



Evaluation of  
**Employment Coaching for  
TANF and Related Populations**



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Technical Supplement to the  
Evaluation Design Report (Updated)

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OPRE Report Number 2024-099 • April 2024

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Submitted to:

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Administration for Children and Families

U.S. Department of Health and Human Services

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Contract/Task Number: 140D0421F0748

Mathematica Reference Number: 51304

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## Introduction

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This technical report<sup>1</sup> provides additional details on conducting and reporting on the impact analysis of the Evaluation of Employment Coaching for TANF and Related Populations (Employment Coaching evaluation). It supplements the design report for the evaluation (Moore et al. 2019). The design report described the evaluation design, identified data sources to be collected, and provided an overview of the implementation and impact study plans. The design report also provided details on how interventions were selected for the study and described the four participating employment coaching programs: (1) Family Development and Self-Sufficiency Program (FaDSS); (2) Goal4 It!; (3) LIFT; and (4) MyGoals for Employment Success (MyGoals).

This report specifies which outcomes are included in the confirmatory tests of program effectiveness, documents methodological details for estimating impacts, and describes planned secondary and exploratory analyses. These details provide transparency about the evaluation's analytic approach and lay the groundwork for publicly registering the study with Open Science Framework. The report is divided into five main sections in which we describe: (1) the data collection; (2) analysis priority and outcome selection; (3) the approach to estimating impacts in the confirmatory analysis; (4) the approach to secondary analysis; and (5) the approach to the exploratory analysis. An appendix provides results of a psychometric analysis that confirms selection of outcomes in the goal-setting and self-regulation skill domain.

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<sup>1</sup> This report was updated in March 2024 to include the analytic approach that will be used for the third round of data collection and an updated approach to analyze the effects of the 2019 novel coronavirus disease (COVID-19) pandemic on the programs.

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## Summary of Data Collection

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Outcomes of study participants are measured at three follow-up points using surveys and administrative data from the National Directory of New Hires (NDNH) and human services agencies. The first follow-up data collection provides information about short-term impacts of the programs and covers the 9 months after study enrollment for the participants of the FaDSS, Goal4 It!, and LIFT studies, and the 12 months after study enrollment for the participants of the MyGoals study.<sup>2</sup> The second follow-up data collection provides information about the intermediate impacts of the programs and covers 21 months after study enrollment.<sup>3</sup> The third follow-up data collection provides information about the long-term impacts of the programs. The third follow-up survey covers the 12 months prior to 48 to 67 months after study enrollment, depending on the timing of study enrollment relative to the beginning of the survey data collection. Specifically, all third follow-up survey data comes from study participants who have reached their four-year (48 months) anniversary of study enrollment. Some of these study participants had been enrolled in the study for 67 months when the survey data collection began in September 2022. The study participants who had not reached their four-year anniversary of study enrollment in September 2022 are surveyed on a rolling basis when they reach their four-year anniversary of study enrollment.<sup>4</sup>

The first two follow-up survey data collections include participants for the studies of all four programs. The third follow-up survey data collection includes participants of the FaDSS, LIFT, and MyGoals studies but not Goal4 It!.<sup>5</sup> All follow-up data collection of administrative data on earnings and receipt of public assistance includes participants for the studies of all four programs.

The topics included on the three follow-up surveys are largely the same. Questions related to financial outcomes are included on the second and third follow-up surveys. Some questions about the receipt of services were not included on the third follow-up survey because none of the programs were providing services to the study participants at that time.

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<sup>2</sup> Enrollment into the study of MyGoals began as part of an experimental evaluation funded by Arnold Ventures and other funders. After MyGoals was included in the Evaluation of Employment Coaching for TANF and Related Populations, funded by OPRE, the program continued enrolling study participants and coordinated data collection and analysis across the two evaluations. The study of MyGoals has a 12-month first follow-up period to accommodate the earlier enrollment of MyGoals study participants.

<sup>3</sup> For many items on the second follow-up survey, the reference period is tailored based on whether the sample member responded to the first follow-up survey. In these cases, the survey asks those who responded to the first follow-up survey about the time since the date of the first follow-up survey response whereas it asks those who did not respond to the first survey about the time since study enrollment.

<sup>4</sup> Survey data collection is expected to conclude in August 2024.

<sup>5</sup> In assessing whether a site should be included in the third follow-up survey, considerations included: (1) whether impacts would be expected to evolve beyond the time that the second follow-up survey was administered; (2) the duration of the services provided by each program; and (3) whether there is evidence of program effectiveness or emerging effectiveness based on the first follow-up impact analysis. Service receipt for Goal4 It! was lower and for shorter durations than for other programs and there was little evidence of emerging impacts at the time of site selection for the third follow-up survey data collection.

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The reference period for some questions differs between surveys. The first follow-up survey asks about employment and some other experiences since random assignment. The second follow-up survey asks about experiences since the first follow-up survey. The third follow-up survey asks about employment and other experiences in the year prior to the survey. The reference period for the third follow-up survey reflects that the third follow-up survey is administered at least 27 months after the second follow-up survey and addresses potential concerns with recall error for reference periods longer than 12 months.



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## Analysis Priority and Outcome Selection

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Employment coaching programs might affect a broad range of outcomes related to self-regulation, employment, economic stability, and other domains. However, the risk of finding a statistically significant result by chance, rather than one representing a true effect of the program, increases with the number of outcomes tested (Schochet 2009). Therefore, we must balance the need to examine the range of outcomes these programs aimed to affect with the need to minimize multiple comparison concerns.

To minimize the risk of focusing on findings that are statistically significant by chance, we follow two main tenets. First, we restrict the number of outcomes used for determining program effectiveness. The confirmatory tests of program effectiveness are identified through the categorization of analysis, as described below, and are not adjusted for multiple comparisons. In advance of conducting the analyses, we establish a hierarchy of reporting that places findings into one of three categories: (1) those that must be featured in summaries, such as the executive summary, in addition to the main report; (2) those that must be featured in the main report but are only featured in summaries if they add to understanding of impacts on confirmatory outcomes; and (3) those that must be reported in an appendix and are only reported in the main report or summaries if they add to our understanding of impacts on confirmatory outcomes. Second, we conduct multiple comparison adjustments as robustness checks. We use the results that are unadjusted for multiple comparisons for the main analysis, because the statistical adjustments reduce statistical power, or the likelihood of identifying a true effect (Schochet 2009). However, we assess whether the results for confirmatory analysis are robust to multiple comparison adjustment. We qualify findings that are not robust to these adjustments as having weaker evidence of effectiveness.

### CATEGORIZING ANALYSIS PRIORITY

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We use a reporting hierarchy in which analysis is specified ahead of time as confirmatory, secondary, or exploratory (Table 1). The confirmatory analysis is used as the core test of program effectiveness. As such, it is presented prominently in the main report and in summary and bottom-line descriptions of program effectiveness. Secondary analysis includes impacts in domains that are less central to program goals. Secondary findings are presented in the main report; they are also included in summary sections of the report if they contribute to understanding confirmatory findings. All other analysis is exploratory. Because exploratory findings are not part of the main test of program effectiveness, there is flexibility in what outcomes are included in the analysis and how they are specified. We present the exploratory findings in appendix tables. In addition, we include selected exploratory findings in the main report and summary sections of the report if they help us interpret confirmatory findings.

**Table 1.  
Classifying  
confirmatory,  
secondary, and  
exploratory  
analysis**

Type of analysis	Required presentation of findings	Permitted presentation of findings
Confirmatory	Overview, executive summary, and main report	All sections of the report
Secondary	Main report	Overview and executive summary only if helpful in interpreting confirmatory analysis
Exploratory	Appendices	Main report and overview and executive summary sections only if helpful in interpreting confirmatory analysis

The callout box below illustrates how conclusions would be presented in the report.

This approach has several advantages:

- It ensures that readers are informed if the program did not generate statistically significant impacts on confirmatory and secondary outcomes, because those findings are reported regardless of statistical significance.
- It avoids potential criticism that the researchers focused on findings that happened to emerge as statistically significant.
- It allows for flexibility in reporting interesting findings that emerge in the exploratory analysis.
- By presenting all exploratory findings in the appendices, we give readers an honest view of the number of comparisons involved in the exploratory analysis. This is further underscored by describing the construction of all exploratory measures in the technical appendices.
- It provides an organizing principle for other analysis of interest. For example, we can specify that subgroup analysis includes only confirmatory outcomes.

### Sample conclusions discussed in report sections

- Statistically significant impacts on both a confirmatory earnings outcome and an exploratory educational attainment outcome
  - The main report and summaries would discuss the positive impact on earnings and suggest that this impact could be linked to the positive impact on educational attainment, among other factors. Findings on educational attainment would be identified clearly as part of the exploratory analysis.
  - Example text: *The positive impact on earnings could be related to positive impacts on educational attainment. For example, in exploratory analysis, we found program group members were more likely than control group members to earn a GED during the follow-up period.*
- No statistically significant impact on a confirmatory earnings outcome but a statistically significant impact on an exploratory educational attainment outcome
  - The main report and summaries would discuss the fact that the program did not affect earnings. Findings on educational attainment would be included in the main report but with very clear designation of the analysis as exploratory. These exploratory findings on educational attainment would not appear in bottom-line summaries.
  - Example text: *Although the program did not affect earnings, we did find positive impacts on some hard skills. For example, in exploratory analysis we found program group members were more likely than control group members to earn a GED during the follow-up period. This pattern could suggest that the intermediate effects on skill were not large enough to translate into effects on earnings or that the study's follow-up period was not long enough to capture impacts on earnings related to training.*
- No statistically significant impact on a confirmatory earnings outcome or an exploratory educational attainment outcome
  - The main report and summaries would discuss the fact that the program did not affect earnings. Findings on educational attainment would be included in the appendix but not referenced in the main report or summaries.

