Training to end poverty?

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A pressing issue in most LICs

- ▶ Large cohorts of jobseekers enter the market every year
  - ▶ 15 million per year in SSA alone (IMF 2024)
- ▶ Their future (and that of their countries) depends on whether they can find a productive job
- ▶ A common policy response to is to offer on-the-job or vocational training.

On-the-Job and Vocational Training

▶ One of the most common interventions

▶ One of the most evaluated interventions

▶ Treatment Effects vary meaningfully, around a positive mean of about 5 pctg points
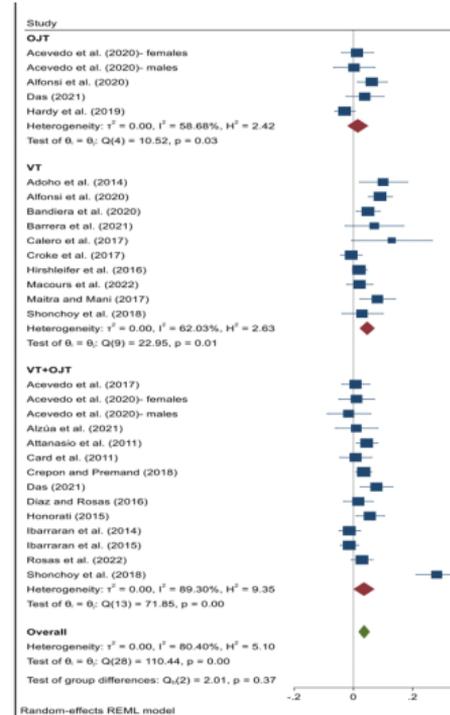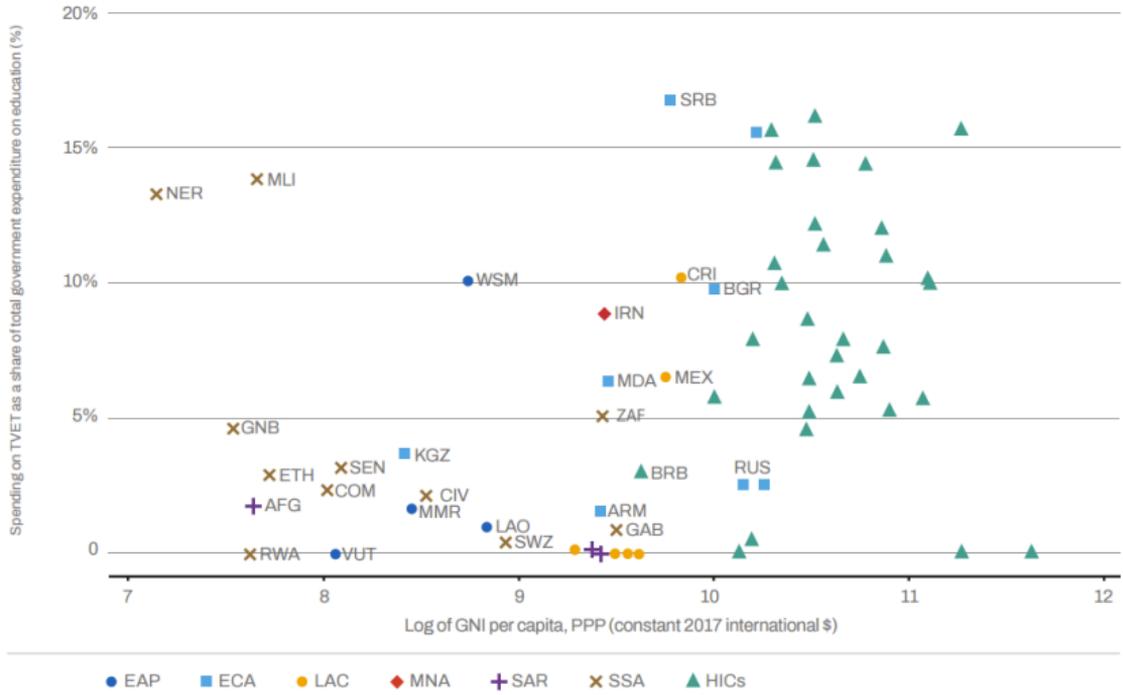
Adoption varies widely
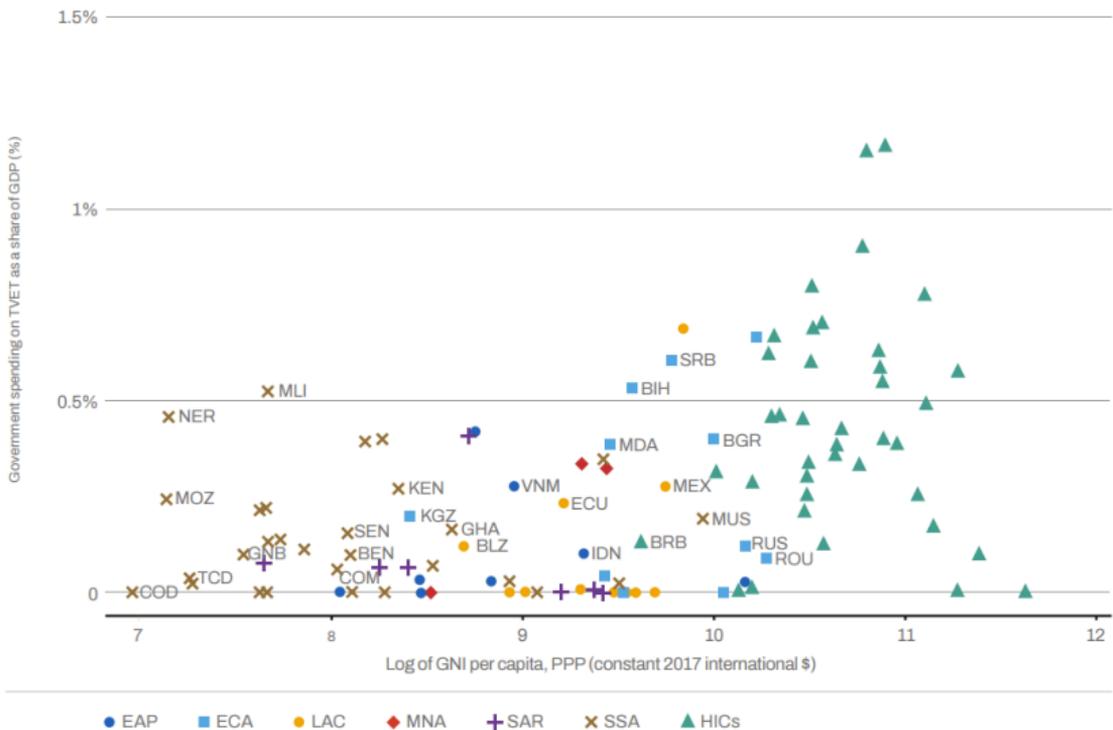
World Bank, International Labour Organization, and UNESCO, Building Better Formal TVET Systems:
Principles and Practice in Low- and Middle-Income Countries (Washington, DC: World Bank, 2023),

