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REPORT BRIEF

Return on Investment of Industry-Focused Job Training Programs

With the support of federal funds, private funds, NYC Opportunity, and other partners, the NYC Department of Small Business Services (SBS) has developed several industry-focused job training programs which help jobseekers develop high-demand skills. This analysis shows that while costing more to deliver, SBS industry-focused job training programs resulted in a positive return on investment (ROI) for participants, taxpayers, and society compared to workforce development services that did not include training. This suggests that the strategies used by the job training programs to tie training to local labor market demand—including sectoral strategies, incumbent worker training, and on-the-job training—were successful at helping low-wage workers increase their earnings while reducing their dependence on public assistance.

Key findings

Industry-focused job training programs resulted in a positive ROI to participants, taxpayers, and society. For participants, costs were relatively low. While most participants needed to forego some earnings to participate, the increases in wages far exceeded these costs. Taxpayers paid the majority of costs for training and, due to the nature of taxpayer returns, had fewer opportunities for benefits. Despite this, the taxpayer ROI for each of these programs was positive after 10 years and the vast majority at 5 years.

All of the job training programs had significant positive impacts on earnings. Earnings impacts ranged from about $1,400 to $3,000 in the second quarter after exit, on top of earnings from a matched comparison group of participants who received job matching services.

All of the job training programs produced considerable benefits for participants. Participant returns ranged from $54,234 to $107,994 over 10 years compared to those who received workforce development services that did not include training. The primary sources of returns for participants are increased earnings and fringe benefits.

Taxpayers received a positive ROI after 10 years despite paying all job training costs. The 10-year taxpayer returns ranged from $0.35 to $3.68 for every dollar invested by taxpayers in the program.

All of the job training programs had a positive ROI from the societal perspective. Societal ROIs ranged from $6.32 to $35.21 for every dollar invested over 10 years. The societal perspective sums the costs and returns to participants and taxpayers.

Averaged over all programs, 10-year ROIs for participants, taxpayers, and society were $292.68, $2.02, and $18.80, respectively.

Background

While the U.S. economy recovered from the Great Recession of 2007-09, the labor market has restructured in fundamental ways. First, there is a proliferation of low-skill, low-wage jobs that offer workers little prospect for advancement. Individuals with no more than a high school education have seen their wages remain flat in real terms for decades, and their employment is often unsteady (Mishel, Gould, & Bivens, 2015; Schmitt & Jones, 2012). Given the fact that low-skilled workers have difficulty

obtaining jobs that offer higher wages, programs that train individuals in areas that match the skills demanded by employers can be highly advantageous, as they potentially benefit both workers and employers.

The City of New York's Career Pathways report, released in June 2014, called for a major reorientation in the workforce system away from an emphasis on immediate job placement toward training for careers in high-demand industries that offer advancement potential. As part of its effort to identify and expand promising workforce training initiatives, the Mayor's Office for Economic Opportunity (NYC Opportunity) contracted with Westat and Metis Associates to conduct a formal ROI analysis of industry-focused job training programs managed by SBS.

The ROI study looked at the economic returns for individuals who received industry-focused training compared to individuals who received standard job matching services at NYC's Workforce1 Career Centers (WF1CCs). The study included individuals who entered training in FY 2014-2015. Several different industry-focused training programs were covered in the study, including those in the sectors of construction, transportation, healthcare, and information technology.

Industry-Focused Job Training Programs

This ROI study included six training programs. **Individual Training Grants (ITGs)** are vouchers to pay for training in occupations such as security guards, bus and truck drivers, certified nursing assistants, network and computer systems administrators, and computer support specialists.

Healthcare Cohort Training includes occupations such as dental anesthesia, dental assistant, home health aide, medical assistant, paramedic, patient care technician, pharmacy technician, and registered nurse

Industrial and Construction Cohort Trainings include occupations such as electricians, cable installers, welders, school or city bus drivers, and carpenters.

Tech Cohort Trainings include advanced web development.

The Customized Training (CT) Program supports low-wage incumbent workers by covering the majority of training costs for businesses that pledged to raise wages for participating workers.