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## Assessing Robustness of Findings within Domains

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Depending on the number of confirmatory outcomes, the risk of a spurious finding may still be higher than desired. For example, consider a study in which the confirmatory analysis includes 20 outcomes. If the program had no impact on any of the confirmatory outcomes, and all 20 impacts were independent, this would generate a 64 percent chance of finding at least one statistically significant impact by chance. To address this concern, we focus the main test of effectiveness for each domain on a single outcome where possible. As a robustness check on the strength of patterns of statistical significance for domains with multiple outcomes, the team uses conventional statistical adjustments for multiple comparisons for confirmatory outcomes within each domain. These adjustments target an overall significance level within a domain by setting more stringent thresholds ( $p$ -values) at which individual statistical tests are considered significant. The team uses the Benjamini-Hochberg method, which takes into account both the number of comparisons and the strength of impacts to determine the thresholds at which  $p$ -values are considered statistically significant (Benjamini and Hochberg 1995). We present unadjusted findings as our main estimates but note in the text of the main report and summaries when statistically significant impacts are not robust to adjustments to multiple comparisons within domain. This enables readers to make informed interpretations of the findings.

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## Outcomes in the Confirmatory Analysis

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The confirmatory analysis focuses on a small set of outcomes across domains that are central to the programs' goals and are feasible to assess, given the study's sample size and length of follow-up period (Table 2). The confirmatory analysis includes separate estimates of impacts for each program and the secondary analysis also includes impact estimates that pool across the FaDSS, Goal4 It!, LIFT, and MyGoals programs for outcomes included in the confirmatory analysis. In selecting outcomes for the confirmatory analysis, we considered each program's logic model and the outcomes most central to the program's goals. For all programs, the outcome domains for the confirmatory analysis include: (1) self-regulation and goal-related skills, (2) labor market outcomes, and (3) economic well-being. For FaDSS and Goal4 It!, the two programs for which TANF participation is an enrollment criterion, the confirmatory analysis also includes a fourth domain: receipt of public assistance.

We selected confirmatory outcomes for each follow-up period based on the hypothesized timing of program impacts. Because Goal4 It! was not included in the third follow-up survey data collection, only outcomes based on administrative records are available for the third follow-up period for the Goal4 It! study. Impact analysis for these outcomes is included in the exploratory analysis.

**Table 2. Confirmatory outcomes**

Outcome, data source, and program	Measure	Justification for selection and other comments
<b>Self-regulation and goal-related skills</b>		
<p>Goal-setting and attainment skills</p> <ul style="list-style-type: none"> <li>First and second follow-up survey data</li> <li>Third follow-up survey data<sup>a</sup></li> </ul> <p><b>All programs</b> <b>FaDSS, LIFT, and MyGoals</b></p>	<p>This eight-item scale (<math>\alpha=0.86</math>) is the average level of agreement—from “strongly disagree” (=0) to “strongly agree” (=3)—that a respondent reports on items about goal-related skills:</p> <ul style="list-style-type: none"> <li>I know I need to get a job or a better job and really think I should work on finding one.</li> <li>I set employment goals based on what is important to me or my family.</li> <li>I set long-term employment goals that I hope to achieve (such as finding a job, finding a better job, getting promoted, or enrolling in further education).</li> <li>I set specific short-term goals that will allow me to achieve my long-term employment goals.</li> <li>Based on everything I know about myself, I believe I can achieve my employment goals.</li> <li>When I set employment goals, I think about barriers that might get in my way and make specific plans for overcoming those barriers.</li> <li>Even when I face challenges, I continue to pursue my employment goals.</li> <li>I keep track of my overall progress toward my long-term employment goals and adjust my plans if needed.</li> </ul> <p>These are study-developed questions. This measure is available on all three follow-up surveys.</p>	<p>Goal-setting and attainment is the centerpiece both of employment coaching generally and the programs participating in the evaluation specifically. All programs in the evaluation intend to improve goal-setting and attainment as participants receive program services and for these improvements to persist over time. Thus we include this measure in the confirmatory analysis for both the first and second follow-up periods. The psychometric properties of this measure indicate that it is appropriate for the evaluation populations, as described in the appendix.</p> <p>Other aspects of self-regulation skill measured in the survey, such as task management, might be improved through practice of goal setting. These skills are not explicitly targeted by FaDSS or LIFT. One or more such skills might be a focus for some MyGoals and Goal4 It! participants, as needed. However, these programs do not set out to improve any specific skill. Thus, we examine other self-regulation skills as part of the exploratory analysis rather than the main test of program effectiveness in this domain.</p>
<b>Labor market outcomes</b>		
<p>Earnings</p> <ul style="list-style-type: none"> <li>First and second follow-up survey data</li> <li>Third follow-up survey data<sup>a</sup></li> </ul> <p><b>All programs</b> <b>FaDSS, LIFT, and MyGoals</b></p>	<p>Average monthly earnings during the follow-up period. For the first follow-up period, we define the reference period for the measure as:</p> <ul style="list-style-type: none"> <li>The first nine months after study enrollment for FaDSS, Goal4 It!, and LIFT</li> <li>The first twelve months after study enrollment for the MyGoals programs</li> </ul> <p>For the second follow-up period, we define the reference period as:</p> <ul style="list-style-type: none"> <li>Months 10 through 21 after study enrollment for FaDSS, Goal4 It!, and LIFT</li> <li>Months 13 through 21 after study enrollment for the MyGoals programs</li> </ul> <p>For the third follow-up period, we define the reference period as:</p> <ul style="list-style-type: none"> <li>The 12 months before the response to the third follow-up survey, which is administered between Months 48 and 67 after study enrollment</li> </ul>	<p>All programs in the evaluation aim to improve labor market outcomes and all would expect for these improvements to emerge by the time of the first follow-up and persist over time. For this reason, we include both first and second follow-up measures in the confirmatory analysis. We include the third follow-up survey measure in the confirmatory analysis for the three programs included in the third follow-up survey data collection.</p> <p>We selected earnings for the confirmatory analysis of labor market outcomes because it encompasses a wide range of ways the interventions could affect the labor market success of participants. These include increasing their likelihood of working at all, working more regularly (more weeks, months, or quarters), working more hours when they do work (full time instead of part time, for example), and earning higher wages when they do work. All these effects would show up as an increase in total earnings.</p>

Outcome, data source, and program	Measure	Justification for selection and other comments
<p>Earnings</p> <ul style="list-style-type: none"> <li>First, and second, follow-up period administrative data <b>FaDSS, Goal4 It!, and MyGoals</b></li> <li>Third follow-up period administrative data <b>FaDSS and MyGoals</b></li> </ul>	<p>Average monthly earnings during the follow-up period. For the first follow-up period, we define the reference period for the measure as:</p> <ul style="list-style-type: none"> <li>The first three quarters after study enrollment for FaDSS and Goal4 It!</li> <li>The first four quarters after study enrollment for the MyGoals programs</li> </ul> <p>For the second follow-up period, we define the reference period as:</p> <ul style="list-style-type: none"> <li>Quarters 4 through 7 after study enrollment for FaDSS and Goal4 It!</li> <li>Quarters 5 through 7 after study enrollment for the MyGoals programs</li> </ul> <p>For the third follow-up period, we define the reference period as:</p> <ul style="list-style-type: none"> <li>Quarters 13 through 16 after study enrollment for FaDSS and MyGoals</li> </ul>	<p>We examine earnings using both administrative records data (NDNH data) and survey data because these data sources have both strengths and limitations. Unlike survey data, NDNH data have no recall error, and are available for a longer reference period than the follow-up survey. In contrast, the main advantage of survey data is that it will pick up additional kinds of employment that are not covered by administrative data. Survey data cover self-employment (such as Uber driving and other gig economy employment) and under-the-table or informal employment that can be common among low-wage workers and that are often not covered by unemployment insurance benefits and thus not included in the NDNH.</p> <p>By examining earnings from both data sources, we reduce the risk of missing the effect programs may have had on earnings either in formal or informal jobs. The proposed approach—focusing on earnings and using data from both administrative and survey data—has been widely used in prior studies of the impacts of employment and training programs on low-income individuals. Earlier studies that have used this approach include PACT, Parents' Fair Share, Job Corps, WIA Gold Standard Evaluation, and CSPED (see Barnow and Smith 2015 for a comprehensive review of many of these earlier studies).</p> <p>We do not include earnings based on administrative records for LIFT participants in the confirmatory analysis because only about half of the LIFT sample provided a valid Social Security number at the time of study enrollment. As a result, this analysis is at risk of attrition bias and is included in the exploratory analysis. All analysis of impacts of Goal4 It! for the third follow-up period is included in the exploratory analysis.</p>
<b>Receipt of public assistance</b>		
<p>TANF benefit receipt</p> <ul style="list-style-type: none"> <li>Second follow-up period administrative data <b>FaDSS and Goal4 It! programs</b></li> <li>Third follow-up period administrative data <b>FaDSS</b></li> </ul>	<p>Average monthly TANF benefit amount during the second and third follow-up period. We define the reference period for the second follow-up period as months 10 through 21 after study enrollment and we define the reference period for the third follow-up period as months 37 through 48 after study enrollment.</p>	<p>The FaDSS and Goal4 It! programs both include TANF benefit receipt among their enrollment criteria. Reducing participation in TANF is a goal of these programs. Because impacts on TANF benefit receipt should emerge after impacts on earnings, TANF benefit receipt for the first follow-up period is included in the exploratory analysis. TANF benefit receipt for the second follow-up period is included in the confirmatory analysis. TANF benefit receipt for the third follow-up period is included in the confirmatory analysis for FaDSS. All analysis of impacts of Goal4 It! for the third follow-up period is included in the exploratory analysis.</p>

Outcome, data source, and program	Measure	Justification for selection and other comments
<b>Economic well-being</b>		
Economic hardship <ul style="list-style-type: none"> <li>First and second follow-up survey data</li> <li>Third follow-up survey data<sup>a</sup></li> </ul> <b>All programs</b> <b>FaDSS, LIFT, and MyGoals</b>	A count ranging from 0 to 6 of the number of the following coping strategies used to stretch budgets: <ul style="list-style-type: none"> <li>Cut the size of meals or skip meals because couldn't afford enough food;</li> <li>Moved in with other people because of financial problems;</li> <li>Asked to borrow money from friends or family;</li> <li>Went without a phone because could not afford to pay the bill;</li> <li>Sold belongings or took a payday loan;</li> <li>Went without medical care because of cost</li> </ul>	All programs in the evaluation intend to improve the material well-being of their participants. This economic hardship scale reflects the extent to which scarce economic resources affected key aspects of material well-being, such as food, housing, and medical care.
<p>Note: The first follow-up data collection occurs 9 months after study enrollment for FaDSS, Goal4 It!, and LIFT; it occurs 12 months after study enrollment for MyGoals. The second follow-up data collection occurs 21 months after study enrollment for all programs. The third follow-up data collection occurs between 48 and 67 months after study enrollment, depending on the time of study enrollment.</p> <p><sup>a</sup> The third follow-up survey data collection did not include Goal4 It!. Thus no survey-based outcomes are available for Goal4 It!. All analysis of impacts of Goal4 It! on outcomes based on administrative records are included in the exploratory analysis.</p> <p>CSPED=National Child Support Noncustodial Parent Employment Demonstration; FaDSS=Family Development and Self-Sufficiency; PACT=Parents and Children Together; WIA=Workforce Investment Act; NDNH=National Directory of New Hires.</p>		

## OUTCOMES IN THE SECONDARY ANALYSIS

In secondary analysis, we examine impacts on outcomes in domains likely to be of interest to readers but that were less central to program goals and thus not part of the central test of program effectiveness. This category does not include domains in the confirmatory analysis. For the secondary analysis, we propose outcomes in four domains (Table 3). We propose including these outcomes in the secondary analysis for all programs.



