Bridge and Vocational Services within Financial Opportunity Centers: Evidence from Program Data

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Abstract

Financial Opportunity Centers provide bundled employment, financial, and income support services to low-income individuals, with the goal of increasing their net income and net worth and helping them achieve financial stability. Financial stability gains are constrained by the employment prospects of clients, who have median wages at job placement of $9.50/hour. Contextualized bridge programs are designed to provide remedial academic skills in the context of specific career pathways, allowing clients to achieve the ability to succeed in pre-existing sector-specific advanced employment skill programs which will increase their earning power. Fourteen Financial Opportunity Centers have been providing some version of these services to clients. An analysis of data from these programs using a propensity score-based matched control group finds that participants who completed these programs were placed more quickly, had initial wages that were $1.12 higher, and were 8 percentage points more likely to retain jobs for six months than participants who did not receive bridge/vocational education.

Background & Problem Statement

Financial Opportunity Centers offer integrated employment and financial coaching to low-income individuals in 76 non-profit organizations in 32 cities. Evidence from program data from the centers indicates that adding financial coaching to traditional employment services in the FOC setting boosts employment outcomes, increasing placement and retention rates. Net income increases for individuals receiving bundled services are also higher. Financial coaching and help connecting to relevant income support streams allows clients to make the most of their financial situation and stabilize their finances in preparation for and after attaining a job placement, which leads to greater success in the new employment situation.

Long term financial advancement, however, is limited by the employment prospects available to clients. The goal of FOCs is to move clients towards financial stability, including positive net income, high credit scores, and positive net worth. But the median wage for all FOC client job placements is $9.50 an hour, which makes it difficult to build credit and savings.

The workforce system is set up to help train or retrain individuals whose skills do not match their local job market. But FOCs serve a more difficult to place population than the mainstream workforce centers, and many clients do not have the basic educational skills needed to succeed in sector-based training programs. Hence the emergence of "contextual bridge" programs which provide remedial literacy and numeracy skills within a curriculum that is explicitly geared towards setting up participants for success in

specific sector-based advanced skills instructional programs, such as manufacturing or health care programs.

The need for these services is clear enough that many of the organizations within the FOC network have begun attempting to provide such skills bridging services or connect their clients to these services at third party providers such as community colleges. This work looks different at each site, but there are enough clients who have received such services that we have been able to examine the program data tracked for all FOC clients to see if it is possible to discern a program effect for clients who have completed such programs.

Methods

Available Data

Data collection for FOC clients occurs as part of program service delivery. There are three FOC program "modules" tracked in the Financial Opportunity Center deployment of Social Solutions' Efforts to Outcomes software – Financial Counseling, Employment Counseling, and Income Supports Counseling. Clients are enrolled into the each FOC program module at their first counseling appointment within each program. Some data in ETO is collected for all clients, while other data points are only collected for clients enrolled in particular program modules.

Demographic information is available for all clients (although as with all data points there are some missing values); it is recorded during intake, before clients are enrolled into the three FOC counseling programs. Program contact information is recorded for all clients. For each contact with clients enrolled in any of the three FOC counseling modules, program staff to record the date, duration, program, and nature of contact. ETO is capable of tracking job records for all clients, but in practice most clients for whom job information is recorded are enrolled in the Employment Counseling module. Job records include information on employment start and termination (if applicable) dates, employer, job sector, wage levels, and ongoing updates on job retention. ETO also tracks education services to clients. Education records include the education level or service type, enrollment date, completion date if applicable, and educational institution or service provider.

Clients who are enrolled in the Financial Counseling module work with their counselors to complete Combined Financial Assessments (CFAs). CFAs contain baseline information on financial behaviors, client budgets, client balance sheets, and credit scores. Budgets are created during clients' initial financial counseling sessions and are updated during subsequent counseling sessions, generally when a material change has happened in the client's financial life, such as a change of employment.[1] Detailed information on monthly income and expenses is captured, and monthly net income is calculated.

For this analysis, individual-level records on demographics, employment, program services, education services, and CFA budgets were combined to analyze the effect on employment & net income outcomes of bridge or vocational education services. The raw dataset includes 13,925 participants from 14 sites

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[1] In some cases other FOC staff (non-financial counselors) will provide abbreviated updated budget data; for instance, when an employment counselor learns about a job placement they may update the client's income to reflect the new wage. Because these updates generally do not include updates of the expense side of the budget, for analysis purposes we choose to exclude them from our calculations.

which were known to LISC program staff to provide bridge programming were included. The time frame for the dataset is February 2011 through December 2014.

Analytical approach

Designation of treatment and control groups

This is an in-program comparison analysis, meaning that both treatment and control groups are drawn post-facto from the pool of FOC clients recorded in ETO. Treatment group members are individuals who have an ETO education record indicating that they completed a bridge or vocational-education program within the time frame of our analysis. In the case of one site (JARC), bridge program participation was not recorded in ETO, but participants were tracked separately by the site and ETO IDs of participating clients, along with program start and end dates, were provided for our analysis. The control group includes FOC clients who are not identified as participating in such programs.

