases in net costs from higher post-program education and training spending on treatment group members than on control group members seem unlikely. As reported in Chapter 6, net costs for education and training outside of Year Up were generally negative during follow-up Years 2-5, and there was little sign that positive costs would emerge in the longer run.

[115] One often-cited study (Belfield et al. 2012) put the total societal cost of economic disconnection at $421,650 per "under-attached" young adult—the roughly half of disconnected young adults with some work or school activity in the last year. For other estimates of the wider long-term costs of youth disconnection, see Lewis and Gluskin (2018) and White House Council for Community Solutions (2012).

[116] For example, Year Up is a lead organization in Grads for Life – a national initiative that, as described on its website, "catalyzes market demand for opportunity youth (ages 16-24) by transforming employer perceptions and hiring practices. Grads of Life places an innovative focus on the demand side of the talent marketplace, harnessing the power of the private sector to catalyze an employer-led movement to create pathways to employment for Opportunity Youth nationwide." See https://gradsoflife.org/.

7.2.1 What makes Year Up work?

This evaluation provides strong evidence on Year Up's overall effectiveness but was not designed to measure the effects of individual program components. In lieu of rigorous evidence, stakeholders' views on critical elements – explored in interviews with Year Up staff, participants, and college and employer partners for the implementation study (Fein and Hamadyk 2018) – are a useful source of hypotheses. Informants emphasized four sets of inputs:

(1) Many informants cited Year Up's intensive approach to ***recruitment and applicant screening*** as a critical design element. This approach involves multiple screening steps, during which admissions staff assess applicants for motivation and ability to benefit from the program. Admissions teams look for young adults with challenges the program can help address and who otherwise would have difficulty getting onto strong career paths. Informants also stressed that effective screening helps to ensure that employers have positive experiences with interns and continue to support the program.

The literature offers little direct evidence on what stringent screening contributes to workforce program effectiveness. Intensive screening is a hallmark of the sectoral training approach, and the limited statistics available suggest that other effective programs also screen carefully.[117] But there has been no rigorous study of the degree of stringency needed for these programs to succeed.

(2) A second set of inputs includes ***robust services focused on developing skills—particularly soft skills—and retention*** during the initial six-month L&D phase. These services—detailed in Chapter 1—include courses in "professional," English, and technical skills complemented by extensive supports. Instruction is work-focused and emphasizes active learning and group-based projects. Reinforcing supports and requirements include learning communities; coaching and mentoring; social services; performance-based financial assistance; and a full-time attendance requirement. These services are designed to be synergistic and maximize learning across populations of young adults with varying needs and learning styles.

Year Up stakeholders and prominent outside experts have cited Year Up's strong emphasis on what it terms "professional skills"—also known as "soft" and "non-cognitive" skills—as one of its most powerful change agents.[118] Year Up staff also stress the importance of multiple supports in promoting retention in a challenging full-time program. Clearly, any benefits from internships and post-program employment services are lost to participants who do not reach internships and graduate from the program.

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[117] For example, statistics in Tessler (2014) show that 20 percent of Per Scholas applicants who attended an initial orientation remained in the pipeline to the point of program intake. Because orientation attendees already reflected substantial winnowing, the fraction of all applicants who made it through the entire process was doubtless considerably lower than 20 percent.

[118] In an Organisation for Economic Co-operation and Development working paper, James Heckman and others (Kautz et al. 2014) credit Year Up's effectiveness to its ability to increase non-cognitive skills. As Year Up founder Gerald Chertavian (2013) put it: "Even James Heckman, who has argued that training programs aimed at older youth are often ineffective and that limited resources should be invested in younger children, has noted that programs like Year Up that put an emphasis on soft skills have been finding success."

Most of these strategies have been cited as promising in the literature.[119] RCTs have tested some as individual strategies, although often not in as an intensive a form or against a comparable backdrop of services. Results have shown that a number of strategies can improve the education outcomes they typically target (e.g., college persistence), though impacts are typically modest.[120]

(3) Third, many Year Up stakeholders see its ***internships*** as critical to building skills, connecting young adults with potential employers, and financing the program. Year Up internships are unusual for their length, exposure to professional occupations (often at Fortune 500 companies), and careful monitoring and supervision. They are in some respects similar to apprenticeships, another promising approach to workplace-based learning (see Section 7.2.3). Another unusual aspect of Year Up's internships is the substantial fee employers pay Year Up for each intern. Employers' willingness to pay attests to the value they derive from the program and exemplifies an important innovation in program financing. Year Up's owes its ability to secure internships to its capacity to work closely with employers and address their needs.