**Table 3. Secondary outcomes**

Outcome, data source, and program	Measure	Justification for selection and other comments
<b>Hard skill acquisition</b>		
Completion of an education program <ul style="list-style-type: none"> <li>First and second follow-up survey data</li> </ul> <b>All programs</b> <ul style="list-style-type: none"> <li>Third follow-up survey data</li> </ul> <b>FaDSS, LIFT, and MyGoals</b>	This is a binary variable that equals 1 if respondents reported completing an education program and 0 otherwise. This outcome is available at all three follow-up surveys.	Program impacts on education could lead to impacts on earnings and other outcomes.
Completion of a training program <ul style="list-style-type: none"> <li>First and second follow-up survey data</li> </ul> <b>All programs</b> <ul style="list-style-type: none"> <li>Third follow-up survey data</li> </ul> <b>FaDSS, LIFT, and MyGoals</b>	This is a binary variable that equals 1 if respondents reported completing a training program and 0 otherwise. This outcome is available at all three follow-up surveys.	Program impacts on training could lead to impacts on earnings and other outcomes.
<b>Job quality</b>		
Employment in jobs offering fringe benefits <ul style="list-style-type: none"> <li>First and second follow-up survey data</li> </ul> <b>All programs</b> <ul style="list-style-type: none"> <li>Third follow-up survey data</li> </ul> <b>FaDSS, LIFT, and MyGoals</b>	Whether employed in a job offering fringe benefits at the end of the follow-up. The reference period for these outcomes aligns with the earnings measures in Table 2.	Understanding impacts on job quality is key to understanding impacts on earnings. Moreover, improved job quality could improve other aspects of economic stability and well-being. Receipt of fringe benefits is an important measure of the quality of a job.
<b>Employment challenges</b>		
Specific challenges that impeded employment <ul style="list-style-type: none"> <li>First and, second follow-up survey data</li> </ul> <b>All programs</b> <ul style="list-style-type: none"> <li>Third follow-up survey data</li> </ul> <b>FaDSS, LIFT, and MyGoals</b>	Seven separate outcomes corresponding to a particular challenge: The first is whether (yes or no) the survey respondent reported having a current driver's license at the time of the follow-up survey. The other six outcomes are binary variables indicating whether respondents reported that having the challenge made it very hard or extremely hard for them to find and keep a good job at the time of the follow-up survey: <ul style="list-style-type: none"> <li>Child care</li> <li>Transportation</li> <li>Right clothes or tools</li> <li>Right skills or education</li> <li>Criminal record</li> <li>Limiting health reason</li> </ul>	Program services and potential impacts on self-regulation skills could influence participants' ability to address employment challenges. Such effects could be important for understanding impacts on earnings and receipt of public assistance.
<b>Housing stability</b>		
Unstable housing <ul style="list-style-type: none"> <li>First and, second follow-up survey data</li> </ul> <b>All programs</b> <ul style="list-style-type: none"> <li>Third follow-up survey data</li> </ul> <b>FaDSS, LIFT, and MyGoals</b>	A binary variable indicating whether homeless, living in a shelter, or living rent-free at the time of the follow-up surveys.	Increasing housing stability is often a common goal for participants in some of the programs participating in the evaluation. Housing stability could also be influenced by potential impacts on labor market outcomes.

Note: The first follow-up data collection occurs 9 months after study enrollment for FaDSS, Goal4 It!, and LIFT; it occurs 12 months after study enrollment for MyGoals. The second follow-up data collection occurs 21 months after study enrollment for all programs. The third follow-up data collection occurs between 48 and 67 months after study enrollment, depending on the time of study enrollment. The third follow-up survey collects information about the 12 months before the date of the survey.

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## **OUTCOMES IN THE EXPLORATORY ANALYSIS**

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In the exploratory analysis, we examine a broader set of outcomes, which are not considered key indicators of program effectiveness but could be used to broaden our understanding of overall program effects. The main function of this analysis is to further investigate the confirmatory findings and identify how they emerged.

We provide a list of outcomes to be included in the exploratory analysis below (Table 4). These include supplementary outcomes in the domains with confirmatory outcomes, as well as outcomes from the following domains: (1) education and training receipt; (2) job search; (3) labor market participation; (3) criminal activity; and (4) marital status. In addition, the exploratory analysis includes impact estimates on service receipt outcomes drawn from survey reports collected from both program and control group members. These findings inform interpretation of other findings because impacts on these outcomes would provide information about the contrast between the services received by the program and control groups. We examine these outcomes for all programs except for outcomes that are in the confirmatory analysis for some programs or not available for some programs, as noted in the table. The list of exploratory outcomes is likely to expand as we further investigate patterns in the confirmatory analysis.

**Table 4. Exploratory outcomes to be examined for all programs for the first and second follow-up survey and for FaDSS, LIFT, and MyGoals for the third follow-up survey unless otherwise noted**

Outcome	Data source
<b>Service receipt</b>	
Received one-on-one job assistance during the follow-up periods	All three follow-up surveys
Number of times received and total time spent in one-on-one employment services (average and frequency) during the first and second follow-up periods	First and second follow-up surveys
Received group employment services during the follow-up periods	All three follow-up surveys
Number of times received group employment services (average and frequency) during the first and second follow-up periods	First and second follow-up surveys
Received job assistance focused on setting long-term goals during the first and second follow-up periods	First and second follow-up surveys
Received job assistance focused on setting short-term goals during the first and second follow-up periods	First and second follow-up surveys
Received job assistance focused on planning to achieve your goal during the first and second follow-up periods	First and second follow-up surveys
Received a career assessment during the follow-up periods	All three follow-up surveys
Received job leads from a program during the follow-up periods	All three follow-up surveys
Received child care services during the first and second follow-up periods	First and second follow-up surveys
Received transportation assistance during the first and second follow-up periods	First and second follow-up surveys
Received clothes, uniforms, tools or other supplies and equipment during the first and second follow-up periods	First and second follow-up surveys
Received tuition assistance during the first and second follow-up periods	First and second follow-up surveys
Received assistance finding stable housing during the first and second follow-up periods	First and second follow-up surveys
Received assistance with budgeting, credit, banking, or other financial matters during the first and second follow-up periods	First and second follow-up surveys
Received assistance expunging a criminal record or other legal assistance during the first and second follow-up periods	First and second follow-up surveys
Received help related to domestic violence during the first and second follow-up periods	First and second follow-up surveys
Received help with marital and other family relationships during the first and second follow-up periods	First and second follow-up surveys
Received help with child behavioral issues during the first and second follow-up periods	First and second follow-up surveys
Received cash or a gift card during the first and second follow-up periods	First and second follow-up surveys
Received substance use counseling during the first and second follow-up periods	First and second follow-up surveys
Received mental health treatment during the first and second follow-up periods	First and second follow-up surveys
<b>Goal setting and self-regulation skills</b>	
Task monitoring, planning, and initiation at the time of the follow-up surveys	All three follow-up surveys
Emotional control and self-monitoring at the time of the follow-up surveys	All three follow-up surveys
Employment self-regulation at the time of the follow-up surveys	All three follow-up surveys

Outcome	Data source
Self-esteem at the time of the follow-up surveys	All three follow-up surveys
Set an employment goal at the time of the follow-up surveys	All three follow-up surveys
<b>Education and training receipt</b>	
Participation in an education program during the follow-up periods	All three follow-up surveys
Participation in a training program during the follow-up periods	All three follow-up surveys
Receipt of a diploma or degree from an education program during the follow-up period	All three follow-up surveys
Receipt of a certificate, license, or diploma from a training program during the follow-up period	All three follow-up surveys
Highest level of education at time of the follow-up surveys	All three follow-up surveys
<b>Job search</b>	
Number of job search activities conducted since random assignment (updated resume, explored requirements for a job, found child care, looked into training, looked into transportation) during the first and second follow-up periods	First and second follow-up surveys
Number of job offers received when working; number of job offers received when not working during the first and second follow-up periods	First and second follow-up surveys
Intensity of job search (frequency of activities) when working; intensity of job offers received when not working during the first and second follow-up periods	First and second follow-up surveys
<b>Employment and earnings</b>	
Earnings by quarter after study enrollment <i>LIFT only, confirmatory outcome for other programs</i>	NDNH data for all three follow-up periods
Average monthly earnings during the follow-up period <i>Goal4 It! only, confirmatory outcome for FaDSS and MyGoals</i>	NDNH data for the third follow-up period
Whether employed by month after study enrollment	All three follow-up surveys
Number of months employed	All three follow-up surveys
Number of months employed in multiple jobs	All three follow-up surveys
Earnings by month after study enrollment	All three follow-up surveys
Whether employed by quarter after study enrollment (all programs)	NDNH data for all three follow-up periods
Number of quarters employed (all programs)	NDNH data for all three follow-up periods
Earnings by quarter after study enrollment (all programs)	NDNH data for all three follow-up periods
Whether a new hire during the follow-up periods (all programs)	NDNH data for all three follow-up periods
Hours worked per week during the follow-up periods	All three follow-up surveys
Number of months employed in job with wage rate over 25th percentile in the US (about \$14) during the follow-up periods	All three follow-up surveys
Number of jobs with each of the following benefits: health insurance, paid leave, retirement benefits during the follow-up periods	All three follow-up surveys
Number of months employed in a (full- or part-time) wage and salary job (excluding seasonal, contract, on-call, and odd-jobs) during the follow-up periods	All three follow-up surveys
Number of months employed in a full-time job during the follow-up periods	All three follow-up surveys