There are several limitations to this approach. The first is that information about educational participation is known to be incomplete – ETO tracks a vast amount of data, and data quality is better for data points which have been emphasized as management priorities by managers at the FOC sites and at LISC; education data points have generally not been given that emphasis at the centers during the time period of the study. In this case, data quality issues are likely to manifest as missing data - there are likely to be missing education records and hence clients who may have participated in bridge or vocational programs but not had that participation captured in ETO. These clients would be erroneously included in the control group rather than the treatment group, which would weaken any observed program effect.

The other, bigger problem with using an in-program control group is that there may be observed or unobserved differences between the population that received the treatment and those that did not. While both populations expressed intent to participate in the broader FOC program, there may be motivational differences between the group that wound up utilizing bridge/vocational education and the group that did not. There may also be differences in beginning skill levels or in demographic characteristics which affect employment outcomes. Thus differences in outcomes between the two groups may be attributed to entering characteristics of the participants, rather than to a program effect.

This concern is mitigated in two ways – one conceptual and one methodological. Conceptually, the bridge and vocational program services offered at these sites during this time period are known to have been over-subscribed – there were more participants who could have benefited from the services than there were spaces available. Thus it makes sense that within our control group there are individuals who provide a legitimate counterfactual to the outcomes of our treatment group – but for an exogenous factor, the lack of spaces available, they would have been included in the treatment group. Methodologically, we have used a technique called propensity score matching to identify a subset of clients in the non-treatment group who look most like our treatment group on the known characteristics which might affect employment outcomes. This non-parametric pre-processing of program data is a

technique that has been developed to address exactly this problem of trying to compare subpopulations within non-experimental data.[2]

Construction of outcome variables

We are interested in the impact of bridge/vocational education on job attainment and retention and on the wage levels and subsequent net incomes of participants. The outcomes examined for this analysis are defined as follows:

Placement within 90 Days: For the treatment group, attainment of a new job within 90 days of completion date of bridge/vocational education. For the control group, attainment of a new job within 90 days of enrollment in FOC Employment Counseling.

Days to Placement: Days from completion of bridge/vocational education or EC enrollment to job placement.

180 Day Retention: For those who had a job placement more than 180 days prior to the end date of the study, reached a 180 day retention marker.

First Wage: Wage of first job attained after completion of bridge/vocational education or EC enrollment.

Last Wage: Ending wage for participants with multiple job placements.

Wage Difference: Wage increase/decrease for participants with multiple job placements

Net Income Change: Difference in dollars between first and last recorded net income amounts (for participants with more than one CFA budget).

Results

In both models (pre and post propensity score matching), the treatment group attains jobs faster and has higher initial wages in those jobs. Individuals in the treatment group with multiple job placements have higher wages for their last job placement than those in the control group. There are no statistically significant differences in the rate of placement within 90 days, the dollar amount of the wage difference for those with multiple job placements, or the change in net income.

Naïve Model

The naïve model is the model in which individuals who have completed vocational/bridge education are compared with all those who have not. Outcomes & significance tests are presented below.

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[2] Ho, D. E., Imai, K., King, G., & Stuart, E. a. (2006). Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference. Political Analysis, 15(3), 199–236. Practically, the use of this technique did not actually make much difference to the results, because the two groups were quite similar on the matching variables (age, gender, race, and education level) even before the match process. Results both pre and post-match are presented below.

Outcomes	Treatment	Control	Treatment N	Control N	P Value	Test
Placement within 90 Days	27%	25%	629	9137	0.34	Chi-sq
Days to Placement**	85	116	235	3811	0.00	Anova
180 Day Retention**	73%	64%	161	3456	0.03	Chi-sq
First Wage**	11.95	10.81	232	3832	0.00	Anova
Last Wage (multiple jobs)**	12.91	11.45	86	1149	0.00	Anova
Wage Difference (multiple jobs)	1.52	1.14	82	1129	0.48	Anova
Net Income Change	289	335	290	2382	0.34	Anova

*Significant at p<.1   **Significant at p<.05

Matched control group model

In the matched control model, a propensity scoring matching procedure was first used to select the control group. The match variables were age, race/ethnicity, criminal conviction status, and entering education level, each of which was associated with differential placement outcomes and/or wage levels in the larger dataset. Because we had a large dataset from which to draw the matched control group, nearest neighbor matching at a ratio of 10:1 was appropriate. The matching procedure estimates a propensity score for each individual – probability of receiving treatment given the covariates specified – and chooses matches by minimizing the distance between individuals' propensity scores. The propensity score estimation was done using a binomial generalized linear model with a logistic link function.[3] The treatment and control groups were fairly similar at the outset, so the adjustment in balance made by the matching procedures were not extreme.