The On-the-Job Training Program (OJT) helps employers recruit qualified candidates and provides grants to cover 70 percent of up to 280 hours of training for new employees. OJT is also referred to as the New Skills, New Jobs Program.

Populations Served

The industry-focused job training programs served about 4,500 Individuals in fiscal years (FY) 2014-2015. Job training program participants were predominantly male; however, Healthcare Cohort and CT served predominantly females. Prior to training, Healthcare Cohort participants had the lowest quarterly earnings, whereas CT participants had the highest earnings. Tech Cohort participants were younger and more likely to have some college, vocational training, or higher compared to other job training program participants.

Characteristic	ITGs	Healthcare Cohort	Industrial Cohort	Tech Cohort	CT	OJT
Participants	2,727	781	159	137	428	262
Female (%)	42.1	88.2	17.0	45.3	55.6	37.4
Non-white (%)	81.6	81.7	83.0	57.7	62.9	76.7
Age at enrollment	34.8	33.1	34.1	25.5	33.2	33.8
Some college, vocational training, or higher (%)	59.6	56.6	51.0	83.9	77.8	66.4
Mean prior quarterly earnings ($)[a]	3,102	1,893	3,986	2,772	6,053	2,580

SOURCES: SBS program data, NYSDOL UI wage and benefit records.
[a] Mean earnings in the 8 quarters immediately prior to entry. Includes quarters with 0 earnings.

Return on Investment Analysis

Job training is an investment that yields future benefits. ROI is the ratio of net benefits to costs. The net benefits are the total returns minus costs. ROI is expressed as a dollar-per-dollar return and represents the returns on top of the initial investment. To estimate the program benefits and costs, the study used ROI strategies discussed in Hollenbeck and Huang (2014). This study estimates the ROI of industry-focused job training programs on top of job matching services provided by WF1CCs.

$$\text{ROI (\$)} = \frac{\text{Benefits - Costs}}{\text{Costs}}$$

$$\text{Net Returns} = \text{Benefits} - \text{Costs}$$

Estimating Costs and Benefits

The study included training program participants who enrolled in fiscal years (FY) 2014 and 2015. The study used propensity score matching (PSM) to calculate the net impacts on earnings and use of unemployment insurance (UI), Supplemental Nutritional Assistance Program (SNAP), and cash assistance (CA). The impact on earnings was used to estimate changes in fringe benefits and tax payments. The study matched program participants to Workforce1 Career Center (WF1CC) participants who did not participate in training but who were similar in demographic characteristics and prior earnings. "Workforce1" is the City's branding of its Workforce Investment and Opportunity Act (WIOA)-funded career centers, which are known nationally as "one-stops" or American Job Centers. For CT, the study used a before-and-after method for estimating impacts because CT participants were employed at the start of training, and there was no comparable group of WF1CC participants to use in PSM. Impacts were measured in the second quarter after exit to allow time for participants to find a job after completing training. These estimates were then used to project 5- and 10-year returns. Program costs were calculated with data from NYC SBS and NYC Opportunity. Benefits and costs were converted to 2016 dollars, and benefits were adjusted to reflect the present value of returns. For detailed methodology, see the report referenced at the end of this issue brief.

ROI Perspectives

The study estimated the ROI of job training programs from the participant, taxpayer, and societal perspectives. These perspectives illustrate the distribution of costs and benefits to the different stakeholders in job training programs.

The **participant perspective** focuses on the monetary costs and returns to participants. Since these programs are free to participants, costs only include foregone earnings due to reducing work time while in training. Benefits include higher earnings and fringe benefits, net of any increases in taxes and reductions in public assistance.

The **taxpayer perspective** measures the government ROI. Costs include the cost of providing job training. Benefits are increased revenue in the form of federal, state, and local taxes and decreased expenditures due to lower uptake of public assistance programs.

The **societal perspective** includes the net costs and benefits of both participants and taxpayers. In the societal perspective, reduced use of public assistance and tax payments cancel out because they are simply a transfer from one group to another.