Outcome	Data source
Number of months self-employed during the follow-up periods	All three follow-up surveys
Whether employed in a job with high perceived likelihood of promotion in next 12 months at the time of the follow-up surveys	All three follow-up surveys
Whether satisfied with job held at the time of the follow-up surveys	All three follow-up surveys
<b>Labor market participation</b>	
Whether in labor market at time of the follow-up surveys (employed or looking for a job)	All three follow-up surveys
Whether actively engaged at the time of the follow-up surveys (employed, looking for a job, in school or training, or caring for a family member)	All three follow-up surveys
<b>Receipt of public assistance or social insurance benefits</b>	
Receipt of any income from public assistance/social insurance programs (TANF, SNAP, UI, SSI, SSDI, WIC, or housing assistance) during the follow-up periods	All three follow-up surveys
Amount of TANF benefits received; by month after study enrollment	Administrative records data for all three follow-up periods
Total amount of TANF benefits (all programs)	Administrative records data for the first period
Total amount of TANF benefits <b>LIFT and MyGoals; this is a confirmatory outcome for FaDSS and Goal4 It!</b>	Administrative records data for the second period
Total amount of TANF benefits <b>LIFT, Goal4 It!, and MyGoals; this is a confirmatory outcome for FaDSS</b>	Administrative records data for the third follow-up period
Total amount of SNAP benefits received; by month after study enrollment <b>FaDSS, LIFT, and MyGoals</b>	Administrative records data for all three follow-up periods
Total amount of unemployment insurance benefits received during the follow-up periods (all programs)	NDNH data for all three follow-up periods
Whether received housing assistance <b>MyGoals only</b>	Public housing authority administrative data for all three follow-up periods
<b>Financial outcomes</b>	
Whether has a checking or savings account at the time of the second and third follow-up surveys	Second and third follow-up surveys
Whether has a positive savings balance at the time of the second and third follow-up surveys	Second and third follow-up surveys
Whether uses a budget to track expenses at the time of the second and third follow-up surveys	Second and third follow-up surveys
<b>Criminal activity</b>	
Whether convicted of a any crime since study enrollment during the follow-up periods	All three follow-up surveys
Whether convicted of a felony since study enrollment during the follow-up periods	All three follow-up surveys
<b>Marital status</b>	
Whether married at time of the follow-up surveys	All three follow-up surveys

Note: The first follow-up data collection occurs 9 months after study enrollment for FaDSS, Goal4 It!, and LIFT; it occurs 12 months after study enrollment for MyGoals. The second follow-up data collection occurs 21 months after study enrollment for all programs. The third follow-up data collection occurs between 48 and 67 months after study enrollment, depending on the time of study enrollment. The third follow-up survey collects information about the 12 months before the date of the survey.

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## Main Approach to Estimating Impacts

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The main impact estimates for all outcomes are based on the evaluation's experimental design. Participants eligible for the coaching services have been randomly assigned to one of two groups: (1) a program group offered coaching services or (2) a control group not offered coaching services. With this design, the research groups should be very similar in terms of their characteristics before receiving the intervention. Our basic analytic approach is to compare the outcomes of members of the program and control groups. Because of random assignment, differences in observed outcomes between the program and control groups large enough that they are unlikely to be due to chance can be attributed to the offered employment coaching.

The confirmatory analysis includes separate estimates of impacts for each program. For FaDSS, LIFT and MyGoals—programs that have more than one geographic location participating in the evaluation—the confirmatory analysis pools estimates across the locations because they are implementing the same approach to employment coaching. MyGoals is the only evaluation site with multiple locations with large enough sample sizes to conduct separate analyses for each program location. Therefore, the secondary analysis includes separate estimates for each MyGoals location (Baltimore and Houston), but not for each LIFT or FaDSS location. As discussed further below, the secondary analysis also includes impact estimates that pool across all four programs for outcomes included in the confirmatory analysis in order to examine the average effect of coaching programs included in the Employment Coaching evaluation. Impact estimates from this analysis are more precise than the program-specific estimates because of the larger sample size.

### MULTIVARIATE ESTIMATION AND COVARIATES

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We estimate the impact of the employment coaching program on each outcome using a multivariate weighted-least-squares regression model. There are two reasons to estimating a regression model rather than just using the difference in the average value of the outcome between the program and control groups. First, it enables us to adjust for any differences in baseline characteristics between the program and control groups that emerge by chance, despite the random assignment design. Second, including covariates in the model that are correlated with the outcome measure improves the statistical precision of the impact estimates (Orr 1999). These two reasons motivate how we select covariates to include in the model, as described below.

The baseline data available differs by study program because of differences in the study intake process. The baseline information available for MyGoals study participants is less comprehensive than for other study participants. Three programs—FaDSS, LIFT, and Goal4 It!—administered a baseline survey developed by the Employment Coaching study team. The two MyGoals programs administered a different baseline instrument at the time of study intake and collected some other baseline data from

administrative records from the public housing authorities implementing MyGoals.<sup>6</sup> The MyGoals baseline information includes demographics and earnings prior to study enrollment, but it does not include information on baseline employment challenges or goal-setting and self-regulation skills like the baseline survey administered to the other three programs does.

We have access to baseline administrative earnings records through the National Directory of New Hires (NDNH) data. However, this data cannot be exported from the NDNH data system. Therefore, we only use baseline administrative earnings records as a covariate in impact analysis of outcomes based on NDNH earnings records.

We select a set of covariates based on likely correlation with program outcomes because highly correlated covariates increase the precision of the impact estimates. We include baseline versions of all confirmatory outcomes that are available because baseline and follow-up versions of the same measure are likely to be highly correlated (Table 5). We use the same set of baseline variables for all outcomes. This enables us to control for a set of relevant characteristics and simplifies programming the impact estimation.

**Table 5. Availability of baseline versions of confirmatory outcomes**

Outcome	Availability for FaDSS, Goal4 It!, and LIFT	Availability for MyGoals programs
<b>Self-regulation and goal-related skills</b>		
Goal-setting and attainment	Three of the eight items <sup>a</sup>	No
<b>Labor market outcomes</b>		
Earnings, survey data	Earnings in 30 days before enrollment	Administrative records on earnings at enrollment
Earnings, administrative data	Available only for analysis of outcomes based on NDNH data	Available only for analysis of outcomes based on NDNH data
<b>Receipt of public assistance</b>		
Average monthly TANF benefit, administrative data	Available for FaDSS and Goal4 It!	Yes
<b>Economic well-being</b>		
Economic hardship	No	No

Note: NDNH= National Directory of New Hires.

<sup>6</sup> Study intake for the MyGoals programs began before the baseline data collection instruments used for the other programs were developed and approved.

The first follow-up data collection occurs 9 months after study enrollment for FaDSS, Goal4 It!, and LIFT; it occurs 12 months after study enrollment for MyGoals. The second follow-up data collection occurs 21 months after study enrollment for all programs. The third follow-up data collection occurs between 48 and 67 months after study enrollment, depending on the time of study enrollment.

<sup>a</sup> See Appendix Table 1 for specific items.

In addition, for each program, we include a set of covariates to control for other baseline characteristics with statistically significant differences between the program and control groups. For FaDSS, Goal4 It!, and LIFT, we tested for average differences between program and control group members in a wide range of baseline characteristics including: age, sex, race and ethnicity, marital status, number of adults with whom the respondent lives, number of children with whom the respondent lives, whether the study participant has a high school or General Education Development (GED) diploma, and challenges to employment faced by the study participant. For MyGoals, this list included age, sex, race and ethnicity, and whether the study participant has a high school or GED diploma. As expected, given the random assignment research design, there are few significant differences in baseline characteristics between the programs and control groups (Table 6). We include those characteristics for which there are significant differences as covariates in regressions for all outcomes for that program. Because the characteristics with statistically significant differences are not the same for all programs, the set of characteristics included in the model are not the same for all programs.

The covariates also include a set of indicator variables related to timing of study enrollment. These covariates control for common timing effects experienced by enrollment cohorts, such as those related to labor market conditions or other factors. We construct the indicators to group all sample members whose follow-up period ends March 2020 or later. These follow-up periods include the COVID-19 pandemic; other analysis related to the pandemic are discussed in the secondary analysis section below. The indicators are different for the MyGoals programs because the enrollment period was substantially longer than for other programs and the first follow-up period differs. For MyGoals, these indicators include whether enrollment was: (1) February 2017 through February 2018; (2) between March 2018 and February 2019; or (3) March 2019 or later. For FaDSS, Goal4 It! and LIFT, these indicators include whether enrollment was: (1) June 2018 through May 2019; or (2) June 2019 or later.

**Table 6.**  
**Baseline**  
**characteristics**  
**with statistically**  
**significant**  
**differences**  
**between program**  
**and control group**  
**means, by program**

Program	Baseline characteristics to be included as covariates
FaDSS	None
Goal4 It!	None
LIFT	<ul style="list-style-type: none"> <li>• Whether married at study enrollment</li> <li>• Reported criminal history as a challenge for finding and keeping a good job</li> </ul>
MyGoals	<ul style="list-style-type: none"> <li>• Baltimore: None</li> <li>• Houston: Age</li> </ul>

Note: All baseline characteristics with statistically significant differences between the program and control groups for a given program are included as covariates in the regression models used to estimate that program's impacts. For FaDSS, Goal4 It! and LIFT, we tested for averages differences between program and control group members in a wide range of baseline characteristics including: age, sex, race and ethnicity, marital status, number of adults with whom the respondent lives, number of children with whom the respondent lives, whether has a high school or GED diploma, and a set of challenges to employment. For MyGoals, this list included age, sex, race and ethnicity, and whether has a high school diploma or GED.