Also conditional on preferences for education

World Bank, International Labour Organization, and UNESCO, Building Better Formal TVET Systems: Principles and Practice in Low- and Middle-Income Countries (Washington, DC: World Bank, 2023),

Training to end poverty?

- Human capital is key, but may be privately unaffordable
- Human capital is likely to be lumpy
- Lumpy investment + credit constraint $\rightarrow$ poverty traps

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- Training could improve both equity and efficiency
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- Key open questions:
  - Are the poor unable to pay for training at current prices?
  - Do they have high returns from training?

This project

- We evaluate Prosper, a training program (OTJ) designed and implemented by BRAC in Bangladesh
- Participants pay a significant fee
  - This may exclude the poor
- BRAC officers select and invite potential trainees
  - This might further skew the sample (through selection + persuasion)

- Can we scale up to include those unable to pay the full price?
- Will these individuals benefit?
- Can training reduce poverty?

Contributions

1. A large literature on training in LMICs
   Kluve et al. 2019, Agarwal and Mani 2023, Carranza and McKenzie 2024
   - ▶ Identify price sensitivity of take-up and show impacts for individuals with different WTP;

2. A new literature that studies targeting on impact rather than deprivation
   Kitagawa Tetenov 2018, Caria et al. 2023, Haushofer et al. 2025, Bjorkegren et al. 2025
   - ▶ Show evidence on impact-deprivation tradeoff for human capital interventions;
   - ▶ But also how to ameliorate this by leveraging the NGO's goals and information (aspirational).

3. An organizational economics literature on information in local organizations
   Bandiera et al. 2020, Best et al. 2020