The literature offers no evidence from RCTs for comparable internship programs (Fein 2014).[121] Descriptive analyses for a separate paper show by far the largest earnings gains among treatment group members whose internship sponsors offered regular jobs following the program (Fein et al. 2019). This finding implicates internships as key to Year Up's overall impacts, but does not speak to the degree to which successful internships depend on other program inputs (e.g., screening, training, and supports).

None of the above services will matter if they are not effectively implemented. Another potentially important factor is Year Up's strong capacity to effectively integrate and deliver its wide range of services:

(4) Year Up embodies strong and innovative ***organizational qualities and practices***.[122] Its leaders consciously cultivate an entrepreneurial outlook and apply business practices and tools in operating this social program. They have put a strong emphasis on articulating the program's mission and values and on mobilizing key stakeholders—staff, participants, and partner organization—to embrace and work towards these values. Year Up uses well-developed data systems to monitor outcomes, promote accountability, and support continuous improvement.

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[119] See reviews in Ross et al. (2018) and Fein (2012).

[120] Examples include tests of learning communities (Visher et al. 2012, Weiss et al. 2014); coaching and personal assistance (Angrist et al. 2009; Bettinger and Baker 2014; Bettinger et al. 2012); conditional cash transfers (e.g., Riccio et al. 2013); and performance-based student financial assistance (Mayer et al. 2015; Goldrick-Rab et al. 2011).

[121] One of the few evaluations of internship programs—the Young Adult Internship Program in New York City, a program for disconnected young adults ages 16-24—focused on very different types of internships (Cummings et al. 2018). Compared to Year Up, admission criteria were flexible and internships were short (averaging 9.2 weeks at 22 hours/week) and mostly not in high-demand professional occupations. The program had no impacts on employment or education outcomes after internships.

[122] See Fein (2016b) and Fein and Hamadyk (2018) for description and discussion of Year Up's salient organizational characteristics.

> Few studies have sought to estimate the influence of organizational characteristics on the impacts of workforce programs. The limited evidence that does exist indicates that such qualities matter—but the organizational characteristics and workforce services studied were very different from those of Year Up (Bloom et al. 2003).

Interview informants often expressed the view that *all* of Year Up's components matter: "Each piece is linked to create that complete experience for the student." The underlying thesis here is that positive outcomes start with careful selection of young adults who can benefit; require intensive skills training, supports, and accountability; and depend on strong relationships with employers. Sustaining employers' support, in turn, requires ensuring that their experiences with Year Up interns are positive.

Given different learning styles and the thousands of hours normally required to master skills (National Research Council 2012), Year Up's approach—of providing multiple reinforcing strategies (e.g., formal instruction, behavior contract, learning community, work experience)—may be the key to achieving an effective boost in a relatively short time period. Another theme in recent studies is that effective programs require full-time participation.[123]

Although Year Up's success attests to the large impacts that an intensive and comprehensive program *can* have, it does not prove that programs *must be* just as intensive and comprehensive to generate comparable impacts. Year Up itself is testing a variety of hypotheses about what aspects of its program matter most. Most notably, its next-generation PTC program tests the idea that, though all of Year Up's components are important, the intensity of some services can be reduced without detriment to overall effectiveness. PTC students take English and technical courses from college rather than Year Up instructors, spend fewer hours together as a learning community, and receive smaller weekly stipends (Fein et al. 2020).

7.2.2 Does giving some young adults an advantage in the labor market create disadvantages for others?

In theory, two aspects of Year Up's design will help to minimize displacement as the program is scaled.[124] First, the occupations it targets are normally not accessible to low-income young adults. Second, like other sectoral programs, Year Up aims to address labor needs in fast-growing occupations where jobs otherwise might go unfilled. Although direct assessment of displacement is beyond this project's scope, some evidence tends to support these notions.

For example, a number of employers interviewed for the PACE implementation study said that prior to Year Up, entry-level career-track jobs at their companies normally would not be accessible for young adults lacking a college degree. They said that their companies, often major IT and financial services firms, typically focused internships and entry-level hiring on new college graduates from prestigious schools. A number of employers noted that experiences with Year Up interns led them to rethink their hiring approaches. Several commented that Year Up interns often out-performed new

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[123] Other effective programs requiring full-time participation include Per Scholas (Schaberg 2017), Project QUEST (Roder and Elliot 2019), and ASAP (Scrivener et al. 2015).