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## STATISTICAL SIGNIFICANCE

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For all outcomes (confirmatory, secondary, and exploratory), we use standard, frequentist methods to estimate the effects of coaching and report statistical significance based on  $p$ -values. This approach allows us to determine *whether* the employment coaching program has an effect on an outcome and quantify the magnitude of any effects. We regard these standard estimates as our main ones, reflecting the bottom-line estimate of program effects on a given outcome. In addition, for confirmatory outcomes, we propose to conduct Bayesian analyses that provides a complementary interpretation about the *probability* that the employment coaching program has particular effects. This approach is described in a later section.

For our main impact estimates, we deem impact estimates to be statistically significant if the associated  $p$ -value of the estimate falls below 5 percent based on a two-tailed hypothesis test (Table 7). We also note if the associated  $p$ -value falls between 5 and 10 percent, classifying these impacts as statistically significant at the 0.10 level.

To help interpret the magnitude of the impact estimates, we calculate an effect size for each outcome. We report effect sizes in the main report for outcomes measured as scales because the magnitude of impacts on these outcomes is not easily interpretable. We report effect sizes for all outcomes in the appendices. For continuous outcomes, we calculate the effect size as Hedges'  $g$ , which equals the impact estimate from the regression model divided by the unadjusted pooled standard deviation of the outcome for respondents across both the program and control groups (Hedges 1981). For binary outcomes, we calculate the effect size as the Cox index, which equals the log odds ratio divided by the constant 1.65 (Cox 1970).

**Table 7.  
Conventions  
for describing  
statistical  
significance**

$p$ -value of impact estimate	Symbol used to denote $p$ -value	Description of impact estimate
$p < 0.01$	***	Statistically significant
$0.01 \leq p < 0.05$	**	Statistically significant
$0.05 \leq p < 0.10$	*	Statistically significant at the 0.10 level
$p \geq 0.10$	None	Not statistically significant

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## TREATMENT OF MISSING DATA

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We conduct the analysis to account for the possibility that missing data could introduce bias in the impact estimates and reduce statistical power to detect program impacts. Although all study participants must complete the baseline data collection as part of the study enrollment process, some baseline data could be missing if study participants do not respond to certain items. Follow-up survey data could be missing because study participants do not respond to follow-up surveys or because survey respondents do not answer some survey questions. Data from the NDNH could be missing when study participants are not matched to the administrative records because of missing or inaccurate Social Security numbers. In addition to these strategies, we compare the baseline characteristics of those who are missing a given type of data and those who are not to assess selection into missing data status.

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## **Treatment of missing baseline data**

When one or more covariates have missing data, we use indicator variable adjustment, which involves setting any missing baseline values to a single constant value and including flag variables for missing values as additional covariates in the regression model. This approach is appropriate when the covariates are not correlated with research group, as is the case in evaluations with a random assignment design (Deke and Puma 2013; Puma et al. 2009).

## **Treatment of missing outcome data**

### *Survey nonresponse*

We estimate all regressions using weights to account for sample members who did not complete the follow-up survey or could not be matched to the administrative data because of missing or inaccurate Social Security numbers. The nonresponse weights adjust the data to be representative of all sample members, not just those who completed the survey or could be matched to an administrative record. We calculate the weights by estimating, for each program separately, the probability of nonresponse for study participants as a function of their baseline characteristics using regression analysis. We adjust the standard errors of the impact estimates to account for the variability associated with these weights.

### *Item nonresponse*

We use imputation to address item nonresponse that affects a subset of items used to create survey outcomes. Some examples include:

- If a sample member responded to at least two-thirds of the items on a scale, we use the average scale score for that person based on the available items.
- We impute minor missing items from the job grid with midpoint values when constructing earnings measures. For example, if the day of the month that a job ended is missing, we fill in a value of 15.
- For more substantive missing items, such as length of time in the job, we impute based on job characteristics and other relevant follow-up and baseline data using hot-decking procedures.

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## Approach to Secondary Analysis

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In addition to estimating impacts on secondary outcomes, the secondary analyses also include: (1) Bayesian analysis; (2) pooling data across programs and estimating impacts for all the programs together; and (3) examining the effects of the 2019 novel coronavirus disease (COVID-19) pandemic.

### BAYESIAN ANALYSIS

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To help readers interpret the findings, we complement our main reporting of statistical significance (the frequentist analysis) with a Bayesian analysis. The Bayesian analysis provides a probability that the true effect of the program is positive or greater than a specified amount—nuanced information which is helpful to practitioners and policymakers rather than just a conclusion that the program is probably effective or not. The Bayesian analysis also guards against the frequent misunderstanding about the meaning of statistical significance that can lead to serious misinterpretation of study findings. Many people misinterpret statistical significance ( $p$ -value  $< 0.05$ ) to mean that there is at most a 5 percent chance that the program had no effect rather than the correct conclusion that when the true effect is zero, there is a 5 percent chance that the impact estimate is statistically significant. A statistically significant impact does not necessarily imply a high probability that the program had an effect. Similarly, a lack of statistical significance does not necessarily mean that there is a low probability a program had an effect. The consequences of misinterpreting  $p$ -values can be so severe that several researchers have urged the field to abandon the use of  $p$ -values and statistical significance (Cooper et al. 2009; Gelman et al. 2013).

### Overview of the BASIE approach

We present findings from a Bayesian approach known as BASIE (BAyesian Interpretation of Estimates) (Deke and Finucane 2019).<sup>7</sup> We apply this approach to estimate the *probability* that coaching had an effect of more than a specific amount on key study outcomes, rather than an indication of *whether* coaching had an effect at all. This approach applies Bayesian methods, drawing on both the effect directly estimated from the study's data and prior evidence about how common it is for programs to have effects.

The BASIE approach directly estimates the probability that the true effect of a program is a certain size. For example, we could draw conclusions about the likelihood that the impact is positive, such as “There is a 75 percent chance that the program had a positive effect on average monthly earnings.” In addition, we could draw conclusions about the probability that the program had a large effect that readers are likely to regard as meaningful, such as: “There is a 50 percent chance that the program boosted average monthly earnings by \$250 or more.”

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<sup>7</sup> The components of BASIE draws on guidance from many sources (Gigerenzer and Hoffrage 1995; Gelman and Weakliem 2009; Gelman 2001, 2012, 2015a, 2015b, 2016; Gelman and Shalizi 2013).

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**How the BASIE approach compares to other Bayesian methods.** The BASIE approach differs from how researchers often apply Bayesian methods in two key ways. First, a common concern with Bayesian methods is that they can be subjective. Instead of drawing on prior evidence, they sometimes rely on prior beliefs about the effects of a program (Cooper et al. 2009). The BASIE framework avoids this concern by drawing only on prior evidence from similar evaluations, rather than on the researcher's beliefs about the programs' effects. Second, under the standard Bayesian approach, researchers often only report the Bayesian shrunken estimate (which is a weighted average of the traditional effect estimate and prior evidence). In contrast, the BASIE approach encourages researchers to report both the main impact estimate (based only on study data) and the Bayesian shrunken estimate (Cooper et al. 2009; Gelman et al. 2013).

**Information required to implement BASIE.** The BASIE approach requires information that comes from our main analysis and additional information from other sources. In particular, the approach requires (1) the effect estimate and standard error that we estimate in our main analyses, and (2) prior information on how common it is for generally similar programs to have effects. The additional prior information allows us to quantify how common it is to achieve effects of different sizes, such as how common it is to achieve positive effects or effects greater than a particular size.

### **Guidelines to selecting prior information**

BASIE applies five guidelines for selecting and analyzing prior information: (1) use evidence from past evaluations, as opposed to beliefs about the effectiveness of programs that are not based in evidence; (2) select prior evidence that meets systematic standards for quality, such as studies reviewed by evidence clearinghouses; (3) statistically adjust evidence for variation in precision and possible biases that arise from how effects are reported; (4) select evidence that is similar to the programs and populations in the evaluation; and (5) examine and report sensitivity of findings to the selection of prior evidence.

There is not a general guideline for the number of past evaluations to assess. We aim for at least 30 studies for this analysis. It is not necessary that the evidence we draw on for this work is from evaluations of coaching programs so long as we are able to clearly articulate what the evidence represents. For example, the evidence could represent programs intended to help low-income people improve their employment outcomes.

### **Source of prior information**

We base the priors on OPRE's Pathways to Work Evidence Clearinghouse (Pathways). Pathways aligns closely with the Employment Coaching evaluation because it focuses on studies of employment and training interventions for populations with low incomes. As described in more detail below, Pathways has enough studies that we can use to form prior information. In addition to Pathways, we also considered OPRE's Employment Strategies for Low-Income Adults Evidence Review (ESER) and the Department of Labor's Clearinghouse for Labor Evaluation and Research (CLEAR). We focus on Pathways, rather than ESER or CLEAR, for two main reasons:

1. **Pathways includes and builds on the research covered by ESER.** Therefore, we would not need to use ESER as a separate source of information.
2. **Unlike Pathways, CLEAR does not focus exclusively on populations with low incomes or employment and training programs, so many of the studies from CLEAR would be less aligned with the Employment Coaching evaluation.** In addition, many of the studies from CLEAR that do focus on employment programs for populations with low incomes also overlap with Pathways. Therefore, including CLEAR would offer little added benefit.

### Selecting priors from Pathways

In advance of conducting the analyses, we identify (1) a set of prior information that we use for the Bayesian analysis to be presented in the body of the report and (2) other sets of prior information that we use for sensitivity analyses to be presented in the appendix. We identify the prior information using parameters in the Pathways database, including the quality of the study, the populations served by the intervention, and the intervention services. Table 8 details how we use these parameters to define the priors for the main analysis and the sensitivity analyses. We base the priors for the main analysis on studies that are rated as high quality. However, we do not limit them further based on whether the intervention serves particular populations or provides particular services, because all studies in Pathways focus on employment and training programs for low-income populations so we view them as relevant prior evidence for this study. This choice also enables us to use a larger set of evidence as the basis for the priors and is simple to describe.