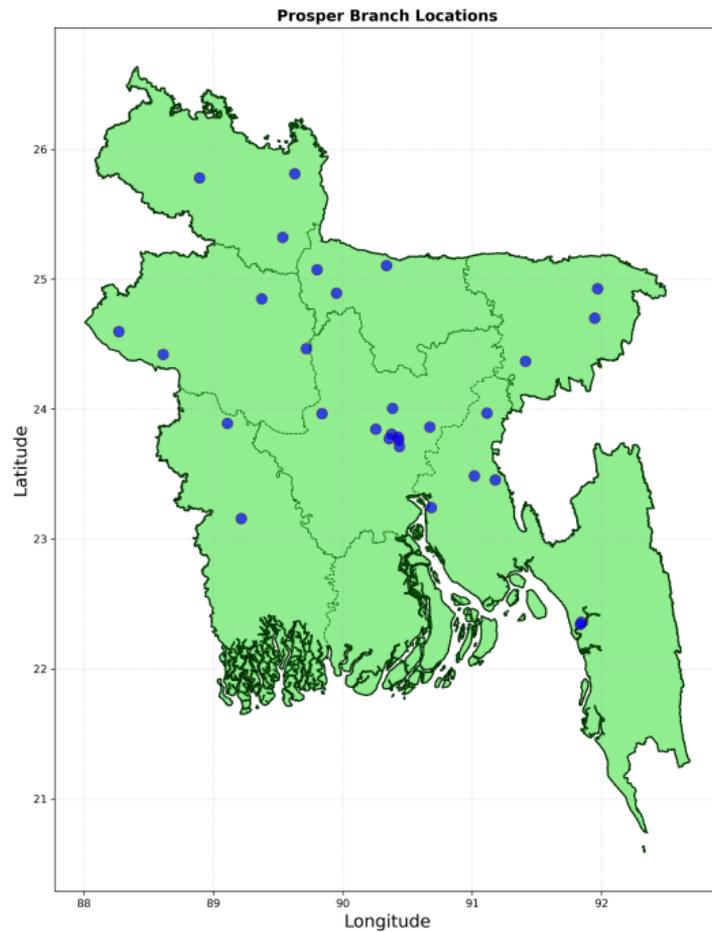# Roadmap

Prosper

- ▶ Operates in urban/peri-urban areas
- ▶ 3 months unpaid internship with master craft person
- ▶ 4 sectors: Graphic design, IT repair, Tailoring, Beauty Specialist
- ▶ Cost: 4100Tk
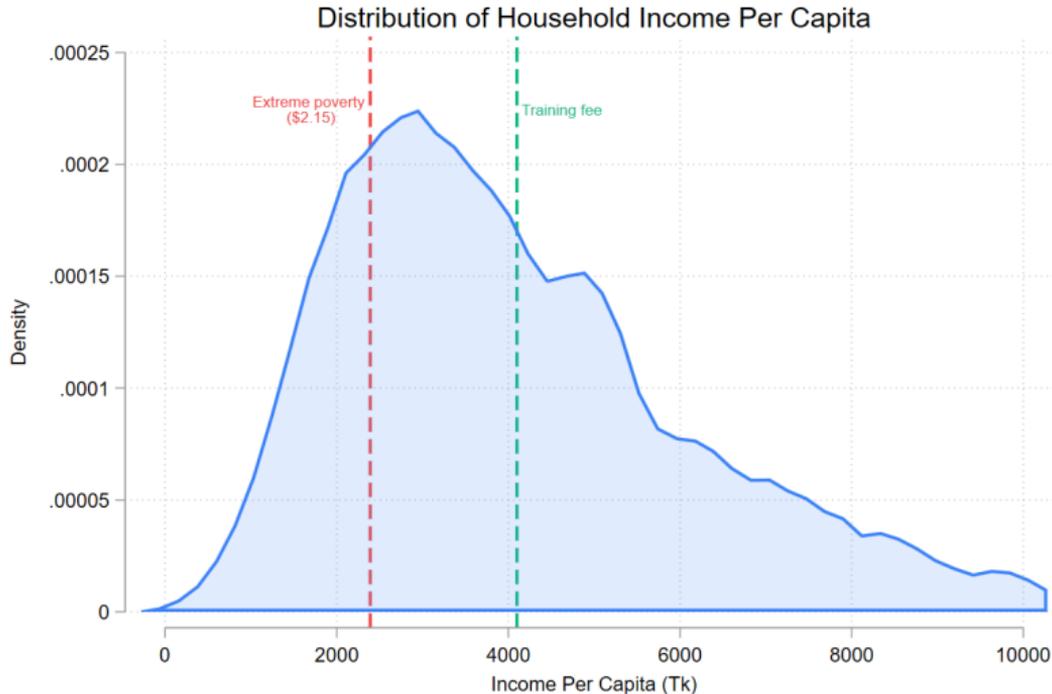
Distribution of Household Income Per Capita

Training locations

Prosper Branch Locations

Roadmap

Sampling

- We collect a census of individuals living in randomly selected neighborhoods close to BRAC's training centers in peri-urban Bangladesh (N=42,895)
- Eligibility: persons age 16-40 living in households with monthly incomes below 10,000 Tk per capita (N=37,389)
- We restrict to those with permission from family to participate in training (N=35,416)
- We further restrict to those interested in at least 1 of the 4 trades (N=18,901; This is our population of interest)
  - Graphic Design
  - IT Repair
  - Tailor
  - Beauty Specialist

Who reports interest in Prosper?

Variable	N	(1) Interested Mean/(SE)	N	(2) Not interested Mean/(SE)	N	(1)-(2) Pairwise t-test Mean difference
Age	18901	25.123 (0.050)	8060	29.259 (0.077)	26961	-4.136***
Secondary education	18901	0.193 (0.003)	8060	0.144 (0.004)	26961	0.049***
HH income p.c.	18901	3806.020 (14.381)	8060	4019.560 (22.482)	26961	-213.539***
Female	18901	0.792 (0.003)	8060	0.462 (0.006)	26961	0.329***
Children	18901	1.048 (0.008)	8060	1.451 (0.014)	26961	-0.402***
Employed	18901	0.266 (0.003)	8060	0.600 (0.005)	26961	-0.334***
Reservation wage	12447	8433.775 (52.240)	4597	12505.483 (115.534)	17044	-4071.708***
Work experience	18901	31.661 (0.397)	8060	88.418 (0.982)	26961	-56.757***
Training experience	18901	35.133 (1.802)	8060	48.236 (4.874)	26961	-13.102***
Predicted employment	18901	0.336 (0.001)	8060	0.566 (0.003)	26961	-0.230***

* $p<0.1$, ** $p<0.05$, *** $p<0.01$. Sample includes all households surveyed at baseline who are eligible for training.