[124] According to Gomez and Parro (2019), there is little direct evidence on whether youth training programs cause displacement. In lieu of such evidence, they provide simulations showing that, under some conditions, training for lower-skilled youth can lead to a general rise in unemployment. The simulations assumed very different interventions than Year Up. For example, their model puts low-skilled young adult trainees in competition with low-skilled older adults rather than with higher-skilled young adults as in Year Up. Also, their simulations do not assume programs target fast-growing occupations with labor under-supply.

college graduates, particularly on highly valued communication, motivation, and other soft skills. Seeing interns handle well some routine tasks currently performed by middle-level staff, several employers carved out new positions to free existing staff from these responsibilities. Although anecdotal, these reports suggest that to the degree that it occurs, displacement may affect middle-income job seekers more than low-income ones.

Year Up's mission—"to close the Opportunity Divide"—encapsulates the thesis that workforce training should be approached as a "win-win" enterprise, rather than as a "zero sum game." The Opportunity Divide concept emphasizes seeing young adults as an opportunity for employers to address critical shortages of qualified entry-level technical workers. This strategy's success hinges on future demand in technical fields accessible with a year or two of college or—as in Year Up's approach—a year of intensive training and well-structured, work-based learning.[125]

A "win-win" scenario in an economy generating a large number of skilled technical jobs is a plausible outcome but hardly a certain one.[126] To increase prospects for longer-term career success, it may be worth testing strategies that create explicit linkages between effective first-step programs such as Year Up and follow-on training for higher-level jobs.

7.2.3 What are the prospects for applying key innovations and insights from Year Up to broader populations and other interventions?[127]

Year Up's intensive screening reduces substantially the fraction of all low-income young adults it serves. This study's experimental design and findings provide strong evidence of effectiveness for the young adults the program targets. The results do not address whether the program also might

[125] Year Up's six-month classroom and six-month internship phases approximate or exceed the intensity of a year of full-time community college in providing opportunities for skills acquisition. The classroom phase involves on-site training five full days per week, whereas internships offer full-time experience in professional settings monitored by Year Up staff and complemented by weekly half-day seminars back at Year Up offices. Each of the two 6-month phases is also longer than a typical college semester of 14-16 weeks.

[126] Initial debates about demand forecasts had a "glass half empty/half full" character. Some analysts stressed forecasts for slower growth in middle-skilled than in lower- and upper-skilled jobs, whereas others noted that the number of middle-skilled jobs was nonetheless large and growing (Autor 2010, Holzer and Lerman 2009, Holzer 2010). More recent work has sought to refocus the occupations of interest—from "middle skilled" jobs to "skilled technical" occupations. Forecasts for the latter generally show substantial growth in well-paying technical fields accessible without a four-year degree (Holzer 2015; National Research Council 2017).

Meanwhile, future trends in college degree requirements are uncertain. Recent studies show considerable tightening and loosening of degree requirements (referred to as "up skilling" and "down skilling," respectively) as labor markets weaken and strengthen (Burning Glass 2014; Fuller et al. 2017; Holzer 2015; Modestino 2016; Modestino et al. 2016). Forecasted declines in college graduates may increase employers' willingness to look more closely at applicants' skills and condition less on degrees (Carnevale et al. 2010, 2013; Holzer and Lerman 2009). On the other hand, advances in technology further may increase premiums on skills requiring college-level training and above (Autor et al. 2003, Autor and Price 2013, Goldin and Katz 2008, Holzer 2019, National Research Council 2017, and Valletta 2016).

[127] We acknowledge Heinrich's (2013) useful formulation of this question.

benefit a wider population.[128] This section suggests steps that would be useful in assessing wider applicability.

First, subgroup findings showing positive impacts for more-disadvantaged segments within the current target population suggest that Year Up might be effective with somewhat broader populations: for example, older[129] and more socioeconomically disadvantaged adults.

Second, enhanced versions of the program might be tested for substantially lower-skilled young adults than Year Up currently serves and for high school students. Possible enhancements include adding a pre-program phase concentrating on basic skill remediation and offering internships in jobs requiring lower skill levels.[130] Adaptations for high school seniors also might be worth considering; these would articulate with high school curricula, adapt content to address development issues for younger teens, and emphasize different training and employment outcomes.[131]

Third, there may be room for expanding benefits within Year Up's current target population. Results in separate analyses of PACE Year Up data (Fein et al. 2019) show that positive outcomes were concentrated among treatment members who received job offers from their internship sponsors. For other interns, strategies to improve training, retention and matching with particular firms might help to increase impacts.

Moving beyond adaptations of Year Up itself, there could be benefits to incorporating Year Up strategies in other programs for low-income adults. Training programs such as Workforce Innovation and Opportunity Act (WIOA) and the Health Profession Opportunity Grants (HPOG) Program serve wider populations of low-income adults, provide less-intensive services than Year Up, and have had at best modest positive impacts (Bloom et al. 1997; Fortson et al. 2017; Peck et al. 2019). It could be valuable to test the addition of promising Year Up services, adapted for more-disadvantaged groups served in these programs. For example, an experiment might randomize WIOA or HPOG applicants into four groups: one receiving Year Up professional skills strategies, another receiving Year Up-style internships (with coaching), a third receiving both services, and a fourth receiving neither (i.e., usual services).