Measured Costs and Benefits of Job Training Programs

	Participant	Taxpayer	Society
Costs	■ Foregone earnings	■ Program costs	■ Foregone earnings ■ Program costs
Benefits	**Increases in:** ■ Earnings ■ Fringe benefits	**Increases in:** ■ Tax payments **Reduced payments of:** ■ UI ■ SNAP ■ CA	**Increases in:** ■ Earnings

Net Impact Estimates

	ITGs	Healthcare Cohort	Industrial Cohort	Tech Cohort	CT	OJT
Employment (%)	13.8*	23.3*	13.2*	-4.4	11.3	9.2*
Earnings ($)	1,436*	2,102*	3,067*	2,931*	1,994*	2,310*
UI benefits ($)	-107*	-116*	8	-84	-14	103*
CA benefits ($)	-7	-24	-65*	-7	-3	-8
SNAP benefits ($)	3	14	15	-23	-17	-48

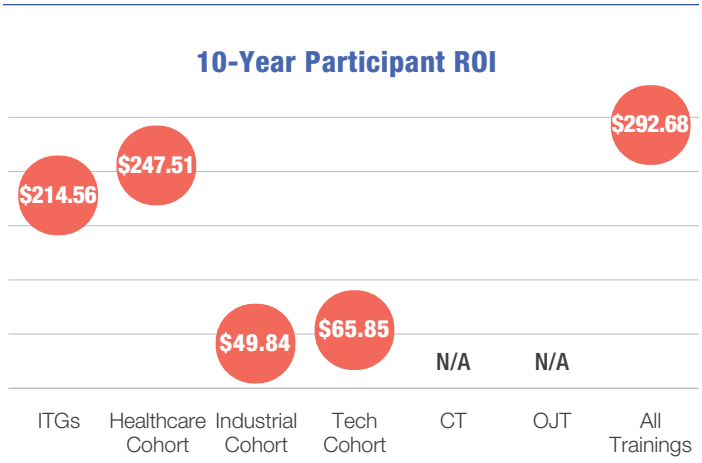
Note: Each entry represents the mean difference in the outcome between the job training program participants and the matched WF1CC participants.