Preference elicitation

- We ask individuals to rank their interest in the 4 trades and whether they would be interested in training in their preferred trade at the following conditions:
  1. Full price
  2. 30 pct discount
  3. 70 pct discount
  4. Pay-if-employed: repay the full-price amount after finding a job (or after 12 months if still unemployed)
- Clear incentive not to under-report interest: only those who reported interest would be contacted about the program
- Soft incentive not to over-report: some over-reporting is likely.

Design

- ▶ We randomize treatment at the cluster (trade x branch pair) level.
- ▶ Each cluster is assigned to one of the four treatment conditions: full price, 30pct discount, 70 pct discount, PIE.
- ▶ In each cluster, after treatment assignment, we select from the census all individuals who are interested in the program at the assigned conditions (we call this the 'experimental sample', $N = 9194$).
- ▶ We randomly invite to the training program a share of individuals in the experimental sample.

Example: one trade, 2 treatments (PIE and full price), 2 branches
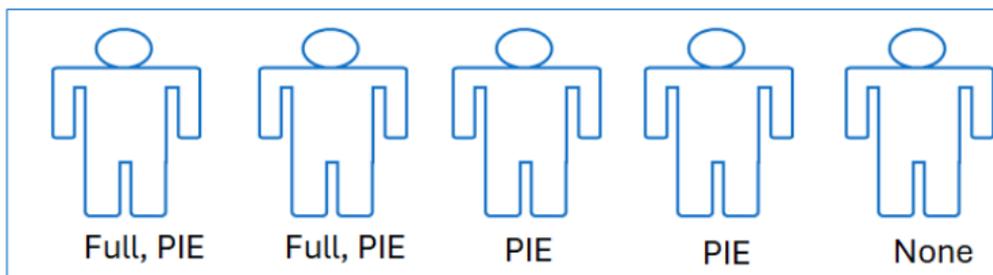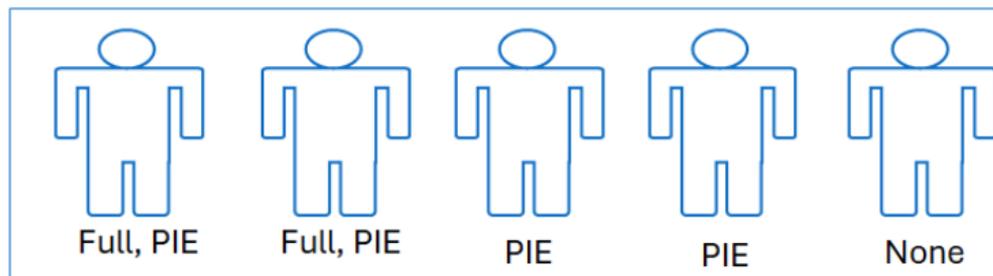
1. Randomly assign treatment at branch level

2. Select interested learners

Full price
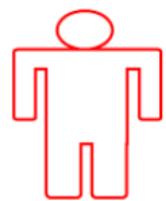
Interest: Full, PIE | Full, PIE | PIE | PIE | None

PIE
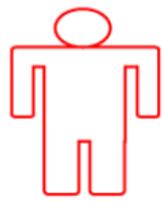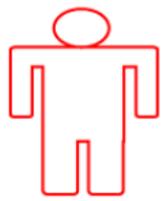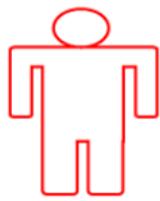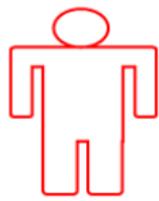
Interest: Full, PIE | Full, PIE | PIE | PIE | None

3. Randomize invite among interested learners

Experimental Design

Econometric specification

$$y_{ibtd} = \alpha + \sum_p \beta_p I(policy = p)_{bt} * offer_i + \theta_t + \gamma_d + X_i + u_{ibtd} \qquad (1)$$

y_{ibtd} is an outcome for individual i, in branch b, who is most interested in trade t and has 'demand profile' d.

$I(policy = p)_{bt}$ identifies clusters assigned to policy p. $offer_i$ individuals invited for treatment.

θ_t and γ_d are trade and demand-type dummies. X_i are covariates measured at baseline.

We collected data at baseline (December 2020), midline (January and September 2022) and endline (September 2023).