Such tests might explore approaching internships somewhat differently, perhaps shortening and focusing them on different goals for youth with lower skills and more life challenges. Preparing such youth for careers is likely to take more time than even more intensive programs afford. That is one implication of evaluations of programs such as Job Corps, National Guard Youth Challenge, and YouthBuild, which have shown relatively modest and sometimes short-lived earnings impacts.[132]

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[128] Deaton and Cartwright (2018) discuss the difficulties in generalizing from RCTs of highly selective populations.

[129] Maguire (2016) observes that mixed-age learning communities could expose young adults to a wider range of life experiences as well as energize training experiences for somewhat older adults.

[130] Escobari et al. (2019) provide useful analyses and discussion of good bets for target occupations.

[131] As Heinrich (2013) notes, a high school adaption would have the advantage of intervening "upstream" of disconnection from school and work that can be harder to overcome. Such a program might emphasize follow-on training over work more than Year Up's traditional model, though heavily work-based forms of training such as apprenticeships might be well suited for accelerating the momentum Year Up generates.

[132] See Schochet et al. (2008) and Schochet (2018) on Job Corps, Millenky et al. (2011) on National Guard Youth ChalleNGe, and Miller et al. (2018) for YouthBuild.

Rather than expecting such programs to produce large earning impacts with no more than a year of training, some researchers have suggested reconceiving them as on-ramps to Year Up–level training.[133] Tests of inter-linked programs could be valuable in assessing the case for more systemic improvements in connections in a badly fragmented U.S. workforce system.[134]

Finally, Year Up's experience also can inform ongoing efforts to expand apprenticeships in the United States.[135] Like Year Up, traditional apprenticeships provide sustained opportunities for hands-on learning in an occupation, create strong connections with employers, and provide related training and supports. Compared to European-style apprenticeships, Year Up internships provide a shorter trial employment period and require less up-front commitment to hire from employers—while generating substantial revenue for associated training and supports. This greater flexibility may fit hiring preferences at U.S. companies better than the European approach.[136] From 2015 to mid-2019, Year Up generated more than 12,000 internships.[137] Its substantial expertise and capacity in this arena could be valuable in efforts to expand apprenticeships.[138]

7.3 Looking Ahead

The next Year Up report from PACE will provide impact analyses over an even longer follow-up period—one centering on six years and extending to seven years for some outcomes. These analyses will provide further evidence on the longevity of Year Up's large earnings impacts. The extended data also will be used to project Year Up's lifetime benefits for young adults for the final cost-benefit analysis.

As part of that final reporting, a third follow-up survey conducted approximately six years after random assignment will support fine-grained analyses of employment and education experiences. The survey will also measure outcomes in selected distal domains such as financial status, family formation, and psycho-social well-being. The Year Up experiment affords an especially valuable opportunity to study causal connection across domains, thanks to the program's large earnings impacts and lengthy follow-up in PACE.

The sudden economic downturn caused by the COVID-19 pandemic is likely to affect employment and related outcomes for both the Year Up treatment and control groups. Whether and how effects on the two groups might differ are uncertain. The implications for impacts will depend on the depth and duration of the downturn in different occupations and on the degree of job security sample members in each group had achieved prior to COVID-19. The next report will cover at least six quarters of post-pandemic observation and begin to assess these effects.

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133 See Bloom and Miller (2018) for additional perspectives on this idea.

134 For discussions of fragmentation in the U.S. workforce system, see Bloom and Miller (2018), Fein (2014), and Hoffman (2015).

135 See Lerman (2019) and resources at https://www.dol.gov/apprenticeship/.

136 On the need for greater flexibility in U.S. apprenticeships and international comparisons, see Jacoby and Lerman (2019) and Hoffman (2015).

137 Tabulations of office-level statistics in a spreadsheet provided by Year Up in July 2019.

138 See Fein (2016b) and Fein and Hamadyk (2018) for discussion of Year Up's approach and plans for working with employers to scale internships.