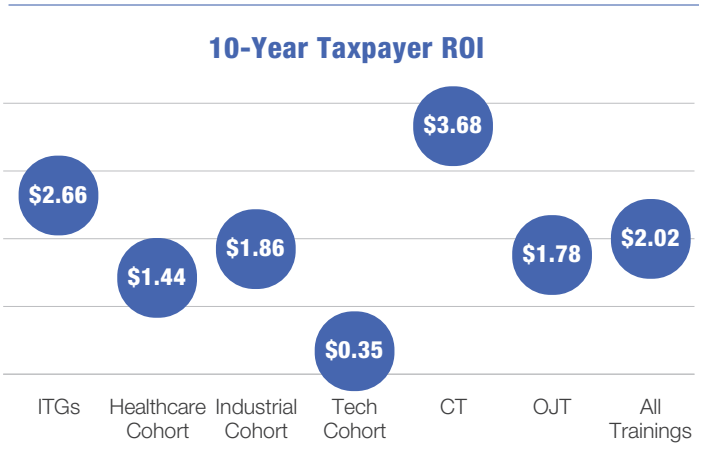
* $p < .05$

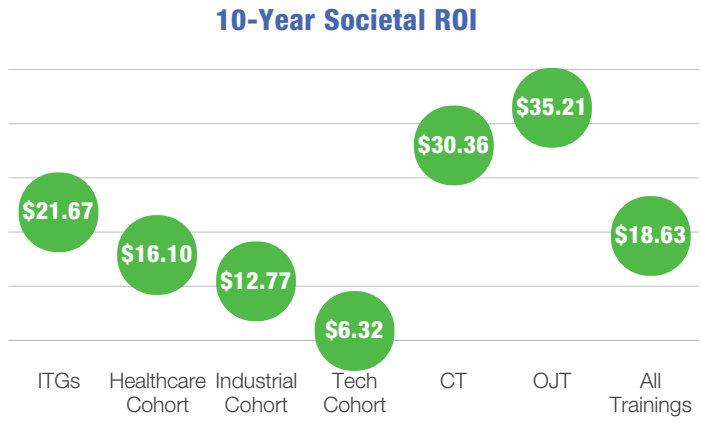
The net impact is the difference in the outcome between the training program participants and the matched comparison group in the 2nd full quarter after exit. The impacts represent the value added of training over and above job search services provided by WF1CCs. For example, the difference of 13.8 for employment for ITGs indicates that ITG participants are 13.8 percentage points more likely to be employed in the 2nd quarter after exit than the matched WF1CC group. All of the training programs had significant positive impacts on earnings, and most had positive impacts on employment. Two of the programs significantly reduced UI benefits. OJT significantly increased UI benefit amounts. This suggests that OJT participants may be more likely to qualify for UI because they have more work experience. None of the programs had a significant impact on SNAP and only one program had a significant impact on CA. Many of the impacts were in the expected direction but not significant, possibly due to the small number of participants in each job training program.

ROI Results

ROI is expressed as a dollar-per-dollar return and gives the return on top of WF1CC job matching services. For example, the taxpayer ROI of $1.45 for ITGs indicates that for each dollar invested in the program, taxpayers received their initial investment back plus an additional $1.45 over and above the return of investing in WF1CC services. From all three perspectives, the job training programs provided a positive 10-year ROI. Participant ROI is highest, ranging from $49.84 for Industrial training to $247.51 for Healthcare Cohort training. Participant ROIs could not be calculated for CT and OJT due to lack of foregone earnings. Participants in these trainings worked while enrolled (this is denoted with an N/A in the figure to the right.) Taxpayers paid most job training costs. Despite paying the costs of these programs, taxpayers also received a positive ROI after 10 years. These returns ranged from $0.35 per for Tech Cohort to $3.68 for CT. Additionally, when taking into account all costs and benefits to society, all of the training programs realized a positive ROI. Societal ROIs range from $6.32 to $35.21.







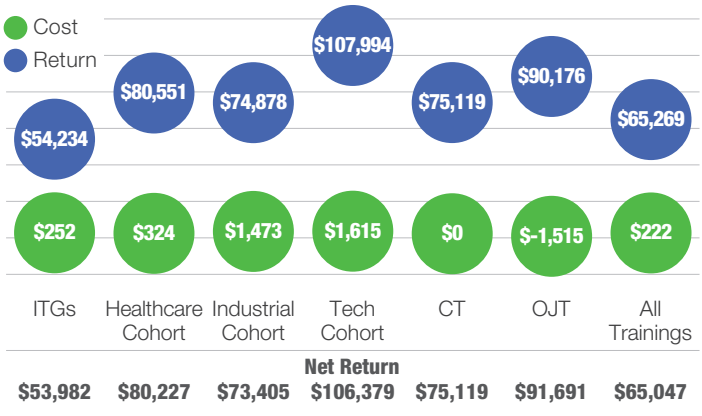
Training Program Cost and Returns

While ROI indicates the return per dollar invested, net returns show the total return after subtracting the initial investment. Participant costs were low reflecting small foregone earnings, as most participants had very low earnings at entry. CT participants did not have foregone earnings because they were incumbent workers and training is paid by employers or a third-party provider while participants are employed. OJT participants actually earned more during the program because they are working, which resulted in a negative cost to the participant.