Balance and Attrition

Age — Overall balance p = 0.92

Secondary educ — Overall balance p = 0.76

HH income pc — Overall balance p = 0.23

Female — Overall balance p = 0.92

Children — Overall balance p = 0.92

Employed — Overall balance p = 0.54

Endline attrition — Overall balance p = 0.81

Full Price 30 pct discount 70 pct discount Pay if employed
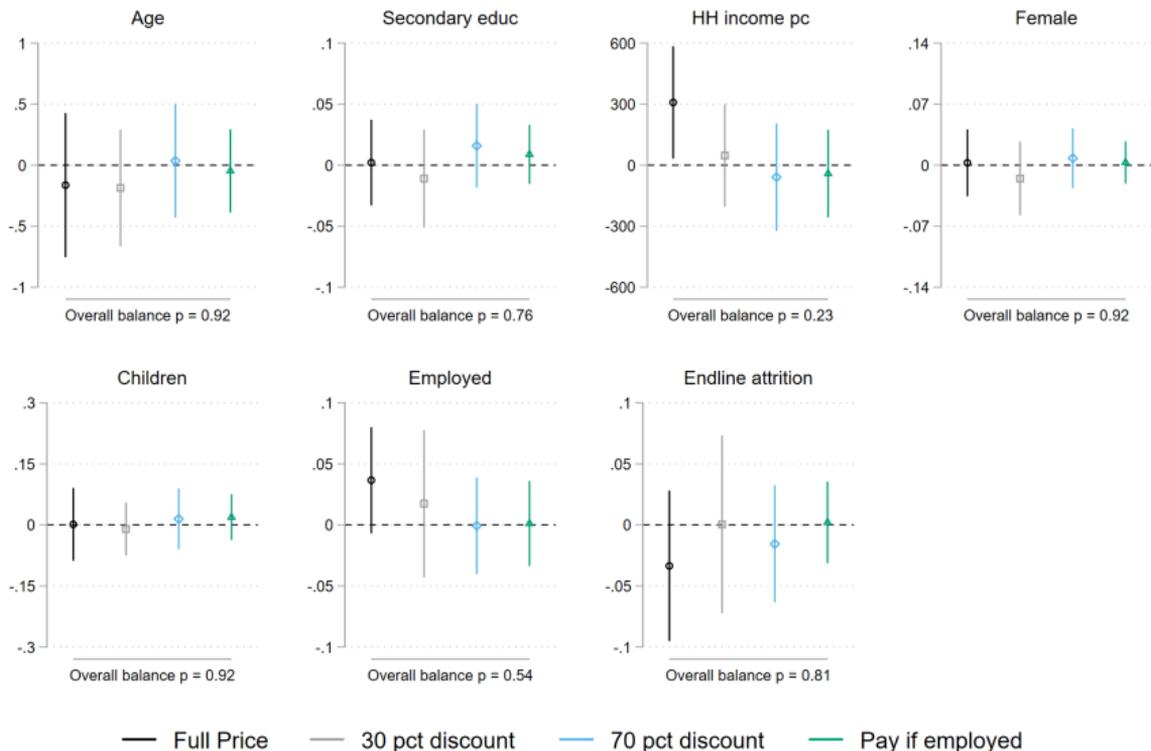
Table   Table (non-targeted)   Table (by treatment)

Roadmap

BRAC targeting

- ▶ Shortly after the end of the experiment, BRAC ran a new wave of Prosper.
- ▶ **They selected participants as usual (selection + persuasion)**. `Time Use`
- ▶ Minimal overlap with self-selection experiment, as they focused on different close-by neighborhoods than those we had (randomly) chosen for the experiment. `Map`
- ▶ We randomly assigned Branch x Trade pairs to either Full Price or (modified) Pay if Employed.
- ▶ No pure control group.

Selector CV ranking

- We invited the selectors to consider 20 real, anonymised CVs.

- Each CV was scored on 4 dimensions: likelihood of take-up, expected benefit, expected neediness, likelihood that they would repay their debt if offered PIE.

- Then they would pick 5 CVs out of 20 to invite for Prosper.

Prosper Applicant CV 12

Ideal trade: Tailoring (female)

Personal Information

- Gender: female
- Age: 25
- Marital status: currently or previously married
- Number of children: 1
- Household income per month: 7500 Taka
- Father's occupation type: low skill
- Mother's occupation type: never worked

Education and Work Experience

- Previous work experience: 0 months
- Previous vocational training: no
- Completed SSC/Dakhil: yes

Roadmap

Minimal repayment in PIE

Average share of fee repaid by learners in the pay-if-employed payment condition, by sample