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Supplemental Exhibits for Chapters 3 and 4

Exhibit S-1: Average Quarterly Earnings in Successive Follow-up Quarters

Average Earnings in	Treatment	Control	Impact	Standard Error	Relative Impact	*p*-Value
Quarter −2	1,626	1,628	−2	90	-0.1	.981
Quarter −1	1,731	1,718	+13	94	0.8	.889
Quarter 0	1,467	1,795	− 328 ***	62	-18.3	<.001
Quarter 1	920	2,367	− 1,447 ***	79	-61.1	<.001
Quarter 2	772	2,596	− 1,823 ***	90	-70.2	<.001
Quarter 3	815	2,984	− 2,170 ***	101	-72.7	<.001
Quarter 4	2,695	3,153	− 458 ***	120	-14.5	<.001
Quarter 5	5,277	3,456	+1,821 ***	146	52.7	<.001
Quarter 6	5,595	3,503	+2,092 ***	155	59.7	<.001
Quarter 7	5,678	3,865	+1,813 ***	163	46.9	<.001
Quarter 8	5,641	3,899	+1,742 ***	167	44.7	<.001
Quarter 9	6,095	4,295	+1,800 ***	177	41.9	<.001
Quarter 10	6,237	4,504	+1,733 ***	182	38.5	<.001
Quarter 11	6,392	4,621	+1,770 ***	187	38.3	<.001
Quarter 12	6,668	4,873	+1,795 ***	201	36.8	<.001
Quarter 13	6,896	4,978	+1,918 ***	200	38.5	<.001
Quarter 14	7,080	5,107	+1,973 ***	208	38.6	<.001
Quarter 15	7,294	5,368	+1,926 ***	211	35.9	<.001
Quarter 16	7,400	5,565	+1,835 ***	222	33.0	<.001
Quarter 17	7,778	5,745	+2,032 ***	220	35.4	<.001
Quarter 18	7,858	5,848	+2,010 ***	233	34.4	<.001
Quarter 19	8,140	6,188	+1,952 ***	236	31.5	<.001

Source: Quarterly wage records obtained in a match to the National Directory of New Hires.

Note: Statistics under "Relative Impact" represent impacts in column 3 as a percentage of the corresponding control group mean (i.e., 100 * [impact / control group mean]). Statistical significance levels based on two-sided tests of differences between research groups: * 10 percent level, ** 5 percent level, *** 1 percent level.

Exhibit S-2: Percentage Employed in Successive Follow-up Quarters

Ever Employed in	Treatment	Control	Effect	Standard Error	Relative Impact	*p*-Value
Quarter -2	61.6	58.5	+3.1	2.1	5.3	.135
Quarter -1	63.4	59.3	+4.0 **	2.1	6.7	.049
Quarter 0	58.4	65.7	−7.4 ***	1.8	-11.3	<.001
Quarter 1	43.8	71.9	−28.1 ***	1.8	-39.1	<.001
Quarter 2	37.3	73.9	−36.6 ***	1.8	-49.5	<.001
Quarter 3	35.0	75.1	−40.1 ***	1.8	-53.4	<.001
Quarter 4	68.7	75.9	−7.2 ***	1.8	-9.5	<.001
Quarter 5	83.6	80.1	+3.5 **	1.6	4.4	.028
Quarter 6	82.9	78.0	+4.9 ***	1.7	6.3	.003
Quarter 7	81.5	76.3	+5.2 ***	1.7	6.8	.002
Quarter 8	80.4	76.5	+3.9 **	1.7	5.1	.023
Quarter 9	79.9	77.4	+2.5	1.7	3.2	.135
Quarter 10	81.0	78.8	+2.2	1.7	2.8	.186
Quarter 11	81.7	81.8	−0.1	1.6	-0.1	.960
Quarter 12	81.7	78.0	+3.7 **	1.7	4.7	.029
Quarter 13	81.7	79.6	+2.1	1.7	2.6	.202
Quarter 14	82.2	79.0	+3.2 *	1.7	4.1	.055
Quarter 15	82.8	81.4	+1.5	1.6	1.8	.356
Quarter 16	83.5	80.4	+3.0 *	1.6	3.7	.068
Quarter 17	84.1	81.9	+2.2	1.6	2.7	.173
Quarter 18	82.2	81.4	+0.8	1.6	1.0	.663
Quarter 19	82.4	81.8	+0.5	1.6	0.6	.398

Source: Quarterly wage records obtained in a match to the National Directory of New Hires.

Note: Statistics under "Relative Impact" represent impacts in column 3 as a percentage of the corresponding control group mean (i.e., 100 * [impact / control group mean]). Statistical significance levels based on two-sided tests of differences between research groups: * 10 percent level, ** 5 percent level, *** 1 percent level.