Limitations

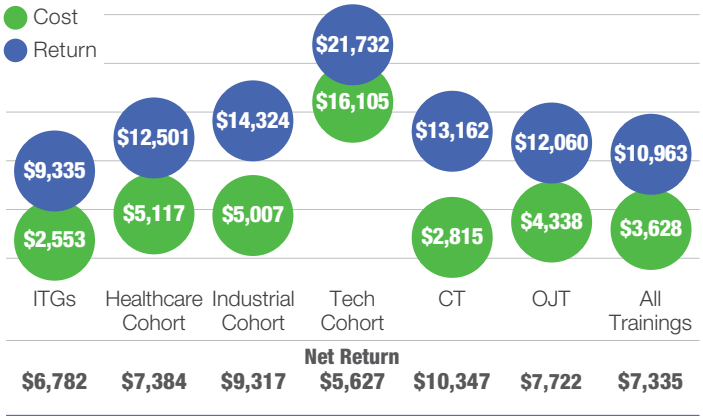
The results of this ROI study should be tempered by the limitations. First, with the exception of ITGs, sample sizes for the training programs were quite small, and it was not possible to determine whether the impacts were statistically significant. Second, the trajectory of impacts after the short observation period was projected. If actual earnings were lower or higher than projected earnings, the ROI estimates would be different. Third, the non-causal nature of the study means that some of the impacts may be overestimated compared to the true impacts. This is because individuals who enroll in training may have certain characteristics (such as greater motivation), which would lead to higher post-training earnings but which could not be accounted for in this study. This may be especially true for Tech participants, who were college students and may be different than the typical WF1CC participant. Finally, while tempting, it is difficult to compare ROI across training programs because the programs are focused on different industries and occupations and serve individuals with different demographic and employment backgrounds.

10-Year Participant Costs and Returns



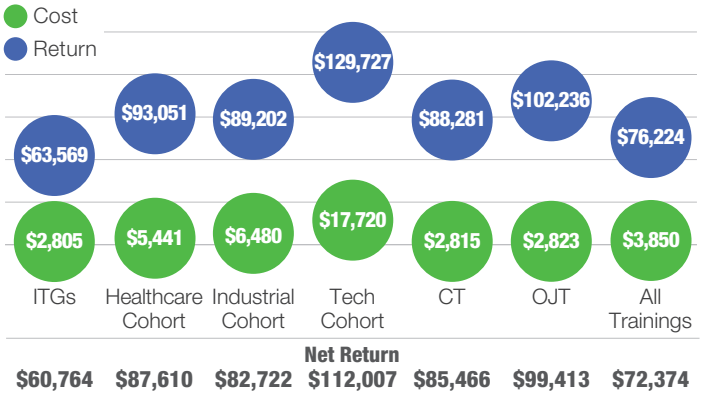
Net Return						
$53,982	$80,227	$73,405	$106,379	$75,119	$91,691	$65,047

10-Year Taxpayer Costs and Returns



Net Return						
$6,782	$7,384	$9,317	$5,627	$10,347	$7,722	$7,335

10-Year Societal Costs and Returns



Net Return						
$60,764	$87,610	$82,722	$112,007	$85,466	$99,413	$72,374

For participants, costs were relatively low. While most participants needed to forego some earnings to participate, the increases in wages far exceeded these costs.

Recommendations

Include ROI alongside program performance metrics. ROI should be used alongside other data, such as job placement, to better gauge the effectiveness of programs.

Conduct additional ROI analysis of industry-focused job training programs. Future research that includes both long-term follow-up data from participants included in this study and data on additional cohorts of participants would provide useful insight. Using a longer follow-up period, one could calculate an ROI based more on observed data and less on assumptions. Including additional cohorts would allow researchers to analyze programs by specific occupations and participant characteristics. This would provide additional insight into which aspects of the program may be driving ROIs and whether ROIs vary by participant characteristics.

References

City of New York. (2014). *Career pathways: one city working together*.

Hollenbeck, K. & Huang, W. (2014). *Net impact and benefit-cost estimates of the workforce development system in Washington. Upjohn Institute Technical Report No. 13-029*. http://dx.doi.org/10.17848/tr13-029.

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Schmitt, J. & Jones, J. (2012). *Low-Wage Workers Are Older and Better Educated Than Ever.* Washington, DC: Center for Economic and Policy Research.

This brief is based on:

Gasper, J., Muz, B., & Boyer, D. (2018). *Return on Investment Analysis of NYC Job Training Programs*. Mayor's Office for Economic Opportunity.

Additional Information

To learn more about the SBS job training programs in this report, visit http://www1.nyc.gov/site/sbs/careers/careers.page.

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