**Table 8. Approaches for using Pathways to define prior information**

Parameter and description	Approach for main analysis	Approach for sensitivity analyses
<b>Quality of study.</b> Pathways rates the quality of evidence as either high, moderate, or low.	<b>High quality studies.</b> We focus on studies that were rated as high quality. Assuming the Coaching Employment evaluation meets the standards for a high-quality evaluation, focusing on high-quality studies ensures a more comparable set of priors.	<b>None.</b> We considered conducting a sensitivity check using a sample that would additionally include outcomes that were rated as moderate quality. However, few studies in the Pathways database fall in into this category, so a separate analysis would add little value.
<b>Population.</b> Pathways categorizes populations served by interventions based on eight dimensions: (1) whether they are cash assistance recipients, (2) whether they are disconnected or discouraged workers, (3) education level, (4) employment status and income level, (5) sex, (6) parental status, (7) whether they have specific employment barriers, and (8) whether they are young adults.	<b>All populations.</b> Because Pathways focuses on studies that include focal low-income populations—like the Employment Coaching programs in this study—we base the priors on all focal populations in our main analysis.	<b>Varies by program.</b> For FaDSS and Goal4 It!, the two programs with programs that have TANF participation as eligibility criteria, we also conduct analyses using priors based on cash assistance recipients. We do not recommend sensitivity analysis for the other programs.
<b>Intervention services.</b> Pathways categorizes intervention services into ten broad categories: (1) case management, (2) education, (3) employment retention services, (4) financial incentives, (5) health services, (6) sanctions, (7) supportive services, (8) training, (9) work and work-based learning, and (10) work readiness activities. A single intervention can include multiple services.	<b>All service types.</b> We base the priors on all interventions that offer all types of services in our main analysis. Given that Pathways focuses on employment programs, evaluations of all the intervention types can provide valid prior information.	<b>Interventions that include one-on-one assistance.</b> Because the coaching models can be developed to replace other one-on-one assistance models, such as case management, we conduct a sensitivity analysis using priors based on interventions that include one-on-one assistance.

## Outcome domains and timing

We base the priors on findings from other studies that align with the Employment Coaching study’s confirmatory outcomes in terms of domains and timing of measurement:

- **Outcome domains.** Pathways categorizes outcomes into four possible categories: benefit receipt, education and training, earnings, and employment. We base the priors on earnings, economic hardship, and benefit receipt because they are the confirmatory outcomes in this evaluation. Pathways does not include information on self-regulation skills, the other confirmatory outcome domain in this study. Thus, we exclude self-regulation skills from the Bayesian analyses.
- **Timing of outcome measurement.** Pathways also categorizes the timing of measurement of outcomes as either: “short-term” (18 months or fewer after participants are first offered services); “long-term” (between 18 months and 5 years after participants are first offered services); or “very long-term” (more than 5 years after participants are first offered services). We focus on categories that align with the timing of our data collection. For analyses of the first follow-up survey, we focus on “short-term” outcomes. For analyses of the second and third follow-up surveys, we focus on “long-term” outcomes.

## Sample sizes

Our proposed prior definitions yield a sufficiently large sample of findings and studies for each outcome domain and time period we include in the Bayesian analysis (Table 9). For each domain and time period, we have 106 or more studies, exceeding our target of at least 30. Our sensitivity analyses also are adequately powered.

**Table 9.**  
**Number of**  
**outcomes and**  
**studies available**  
**to form priors for**  
**the main analysis**

Outcome domain	Time period	Sample size	
		Findings	Studies
Earnings	Short-term	158	132
	Long-term	193	137
Benefits receipt	Short-term	362	106
	Long-term	376	108

Source: Pathways database. The Bayesian analyses will be based on estimates of impacts in effect size units. The anticipated number of studies represents the number of distinct studies that have at least one estimate in effect size units for a finding that falls in the outcome domain. The number of findings represents the number of available estimates in effect size units for outcomes in the domain across all studies.

## Presentation of Bayesian results

For the confirmatory outcomes, we present the Bayesian results next to the main impact estimates (see Table 10 for an example). For each outcome domain, we present several cutoffs that allow us to draw conclusions about the probability that the true impact is greater than or less than the cutoffs. We use the main estimates to draw conclusions about the effectiveness of the program and use the Bayesian findings to provide a complementary interpretation.



**Table 10. Example of presentation of Bayesian results**

Outcome	Program group	Control group	Estimated impact	Probability that the true impact is:		
				Greater than 0	Greater than 100	Greater than 250
Average monthly earnings (survey; \$)						
Average monthly earnings (administrative; \$)						

Note: Mean values by research group and estimated impacts are derived from a regression model controlling for key baseline characteristics. Probabilities of true impact size are derived from Bayesian analysis that incorporate prior findings from the Pathways to Work Evidence Clearinghouse.

## POOLING ACROSS PROGRAMS

To examine the average effect of coaching programs included in the Employment Coaching evaluation, we estimate impacts pooled across all programs as part of the secondary analysis. Impact estimates from this analysis are more precise than the program-specific estimates because of the larger sample size. In calculating pooled impact estimates, we weight program-level impacts equally, rather than weighting program-level impacts in proportion to the size of their sample. Weighting each program according to the size of its sample would arbitrarily give some programs more importance when computing a pooled estimate. In contrast, weighting programs equally generates a more policy-relevant parameter: the impact observed for an average program in the evaluation, recognizing that each program represents a different implementation of employment coaching.

Each pooled estimate is based on a regression model that controls for various baseline characteristics. All covariates are interacted with binary variables identifying each program. This approach allows the influence of each explanatory variable to differ for each program and enables us to account for the fact that the baseline data sources are different for the MyGoals programs than for the other programs. The pooled models use the same baseline covariates discussed in the previous section.

## ANALYSIS OF THE COVID-19 PANDEMIC

The COVID-19 pandemic led to widespread lockdowns and other disruptions in the United States beginning in March 2020. The pandemic has had profound impacts on the employment coaching programs' operations and the broader economic context. All the programs continued operating, but they had to adapt the types of services provided and the means of providing them in many ways in response to social distancing requirements, decreased economic activity, and changing participant needs. All programs changed from mainly in-person to virtual interactions through at least spring 2020. We conduct secondary and some exploratory analyses to assess how program impacts might have been influenced by the pandemic.

The pandemic did not disrupt the enrollment period for the programs in the Employment Coaching evaluation but could have affected service receipt for some program group participants. The pandemic began at least four months after the last study enrollment for all programs (Table 11). Some program group participants would have still been receiving program services at that time, particularly those who enrolled toward the end of the enrollment period.

**Table 11. The timing of the COVID-19 pandemic relative to study enrollment, by program**

<b>Program</b>	<b>Last month of study enrollment</b>	<b>Number of months between last study enrollment and onset of the pandemic in March 2020</b>
FaDSS	November 2019	4
Goal4 It!	November 2019	4
LIFT	November 2019	4
MyGoals Baltimore	September 2019	6
MyGoals Houston	July 2019	8

The pandemic occurred during the first follow-up period for some study participants in all programs, and during the second follow-up period for nearly all study participants. For example, the 9-month follow-up period would include the first pandemic-affected month (March 2020) for study participants at FaDSS, Goal4 It!, and LIFT who enrolled in June 2019 or later.

It is possible that the pandemic influenced program impacts. The direction of this influence is ambiguous. For example, if the programs were successful in improving goal-setting and self-regulation skills, those skills might have helped program group members better adapt to uncertainty in the post-pandemic economy compared to control group members, leading to larger earnings impacts than would be found under more typical economic conditions. Alternatively, the lack of jobs in the post-pandemic economy could have eliminated work opportunities that would have otherwise been available to program group members, leading to smaller program impacts on earnings than would be found under more typical economic conditions. Furthermore, lack of employment could lead to reduced opportunities to practice and maintain goal-setting and self-regulation skills in an employment setting, which could cause impacts on goal-setting and self-regulation skills to decay. Lack of employment also likely affected receipt of public benefits, as did modifications to criteria for receiving benefits made in response to the pandemic. In addition, we do not know whether virtual provision of services is more or less effective than in-person service provision, or whether the shift to provide other types of services during the pandemic could influence impacts.



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Our approach is to examine whether impacts changed after the onset of the pandemic in the United States in March 2020.<sup>8</sup> We recognize that we are not able to isolate completely changes in impacts associated with the pandemic from changes in other factors that might have affected impacts in March 2020. As well as changes over time in the coaching programs, the economy, and other contextual factors that might affect impacts, there is also a compositional change in study participants. Participants who enrolled in the study earlier have a greater concentration of months in the follow-up period occurring before the start of the pandemic, compared to those who enrolled in the study later. The characteristics of study participants may change over time and the program impacts also are likely to change over time. However, a major change in impacts that emerged in March 2020 will indicate that there was likely a change as a result of the pandemic.

We use quasi-experimental methods to estimate whether the impacts of coaching changed after March 2020. We estimate the difference in outcomes between program and control groups in months relative to March 2020 rather than in months relative to study enrollment as we do in our main analysis. In other words, we estimate the coaching impact in a specific calendar month rather than in a specific month after study enrollment. We then compare the impact of the programs in the months before the pandemic to the impacts in the months after in a statistical model that includes an indicator for the time between the calendar month and the start of the pandemic in March 2020. We control for changes in the composition of the study participants over time by including in the model covariates for (1) how long participants were enrolled in the study in the calendar month and (2) an individual fixed effect which controls for any characteristics of individuals that do not change over time, including when they were randomly assigned. The coefficient on the indicator for the time between the calendar month and the start of the pandemic provide an estimate of the change in the impacts of the coaching program resulting from the pandemic.

We analyze whether the pandemic influenced the impact of coaching programs on the outcomes for which we have monthly or quarterly measures. This includes three outcomes: (1) self-reported earnings, (2) earnings reported to a UI agency, and (3) TANF cash assistance benefit receipt.

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<sup>8</sup> The analytic approach described here is an improvement on the earlier approach. The revised approach results in more robust findings that more appropriately support interpretation of related confirmatory findings.