Exhibit S-3: Impacts on Average Total Earnings in Follow-up Years 1-5, by Subgroup

Characteristic	(1) Treatment	(2) Control	(3) Impact (Col. 1 – Col. 2)		(4) Relative Impact	Subgroup Sample Size (5) Treatment	Subgroup Sample Size (6) Control
Age (*p*=.801)							
<20	94,203	70,459	23,744	***	33.7	419	219
20-22	109,437	86,898	22,539	***	25.9	782	386
23-24	113,153	93,714	19,440	***	20.7	437	253
Gender (*p*=.626)							
Male	109,709	88,679	21,030	***	23.7	968	506
Female	102,324	79,008	23,316	***	29.5	670	352
Race-Ethnicity (*p*=.072)			†				
Hispanic, any race	119,917	95,287	24,630	***	25.8	524	273
Black, non-Hispanic	91,120	73,871	17,249	***	23.4	888	462
White/Another, non-Hispanic	136,366	101,956	34,410	***	33.7	226	123
Usual High School Grades (*p*=.009)			†††				
C's or below	98,578	84,053	14,524	***	17.3	963	530
A's and B's	112,184	85,119	27,065	***	31.8	675	328
Educational Attainment (*p*=.098)			†				
High school	96,622	79,241	17,381	***	21.9	842	462
<1 year college	107,835	84,719	23,116	***	27.3	366	183
1+ year college	126,925	96,571	30,354	***	31.4	430	213
Training Commitment (*p*=.128)							
Low	107,565	82,225	25,340	***	30.8	548	279
Medium	108,718	83,101	25,617	***	30.8	503	283
High	104,110	88,595	15,515	***	17.5	587	296
Depressive Symptoms (*p*=.160)							
Low	110,624	84,283	26,341	***	31.3	663	358
Medium	110,395	87,020	23,375	***	26.9	347	213
High	99,802	83,532	16,270	***	19.5	628	287
Life Challenges (*p*=.514)							
Low	115,702	90,554	25,148	***	27.8	630	336
Medium	108,045	86,976	21,069	***	24.2	480	257
High	93,989	75,107	18,882	***	25.1	528	265
Expected Work Hours (*p*=.230)							
<10/week	98,387	73,811	24,576	***	33.3	637	341
10-29/week	116,723	94,055	22,669	***	24.1	720	363
30+/week	101,021	86,824	14,197	***	16.4	281	154

Continued

Exhibit S-3 (Continued)

Characteristic	(1) Treatment	(2) Control	(3) Impact		(4) Relative Impact	Sample Size (5) Treatment	Sample Size (6) Control
Office (*p*=.004)			†††				
A	79,767	68,127	11,640	*	17.1	161	85
B	115,451	101,905	13,546	**	13.3	316	161
C	112,034	99,702	12,331	***	12.4	156	85
D	101,884	79,054	22,829	***	28.9	242	120
E	85,784	64,606	21,178	***	32.8	173	98
F	97,776	74,204	23,572	***	31.8	273	149
G	116,132	94,422	21,710	***	23.0	158	82
H	152,234	94,788	57,446	***	60.6	159	78
Total sample						1,638	858

Source: Average annual earnings based calculated from quarterly wage records obtained in a match to the National Directory of New Hires. Characteristics as measured in PACE baseline surveys.

Note: Daggers appearing in the top row for each characteristic identify characteristics for which subgroup impacts differ † at the 90% level, †† at the 95% level, ††† at the 99% level, based on a two-tailed test. Associated *p*-values shown immediately to the right of characteristics' names. Stars summarize tests of whether impacts for individual subgroups are statistically significant: * Impact for subgroup differs from zero in a two-tailed test at the 90% level, ** at the 95% level, *** at the 99% level. See Appendix A for definitions of characteristics.

Exhibit S-4: Percentage Enrolled in College in Successive Follow-up Quarters

Enrolled in	Treatment	Control	Impact	Standard Error	Relative Impact	*p*-Value
Quarter −2	22.1	19.9	+2.2	1.6	11.1	.153
Quarter −1	21.3	18.8	+2.5	1.5	13.3	.103
Quarter 0	47.9	16.1	+31.8***	1.7	197.5	<.001
Quarter 1	59.8	18.1	+41.7***	1.7	230.4	<.001
Quarter 2	55.6	25.4	+30.3***	1.9	119.3	<.001
Quarter 3	47.1	25.7	+21.4***	1.9	83.3	<.001
Quarter 4	17.3	25.8	−8.5***	1.7	-32.9	<.001
Quarter 5	15.3	25.5	−10.2***	1.7	-40.0	<.001
Quarter 6	17.4	24.7	−7.3***	1.7	-29.6	<.001
Quarter 7	17.8	23.7	−5.9***	1.7	-24.9	<.001
Quarter 8	19.2	19.5	−0.4	1.6	-2.1	.823
Quarter 9	19.7	19.7	−0.1	1.6	-0.5	.955
Quarter 10	18.3	19.5	−1.2	1.6	-6.2	.443
Quarter 11	17.5	18.6	−1.1	1.6	-5.9	.499
Quarter 12	16.6	18.3	−1.7	1.6	-9.3	.280
Quarter 13	16.3	17.9	−1.6	1.6	-8.9	.311
Quarter 14	15.8	15.4	+0.4	1.5	2.6	.769
Quarter 15	15.7	15.2	+0.5	1.5	3.3	.733
Quarter 16	15.4	15.2	+0.2	1.5	1.3	.887
Quarter 17	14.9	14.5	+0.4	1.5	2.8	.784
Quarter 18	13.5	14.4	−0.8	1.4	-5.6	.560
Quarter 19	13.2	14.1	−1.0	1.4	-7.1	.505