Census sample   BRAC sample
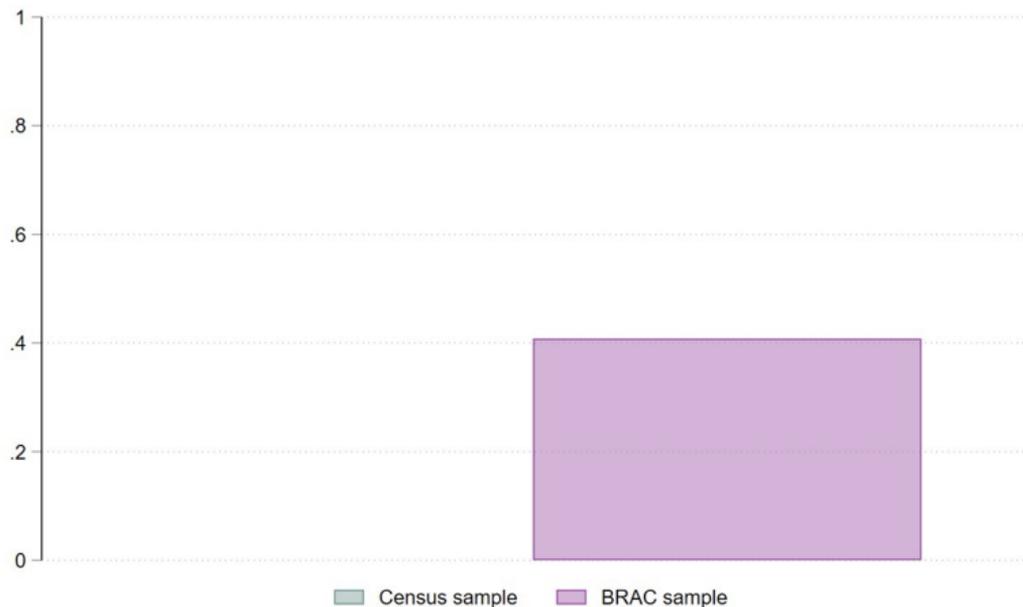
Moral hazard in reporting

Roadmap

Three questions

- ▶ Can full-price, non-targeted training reduce poverty?
- ▶ Can lower-cost training reduce poverty?
- ▶ Can targeted training reduce poverty?

Can full-price, non-targeted training reduce poverty?
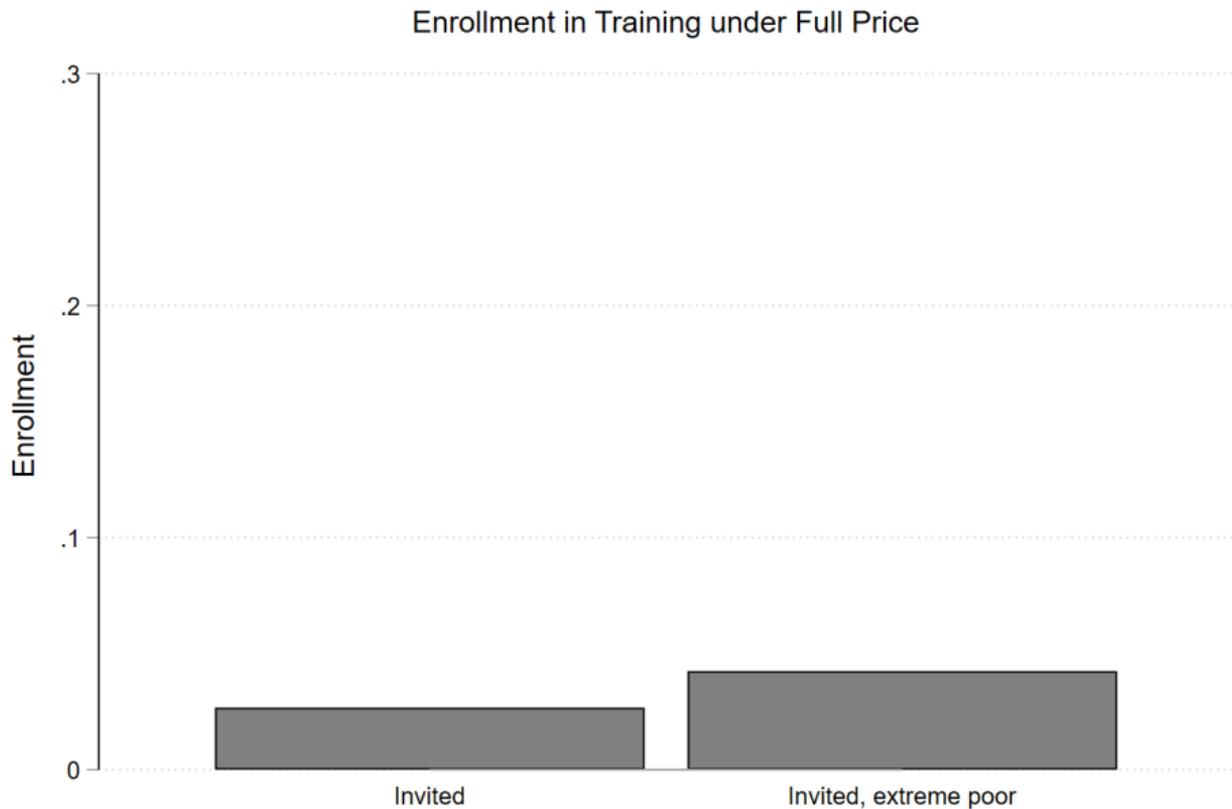
Enrollment in Training under Full Price

Roadmap

A simple model of selection into training

A continuum of risk-neutral individuals unit mass. Two dimensions of heterogeneity:

- ▶ The monetary benefit from training B.
    - ▶ Proxied by the present value of the treatment effect on earnings.

- ▶ An additive contingent cost C (i.e., not the fee).
    - ▶ Excess cost of liquidity;
    - ▶ Etc..