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## Approach to Exploratory Analysis

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In addition to estimating impacts on exploratory outcomes, the exploratory analyses also include: (1) estimating impacts by subgroup; (2) estimating impacts on participants; (3) mediation analysis; and (4) conducting robustness checks.

### SUBGROUP ANALYSIS

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As part of the exploratory analysis, we check the consistency of impacts on confirmatory outcomes across subgroups. Identifying differences in impacts by groups of participants, identified by their characteristics at study enrollment, could help programs think through whether there is a need to revise services and can help our understanding of the magnitude of impacts.

While arguments can be made for why impacts differ between many groups of participants based on their characteristics at baseline, there is no hypothesis or expectation that the impacts would differ significantly by subgroup. Thus, all the subgroup analysis is part of the exploratory analysis. We present findings from the subgroup analysis in the technical appendix, referencing them in the text of the main report as appropriate (per Table 1).

We estimate subgroup analysis pooled across all programs when the relevant baseline information is available for all programs and across FaDSS, Goal4 It!, and LIFT when the relevant information is not available for MyGoals. We also estimate subgroup analysis separately for each program. Because the set of baseline information we have on study participants differs for MyGoals and the other programs, the subgroups we can examine differs across programs.

For adequate statistical power, we do not estimate separate impacts for subgroups with fewer than 300 study participants. A sample of 300 study participants would provide a minimum detectable effect size of 0.27 for outcomes based on administrative records and 0.32 for those based on survey reports. This requirement means that we can examine subgroups that represent 7 percent of the sample in analysis that pools across all programs, 17 percent for the MyGoals program (pooled across Houston and Baltimore locations), and about 35 percent for FaDSS, Goal4 It!, and LIFT. Thus we would not examine less common subgroups, especially in the program-specific analysis for FaDSS, Goal4 It!, and LIFT. For example, we do not include sex as a subgroup as more than 80 percent of participants in each program consider themselves female. Similarly, we would not estimate the impacts for subgroups of participants who received TANF prior to study enrollment in FaDSS or Goal4 It! as all program participants must receive TANF to be eligible for the coaching.

Table 12 presents some subgroups we examine and the data source to be used to identify subgroups. We may expand the set of subgroups included in the exploratory analysis as needed to investigate patterns in the confirmatory analysis for each program.

**Table 12. Subgroups to include in exploratory analysis**

Subgroup	Program	Data source
<b>Demographic and socioeconomic characteristics</b>		
Age	All	Baseline survey (FaDSS, Goal4 It!, LIFT) MyGoals baseline form (MyGoals)
Race/ethnicity	FaDSS, Goal4 It!, LIFT Not in MyGoals because about 95 percent of study participants are Black, Non-Hispanic	Baseline survey
Number of children	All	Baseline survey (FaDSS, Goal4 It!, LIFT) Public Housing Authority administrative data (MyGoals)
Disability	MyGoals only Information is not available for other sites	Public Housing Authority
Received income from any public assistance or social insurance program	LIFT and MyGoals Not for FaDSS and Goal4 It! as all FaDSS and Goal4 It! participants are TANF recipients	Baseline survey (LIFT) Public Housing Authority administrative data (MyGoals)
<b>Education, employment, and goal-setting</b>		
Challenges to employment at baseline	FaDSS, Goal4 It!, LIFT Information is not available for MyGoals	Baseline survey (FaDSS, Goal4 It!, LIFT)
Education	All	Baseline survey (FaDSS, Goal4 It!, and LIFT) MyGoals baseline form (MyGoals)
Recent employment history at time of study enrollment	All	Baseline survey (FaDSS, Goal4 It!, and LIFT) Public Housing Authority administrative data (MyGoals) NDNH data for NDNH outcomes (All programs)
Goal setting at baseline	FaDSS, Goal4 It!, and LIFT Information is not available for MyGoals	Baseline survey
<b>Community</b>		
Degree of urbanity	FaDSS only Insufficient variation in locations of other programs	County of FaDSS location
Whether in New York City, Los Angeles, or Chicago	LIFT only	Program data

## ESTIMATES OF THE IMPACTS FOR THOSE WHO RECEIVED PROGRAM SERVICES

Our main impact analysis compares outcomes for all those assigned to the program group to those assigned to the control group and provide estimates of the “intent to treat” (ITT) impact. However, policymakers and program administrators are also interested in estimates of the impact of the intervention on those who actually participated in the intervention—the “treatment on the treated” (TOT) impact. To estimate the TOT impact, we apply the Bloom adjustment (Bloom 1984), which involves dividing the ITT estimate by the percentage of the program group who received intervention services. This approach is valid if no members of the control group receive coaching. We estimate Bloom-adjusted impacts for the MyGoals programs, where about 7 percent of program group participants had no contact with the program in the nine months after study enrollment. We do not estimate TOT impacts for FaDSS, LIFT or Goal4 It! because all or nearly all program group members received some coaching services.

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We might also conduct analysis to estimate impacts for those who received certain amounts or types of program services if doing so would be useful for interpreting findings from the confirmatory analysis.

## **MEDIATION ANALYSIS**

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As part of the exploratory analysis, we conduct a mediation analysis, which sheds light on the mechanisms through which impacts emerge. We use a two-step procedure to estimate this decomposition (Heckman et al. 2015; Kautz and Zanoni 2015). This analysis focuses on outcomes with statistically significant impacts in the confirmatory analysis. For example, if there are statistically significant impacts on average monthly earnings, we could decompose the overall program impact on earnings into (1) a component attributable to impacts on potentially relevant outcomes like self-regulation, goal setting, and hard skills and (2) a component attributable to changes in other, unmeasured variables. In another example, if there is a statistically significant impact on goal-setting and attainment, we could decompose the overall program impact into (1) a component attributable to impacts on service-receipt outcomes such as receipt of one-on-one job assistance related to goal setting and attainment and (2) a component attributable to changes in other, unmeasured variables.

We determine the specific outcomes to include in the mediation analysis based on findings from the confirmatory analysis. We do not conduct this analysis if there are no statistically significant impacts in the confirmatory analysis. If conducted, this analysis includes intermediate outcomes for which there are statistically significant impacts.

## **ROBUSTNESS CHECKS**

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As part of the exploratory analysis, we conduct analytic robustness checks to verify that the findings from our confirmatory analysis are not overly sensitive to specific analytic decisions that we made. We perform robustness checks by re-running the confirmatory analyses using different specifications. For example, we compare the findings of our confirmatory analyses from when we apply weights and when we do not, and we compare the findings of our confirmatory analyses from when we use regression models with and without covariates. We present findings from these sensitivity analyses in the technical appendix, referencing them in the text of the main report as appropriate.

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## Appendix A

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### PSYCHOMETRIC ANALYSIS OF OUTCOMES IN THE GOAL-SETTING AND SELF-REGULATION SKILL DOMAIN

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We conducted an analysis to determine how to define measures of goal setting and self-regulation skills using the responses from questions on the surveys and whether these measures are reliable and valid. We had previously identified four measures based on a psychometric analysis of the data collected on the baseline survey: (1) Goal-setting, (2) Self-esteem (Rosenberg 1965), (3) Emotional control and self-monitoring (Roth et al. 2005), and (4) Task monitoring, planning, and initiation (Roth et al. 2005).

This appendix describes a similar analysis we conducted using responses to items included in the first follow-up survey. Our analyses proceeded in three steps. First, we posited how to group individual survey items into measures of specific self-regulation skills. In this step, we developed new groupings of items on goals and self-regulation skills that were included in the follow-up surveys but not on the baseline survey. For measures that also appeared on the baseline survey, we used the groupings suggested by our analyses of the baseline survey. Second, we examined the reliability and validity of the measures using data from the first follow-up survey data, including those that we previously had examined using data from the baseline survey. Third, informed by the results, we revised the measures slightly and confirmed the reliability and validity of the final, proposed version of the measures.

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#### STEP 1. GROUPING ITEMS INTO MEASURES

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In this step, we focused on grouping items that were on the first follow-up survey but not on the baseline survey. Three measures of self-regulation skills were developed from items common across the baseline and follow-up surveys. Because these three measures were based on existing instruments and performed well using data from the baseline survey, we did not revisit their definitions but did confirm their reliability and validity using data from the follow-up survey. The follow-up survey also included two sets of study-developed items that did not appear in the baseline survey. The new items were designed to capture (1) aspects of goal-related skills and (2) self-regulation skills as demonstrated in the context of employment.

**Goal-related skills.** The follow-up survey includes five additional items related to goals, in addition to the three that appeared in the Goal-setting scale in the baseline survey (Table A.1). We considered two ways to group the items into scales: (1) an overall measure of goal-setting and attainment and (2) separate measures of goal-setting and goal attainment (see the last column of Table A.1). Because we did not have prior evidence on these items, we tested both options to see which grouping fit the data better. As described in the next section, our analyses supported a single measure, *Goal-setting and attainment*.

**Self-regulation skills in the employment context.** The follow-up survey included five additional items designed to measure self-regulation skills as demonstrated in the context of employment, in addition to the one that appeared in the baseline survey (Table A.2). We posited that these six items together would measure a single skill, *Employment-related self-regulation*.