Source: College enrollment records from a match to the National Student Clearinghouse.

Note: Statistics under "Relative Impact" represent impacts in column 3 as a percentage of the corresponding control group mean (i.e., 100 * [impact / control group mean]). Statistical significance levels based on two-sided tests of differences between research groups: * 10 percent level, ** 5 percent level, *** 1 percent level.

Exhibit S-5: Cumulative Percentage Ever Receiving Any College Credential in Successive Follow-up Quarters

Ever Received Any Credential Through	Treatment	Control	Impact	Standard Error	Relative Impact	*p*-Value
Quarter 0	0.2	0.2	+0.0	0.2	0.0	.984
Quarter 1	0.8	0.7	+0.1	0.4	14.3	.800
Quarter 2	1.0	0.9	+0.1	0.4	11.1	.785
Quarter 3	4.7	1.6	+3.1***	0.7	193.8	<.001
Quarter 4	4.9	1.8	+3.0***	0.7	166.7	<.001
Quarter 5	8.6	2.2	+6.5***	0.8	295.5	<.001
Quarter 6	8.7	2.6	+6.1***	0.9	234.6	<.001
Quarter 7	9.1	3.1	+6.0***	0.9	193.5	<.001
Quarter 8	9.1	3.4	+5.7***	0.9	167.6	<.001
Quarter 9	9.7	4.6	+5.1***	1.0	110.9	<.001
Quarter 10	10.2	5.1	+5.1***	1.0	100.0	<.001
Quarter 11	10.8	6.0	+4.8***	1.1	80.0	<.001
Quarter 12	10.8	6.7	+4.2***	1.1	62.7	<.001
Quarter 13	11.3	7.7	+3.6***	1.2	46.8	.002
Quarter 14	11.7	8.0	+3.7***	1.2	46.3	.002
Quarter 15	13.0	9.0	+4.0***	1.2	44.4	.001
Quarter 16	13.2	9.4	+3.8***	1.3	40.4	.002
Quarter 17	14.3	10.0	+4.3***	1.3	43.0	<.001
Quarter 18	14.6	10.3	+4.2***	1.3	40.8	.001
Quarter 19	15.0	10.8	+4.2***	1.3	38.9	.002

Source: College credential records from a match to the National Student Clearinghouse.

Note: Statistics under "Relative Impact" represent impacts in column 3 as a percentage of the corresponding control group mean (i.e., 100 * [impact / control group mean]). Statistical significance levels based on two-sided tests of differences between research groups: * 10 percent level, ** 5 percent level, *** 1 percent level.

Exhibit S-6: Cumulative Percentage Ever Receiving Associate Degree or Higher in Successive Follow-up Quarters

Ever Received Associate Degree or Higher through	Treatment	Control	Impact	Standard Error	Relative Impact	*p*-Value
Quarter 0	0.1	0.2	−0.1	0.2	-50.0	.522
Quarter 1	0.4	0.7	−0.3	0.3	-42.9	.375
Quarter 2	0.5	0.9	−0.5	0.4	-55.6	.208
Quarter 3	0.6	1.4	−0.8 *	0.4	-57.1	.068
Quarter 4	0.8	1.8	−1.0 **	0.5	-55.6	.045
Quarter 5	1.2	2.0	−0.8	0.5	-40.0	.151
Quarter 6	1.3	2.0	−0.7	0.5	-35.0	.189
Quarter 7	1.5	2.3	−0.8	0.6	-34.8	.161
Quarter 8	1.6	2.4	−0.8	0.6	-33.3	.182
Quarter 9	2.0	3.0	−1.0	0.7	-33.3	.136
Quarter 10	2.4	3.1	−0.7	0.7	-22.6	.332
Quarter 11	2.7	4.0	−1.3 *	0.8	-32.5	.085
Quarter 12	3.0	4.7	−1.7 **	0.8	-36.2	.029
Quarter 13	3.5	5.4	−1.9 **	0.8	-35.2	.024
Quarter 14	3.9	5.9	−1.9 **	0.9	-32.2	.030
Quarter 15	5.2	6.5	−1.4	1.0	-21.5	.148
Quarter 16	5.6	7.1	−1.5	1.0	-21.1	.125
Quarter 17	6.2	7.8	−1.6	1.0	-20.5	.122
Quarter 18	6.7	8.2	−1.5	1.1	-18.3	.157
Quarter 19	7.0	8.6	−1.6	1.1	-18.6	.138

Source: College credential records from a match to the National Student Clearinghouse.