The following table shows the pre-and post- match balance summary for the match variables and the distance measure. The first two columns show the pre-match means (or percentages for the levels of the categorical variables) for the treatment and control groups. Pre match, the treatment group is slightly younger, has more African-Americans and fewer Caucasians, and has fewer members on the low and high end of entering education level - with no high school diploma or with a bachelors or higher. The third column shows the difference in means between the two groups before matching. The fourth through sixth columns show the same information post match. The control group now more closely resembles the treatment group on these variables. The last column shows the percent improvement in the means difference between pre- and post- match, calculated as the percentage change in the absolute values of the two mean differences.

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[3]Analysis was conducted in R:
R Core Team (2014). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org/.
Matching was conducted using the MatchIt package:
Ho, D. E., Imai, K., King, G., & Stuart, E. A. (2005-2013). MatchIt : Nonparametric Preprocessing for Parametric Causal Inference. Available through the Comprehensive R Archive Network.

Matching procedure balance improvement

	Means Treated Pre-Match	Means Control Pre-Match	Mean Diff Pre-Match	Means Treated Post-Match	Means Control Post-Match	Mean Diff Post-Match	Mean Diff Percent Improvement
Distance	0.0596	0.0539	0.01	0.0596	0.0596	0.00	100%
Age	38.0	38.5	-0.55	38.0	38.1	-0.14	75%
Race/Ethnicity							
African-American/Black	57%	51%	0.06	57%	58%	-0.01	88%
American Indian/Alaskan Native	0%	1%	0.00	0%	0%	0.00	90%
Asian/PI	5%	4%	0.01	5%	5%	0.01	53%
Caucasian/White	11%	19%	-0.08	11%	11%	0.00	94%
Hispanic	25%	23%	0.02	25%	24%	0.01	59%
Multi-Racial	1%	3%	-0.01	1%	2%	0.00	85%
Criminal Convictions							
Felony	20%	21%	-0.01	20%	19%	0.00	66%
Misdemeanor	9%	11%	-0.01	9%	10%	0.00	81%
No Convictions	71%	68%	0.03	71%	71%	0.00	93%
Education							
No High School Diploma	14%	21%	-0.07	14%	14%	0.00	97%
HS-GED	43%	39%	0.04	43%	44%	-0.01	78%
AA-Some College	36%	31%	0.05	36%	36%	0.00	96%
Bachelors or Higher	6%	9%	-0.03	6%	6%	0.01	64%

Sample sizes

The match procedure requires non-missing values on all match variables, which eliminated 2156 individuals from the analysis. The match then finds the nearest 10 observations for each treatment observation.

	Control	Treated
All	11131	638
Matched	6380	638
Unmatched	4751	0

The matching procedure has some slight effects on the outcomes, but the pattern is the same: the treatment group has fewer days to placement, higher 180-day retention, and higher initial wages at placement. There was no statistically significant difference in the likelihood of receiving a job placement within 90 days between the two groups, as evaluated by a Pearson's chi-squared contingency table test and a significance threshold of $p=.05$. The mean number of days to placement was lower for the treatment group by approximately one month – a mean of 81 day for the treatment group versus 113 days for the control group. This difference is statistically significant based on an analysis of variance model and a significance threshold of $p=.05$. Given a job the treatment group is eight percentage points

more likely to reach a 180 day retention marker, a finding that is significant with a p-value just over .05. The treatment group initial wage was $1.12 higher than that of the control group, also a statistically significant result. These wage gains persisted; for participants who had multiple jobs recorded, the treatment group's final wage was $1.27 higher than that of the control group. There was no statistically significant difference in post-treatment wage gains for those with multiple jobs (given the higher initial wages the treatment group attained) or in the net income changes between the two groups.

Outcomes	Treatment	Control	Treatment N	Control N	P Value	Test
Placement within 90 Days	27%	26%	608	4910	0.88	Chi-sq
Days to Placement**	81	113	222	2133	0.00	Anova
180 Day Retention*	73%	65%	149	1954	0.05	Chi-sq
First Wage**	11.89	10.77	219	2151	0.00	Anova
Last Wage (multiple jobs)**	12.61	11.34	79	637	0.00	Anova
Wage Difference (multiple jobs)	1.46	1.18	76	624	0.52	Anova
Net Income Change	270	325	277	1297	0.27	Anova

*Significant at p<.1   **Significant at p<.05

Conclusion

This within-program analysis with a matched control group provides moderate evidence that the existing bridge and vocational programming provided by Financial Opportunity Centers between February 2011 and December 2014 had positive impacts on employment outcomes. Participants were placed more quickly, had initial wages that were $1.12 higher, and were 8 percentage points more likely to retain jobs for six months than participants who did not receive bridge/vocational education. These results are promising, but evidence from a larger quasi-experimental or randomized control trial with standardized program delivery is needed to substantiate these findings.

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