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**Table A.1. Goal-related items in the first follow-up survey**

#	Item	In baseline survey?	Goal-setting or goal attainment?
1	I know I need to get a job or a better job and really think I should work on finding one.	Yes	Goal-setting
2	I set employment goals based on what is important to me or my family.	No	Goal-setting
3	I set long-term employment goals that I hope to achieve (such as finding a job, finding a better job, getting promoted, or enrolling in further education).	Yes	Goal-setting
4	I set specific short-term goals that will allow me to achieve my long-term employment goals.	Yes	Goal-setting
5	Based on everything I know about myself, I believe I can achieve my employment goals.	No	Goal attainment
6	When I set employment goals, I think about barriers that might get in my way and make specific plans for overcoming those barriers.	No	Goal attainment
7	Even when I face challenges, I continue to pursue my employment goals.	No	Goal attainment
8	I keep track of my overall progress toward my long-term employment goals and adjust my plans if needed.	No	Goal attainment

**Table A.2. Items measuring self-regulation skills in the employment context in the first follow-up survey**

#	Item	In baseline survey?
1	Lost your temper with someone other than friends or family.	No
2	Said something that you later regretted to someone other than friends or family.	No
3	Decided not to apply for a job because you didn't think you would get an interview.	No
4	Overcome a barrier that could have prevented you from finding or keeping a job.	No
5	Been late for a job, interview, program meeting, class, or training session.	Yes
6	Missed an appointment related to work, looking for a job, a program, school, or training for a reason other than you were sick or ill.	No

## STEP 2. EXAMINING THE RELIABILITY AND VALIDITY OF THE MEASURES

To examine whether the candidate measures performed well, we conducted two analyses. First, we estimated Cronbach's alpha for each of the five measures. This is a statistic that provides evidence on internal consistency reliability, the degree to which different items for a given measure produce similar results. Second, we conducted a confirmatory factor analysis that sheds light on aspects of validity—whether the measures capture what they were designed to measure. The confirmatory factor analysis examined (1) factor loadings that capture the extent to which each item relates to the underlying self-regulation skill (related to internal consistency reliability), (2) model fit statistics that summarize whether the groupings of items into measures fit the data well overall (exhibit model validity), and (3) correlations between the pairs of skills that suggest whether separate measures capture different constructs (exhibit discriminant validity). We conducted the analysis twice, once with a single goal-setting and attainment measure, and once



with separate measures of goal-setting and goal attainment. In both cases, the models also included the four other measures. We restricted the analysis sample to the control group to limit the possible perception that we selected definitions of outcome measures based on the results of the impact analysis. We assessed whether the hypothesized measures met standard criteria for reliability and validity based on how corresponding statistics compared to target values (Table A.3). As discussed in Kautz and Moore (2020), we viewed these criteria as guidelines, rather than strict rules.

**Table A.3. Criteria used for assessing reliability and validity**

Type of reliability or validity	Statistic	Target value
Internal consistency reliability	Cronbach's alpha	At least 0.65 (DeVellis 2017).
Internal consistency reliability	Factor loading	0.40 or above (Stevens 2012), particularly in cases when Cronbach's alpha is low; and the sign matches the theoretical relationship between the item and factor.
Model validity (overall model fit)	Root mean square error of approximation (Steiger and Lind 1980)	0.05 or below for a close fit and 0.08 or below for a reasonable fit as suggested by Browne and Cudeck (1992) based on practical experience.
Model validity (overall model fit)	Comparative Fit Index (Bentler 1990b)	0.90 or above as suggested by Brown (2015) based on analysis by Bentler (1990a).
Model validity (overall model fit)	Tucker Lewis Index (Tucker and Lewis 1973)	0.90 or above as suggested by Brown (2015) based on analysis by Bentler (1990a).
Discriminant validity	Correlation between factors	Less than 0.80 and they are theoretically distinct (Brown 2015).

All five of the measures met the criteria in Table A.3 with three exceptions:

- 1. A correlation between factors that exceeded the target value of 0.80.** We estimated that the correlation between the two separate measures of Goal-setting and Goal-attainment was 0.91. This estimate exceeds our cutoff for discriminant validity, suggesting that the two measures capture the same underlying skill. As an additional check, we used the Kaiser criterion (Kaiser 1960) to estimate the number of skills captured by the group of goal-related items and found that the items in the combined goal-setting and attainment measure captured a single skill. Based on this evidence, we use the combined *Goal-setting and attainment* measure.
- 2. A factor loading that had an unexpected sign.** A factor loading ranges from -1 to 1, and a positive factor loading indicates that higher values on the item are positively associated with the overall measure whereas a negative factor loading indicates that higher values on the item are negatively associated with the overall measure. The sign of the factor loading (negative or positive) should match the expected relationship with the skill. However, the factor loading had an unexpected sign for one item in the *Employment self-regulation* measure ("Overcome a barrier that could have prevented you from finding or keeping a job."). The factor loading suggested that participants who overcame barriers more frequently had lower self-regulation skills. One possibility is that people who have higher levels of self-regulation skills experience fewer barriers to begin with, so they also report overcoming fewer barriers. Based on this evidence, we remove the item from the scale of *Employment self-regulation*.

3. **A factor loading that was lower than the target value of 0.40.** The factor loading for one item in the goal-setting and attainment scale (“I know I need to get a job or a better job and really think I should work on finding one”) was 0.21. The downside of retaining an item with a low factor loading is that it could reduce the scale’s overall internal consistency reliability. However, when including this item, the Cronbach’s alpha of the goal-setting and attainment scale is 0.86, well above our target of 0.65. Because this item does not threaten the scale’s overall internal consistency reliability and was included in the baseline *Goal-setting* scale, we retain it in the follow-up scale for consistency.

### STEP 3. THE RELIABILITY AND VALIDITY OF THE REVISED MEASURES

After making our two proposed changes, we re-estimated the Cronbach’s alpha and the confirmatory factor model for the combined *Goal-setting and attainment* measure, the revised *Employment self-regulation* measure, and the three measures of self-regulation skills we had developed using items from the baseline survey. For all scales, Cronbach’s alpha met our criteria for internal consistency reliability (Table A.4). Aside from the factor loading for the one item in the *Goal-setting and attainment* scale discussed in Step 2, the factor loadings exceeded the target factor loading of 0.40, with values ranging from 0.52 to 0.88. Similarly, the overall fit statistics and correlations between skills met our criteria for model validity and discriminant validity (Tables A.5 and A.6). Based on these analyses, we do not propose additional revisions to the measures. For the full list of items in each of the five measures, see Tables 2 and 4 in the main body of this technical supplement.

**Table A.4. Reliability of measures of self-regulation skills**

Measure	Cronbach’s alpha	Meets criterion
Goal-setting and attainment <sup>a</sup>	0.86	Yes
Self-esteem <sup>b</sup>	0.66	Yes
Emotional control and self-monitoring <sup>c</sup>	0.88	Yes
Task monitoring, planning, and initiation <sup>c</sup>	0.92	Yes
Employment self-regulation <sup>d</sup>	0.66	Yes

Source: Evaluation of Employment Coaching first follow-up survey.

<sup>a</sup> 0- to 3-point scale based on the extent to which respondents agree with statements that reflect a high level of Goal-setting and attainment skills. The scale indicates whether they (0) strongly disagree, (1) disagree, (2) agree, or (3) strongly agree.

<sup>b</sup> A 0- to 3-point scale based on the extent to which respondents agree with statements that reflect a high level of Self-esteem. The scale indicates whether they (0) strongly disagree, (1) disagree, (2) agree, or (3) strongly agree.

<sup>c</sup> A 0- to 2-point scale that indicates whether respondents have problems related to the skill (0) often, (1) sometimes, or (2) never.

<sup>d</sup> A 0- to 3-point scale based on the frequency with which respondents exhibit behaviors that reflect a lack of Employment self-regulation skills. The scale indicates whether they exhibit specific behaviors (0) a few times a week, (1) a few times a month, (2) about once a month, or (3) hardly ever or never.

**Table A.5. Model fit statistics of measures of self-regulation skills**

Model fit statistic	Value	Meets criterion
Root mean square error of approximation		
Estimate	0.047	Yes
95 percent confidence interval (lower and upper bounds)	0.045 to 0.049	Yes
Comparative Fit Index (CFI)	0.963	Yes
Tucker Lewis Index (TLI)	0.960	Yes

Source: Evaluation of Employment Coaching first follow-up survey.

Notes: The estimates for each sample come from a single confirmatory factor model that assumes five factors that correspond to the five self-regulation skills. The items corresponding to each skill are constrained to relate only to that skill. The factors are not constrained to be independent.

**Table A.6. Correlations between measures of self-regulation skills**

Skill 1	Skill 2	Correlation	Meets criterion
Goal-setting and attainment <sup>a</sup>	Self-esteem <sup>b</sup>	0.43	Yes
Goal-setting and attainment <sup>a</sup>	Emotional control and self-monitoring <sup>c</sup>	0.20	Yes
Goal-setting and attainment <sup>a</sup>	Task monitoring, planning, and initiation <sup>c</sup>	0.29	Yes
Goal-setting and attainment <sup>a</sup>	Employment self-regulation <sup>d</sup>	0.14	Yes
Self-esteem <sup>b</sup>	Emotional control and self-monitoring <sup>c</sup>	0.57	Yes
Self-esteem <sup>b</sup>	Task monitoring, planning, and initiation <sup>c</sup>	0.58	Yes
Self-esteem <sup>b</sup>	Employment self-regulation <sup>d</sup>	0.49	Yes
Emotional control and self-monitoring <sup>c</sup>	Task monitoring, planning, and initiation <sup>c</sup>	0.74	Yes
Emotional control and self-monitoring <sup>c</sup>	Employment self-regulation <sup>d</sup>	0.70	Yes
Task monitoring, planning, and initiation <sup>c</sup>	Employment self-regulation <sup>d</sup>	0.53	Yes

Source: Evaluation of Employment Coaching first follow-up survey.

Notes: The estimates come from a single confirmatory factor model that assumes five factors that correspond to the five self-regulation skills. The items corresponding to each skill are constrained to load only on that skill. The factors are not constrained to be independent.

<sup>a</sup> 0- to 3-point scale based on the extent to which respondents agree with statements that reflect a high level of Goal-setting and attainment skills. The scale indicates whether they (0) strongly disagree, (1) disagree, (2) agree, or (3) strongly agree.

<sup>b</sup> A 0- to 3-point scale based on the extent to which respondents agree with statements that reflect a high level of Self-esteem. The scale indicates whether they (0) strongly disagree, (1) disagree, (2) agree, or (3) strongly agree.

<sup>c</sup> A 0- to 2-point scale that indicates whether respondents have problems related to the skill (0) often, (1) sometimes, or (2) never.

<sup>d</sup> A 0- to 3-point scale based on the frequency with which respondents exhibit behaviors that reflect a lack of Employment self-regulation skills. The scale indicates whether they exhibit specific behaviors (0) a few times a week, (1) a few times a month, (2) about once a month, or (3) hardly ever or never.

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