Note: Statistics under "Relative Impact" represent impacts in column 3 as a percentage of the corresponding control group mean (i.e., 100 * [impact / control group mean]). Statistical significance levels based on two-sided tests of differences between research groups: * 10 percent level, ** 5 percent level, *** 1 percent level.

Exhibit S-7: Impacts on the Percentage Enrolled in College in Follow-up Quarters 12 and 13, by Subgroup

Characteristic	(1) Treatment	(2) Control	(3) Impact (Col 1. – Col. 2)	(4) Relative Impact	Subgroup Sample Size (5) Treatment	Subgroup Sample Size (6) Control
Age (*p*=.710)						
<20	20.4	20.8	−0.5	−2.4	454	240
20-22	18.8	18.9	0.0	0.0	782	387
23-24	15.3	18.4	−3.1	−16.8	432	244
Gender (*p*=.369)						
Male	15.5	17.7	−2.2	−12.4	984	514
Female	22.3	21.6	0.8	3.7	684	357
Race-Ethnicity (*p*=.295)						
Hispanic, any race	19.2	22.8	−3.7	−16.2	533	276
Black, non-Hispanic	17.1	15.8	1.3	8.2	904	469
White/Another, non-Hispanic	20.7	24.6	−3.9	−15.9	231	126
Usual High School Grades (*p*=.767)						
A's and B's	21.1	22.4	−1.4	−6.3	980	540
C's or below	13.8	14.2	−0.4	−2.8	688	331
Educational Attainment (*p*=.608)						
High school	14.8	16.4	−1.6	−9.8	862	470
<1 year college	19.9	17.8	2.0	11.2	370	185
1+ year college	24.5	26.9	−2.4	−8.9	436	216
Training Commitment (*p*=.208)						
Low	15.6	17.5	−2.0	−11.4	558	285
Medium	19.8	16.7	3.1	18.6	514	287
High	19.7	23.4	−3.7	−15.8	596	299
Depressive Symptoms (*p*=.236)						
Low	18.0	16.7	1.3	7.8	672	359
Medium	18.3	17.9	0.4	2.2	361	218
High	18.6	23.5	−4.8 *	−20.4	635	294
Life Challenges (*p*=.559)						
Low	19.0	19.6	−0.6	−3.1	642	336
Medium	17.2	20.6	−3.5	−17.0	488	262
High	18.5	17.6	0.9	5.1	538	273
Expected Work Hours (*p*=.377)						
<10/week	19.5	23.3	−3.8	−16.3	637	343
10-29/week	18.0	17.4	0.6	3.4	721	356
30+/week	16.4	15.1	1.3	8.6	310	172

Continued

Exhibit S-7 (Continued)

Characteristic	(1) Treatment	(2) Control	(3) Impact (Col. 1 – Col. 2)	(4) Relative Impact	Subgroup Sample Size (5) Treatment	Subgroup Sample Size (6) Control
Office (*p*=.004)			†††			
A	15.3	8.0	7.3 *	91.3	164	87
B	18.4	14.2	4.2	29.6	320	162
C	17.9	17.6	0.2	1.1	159	85
D	14.3	14.6	−0.3	−2.1	244	123
E	21.3	12.1	9.2 **	76.0	179	99
F	21.8	31.1	−9.4 **	−30.2	277	151
G	17.1	20.7	−3.6	−17.4	163	82
H	19.0	35.4	−16.3 ***	−46.0	162	82
Total sample					1,638	858

Source: Enrollment rates calculated from records obtained in a match to the National Student Clearinghouse. Characteristics as measured in PACE baseline surveys.

Note: Daggers appearing in the top row for each characteristic identify characteristics for which subgroup impacts differ † at the 90% level, †† at the 95% level, ††† at the 99% level, based on a two-tailed test. Associated *p*-values shown immediately to the right of characteristics' names. Stars summarize tests of whether impacts for individual subgroups are statistically significant: * Impact for subgroup differs from zero in a two-tailed test at the 90% level, ** at the 95% level, *** at the 99% level. See Appendix A for definitions of characteristics.