Assumptions:
- ▶ The total benefit from training is $B - C$
- ▶ $B \perp C$ (though a correlation may exist in some populations (Abebe et al. 2021))
- ▶ $B \sim N(\mu_B, \sigma_B^2)$, $C \sim U(0, \bar{c})$

The training fee is pd (p is the full fee and $d \in \{1, .7, .3\}$ is the discount).

Incomplete information case

- Individuals know their c.
- They observe an informative signal of their b: $\widehat{B}_1 = B + E1$ (Bandiera et al. 2024, Abebe et al. 2025)
    - $E1 \sim N(0, \sigma_{E1}^2)$
    - $E1 \perp B, E1 \perp C$
- Know the distribution of B in the population
- Can form belief $E[B|\widehat{B}_1 = \widehat{b}_1]$

- Take-up if $E[B|\widehat{B}_1 = \widehat{b}_1] - c > pd$

Complete information: the decision to take-up training

- Individuals know their c and their b.

- If offered the training, individual i takes it up if:

$$b - c \geq pd \qquad (2)$$

A graphical sketch
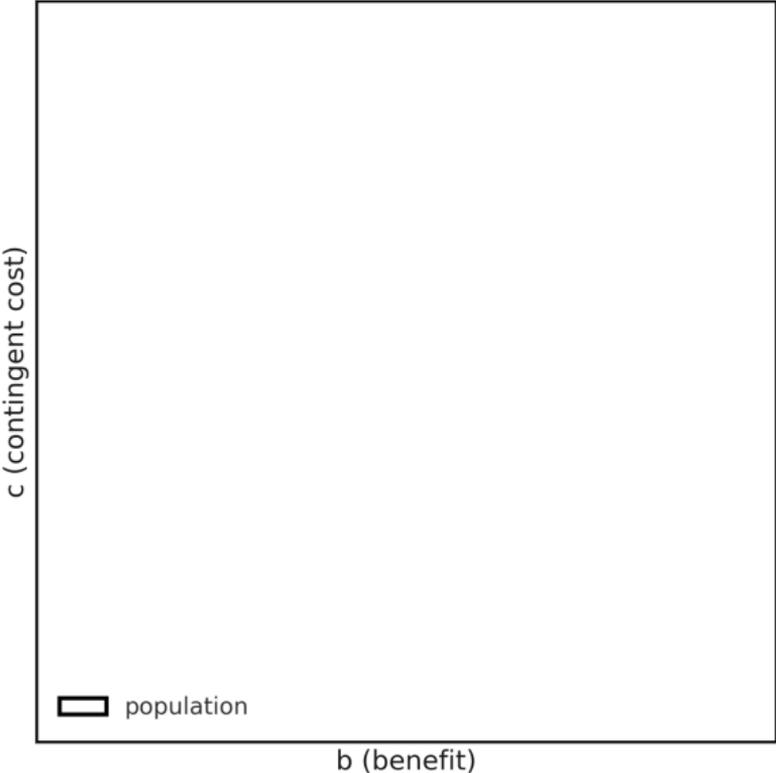
Invitations are not targeted

- population
- invited sample

c (contingent cost)
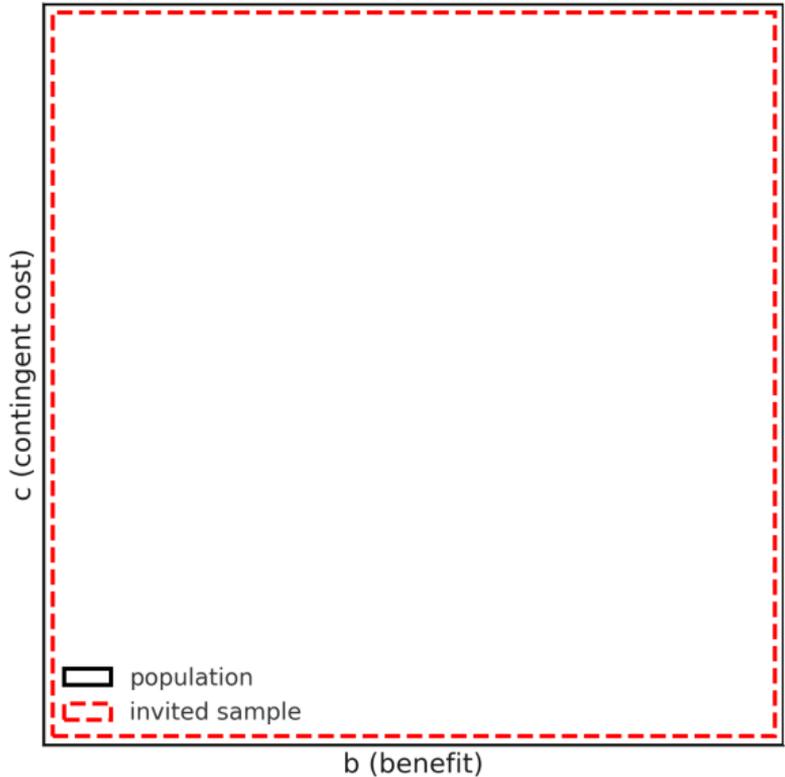
b (benefit)

The take-up decision: *low* cost (rich), and *high* benefit individuals take up
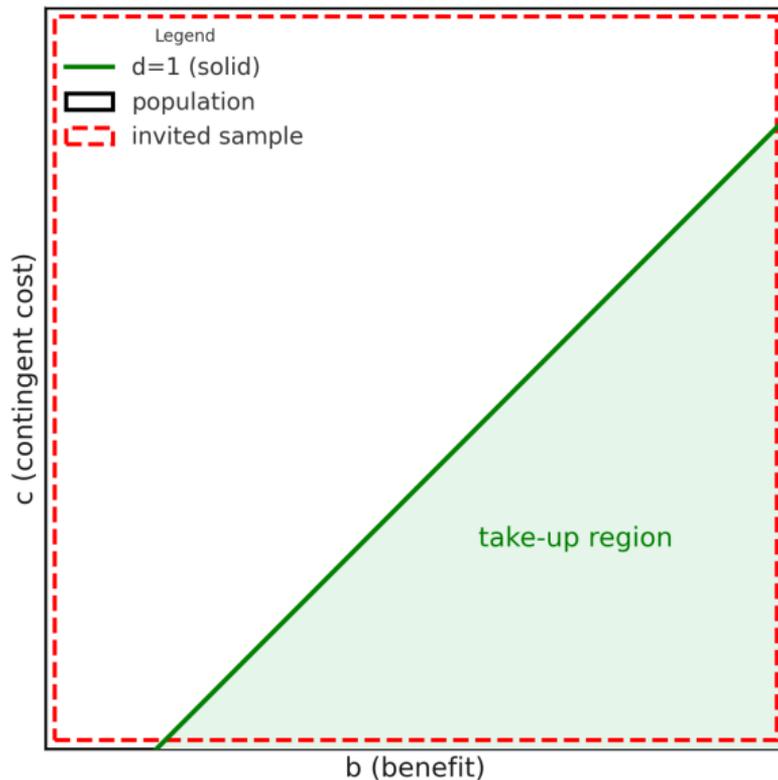
A discount raises take-up by attracting individuals who are *higher* cost (poorer) and *lower* benefits
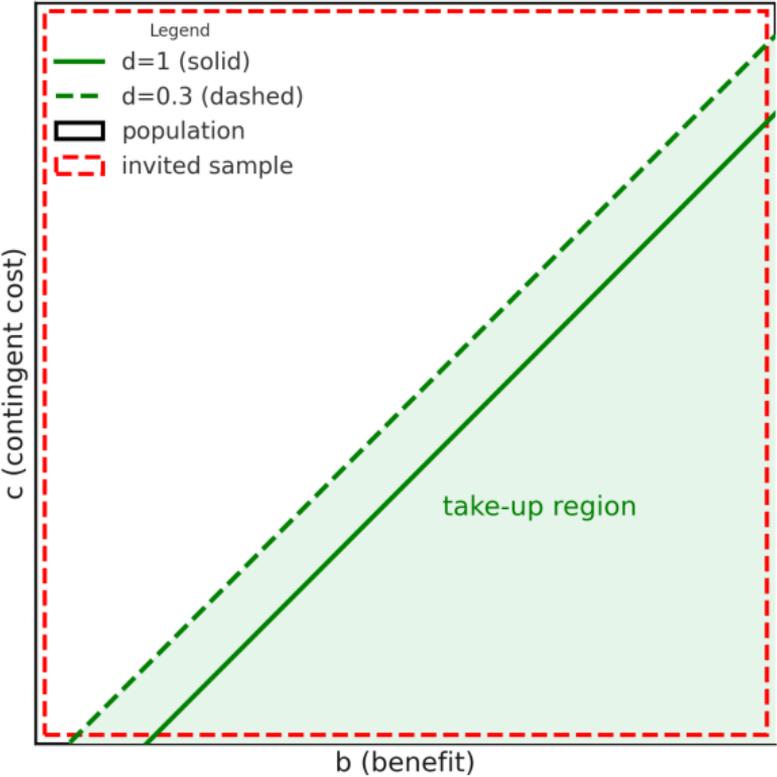
Do lower prices increase enrollment and completion?

Enrollment and completion increase sharply with the subsidy

Table: Treatment Effects on Training Enrollment and Completion by Price

	Enrolled (1)	Completed (2)
Full price	0.021	0.017
	(0.015)	(0.012)
Discount 30pct	0.051***	0.041***
	(0.014)	(0.010)
Discount 70pct	0.124***	0.113***
	(0.014)	(0.013)
Pay if employed	0.198***	0.133***
	(0.015)	(0.012)
p-value for equality of treatment effects:		
	0.000	0.000
Control mean	0.000	0.000
Observations	8,932	8,932
R-squared	0.106	0.081

Standard errors are clustered by branch-trade. The dependent variables are indicators for enrolment in training (column 1) and training completion (2).
*** p<0.01, ** p<0.05, * p<0.1

Completed Training
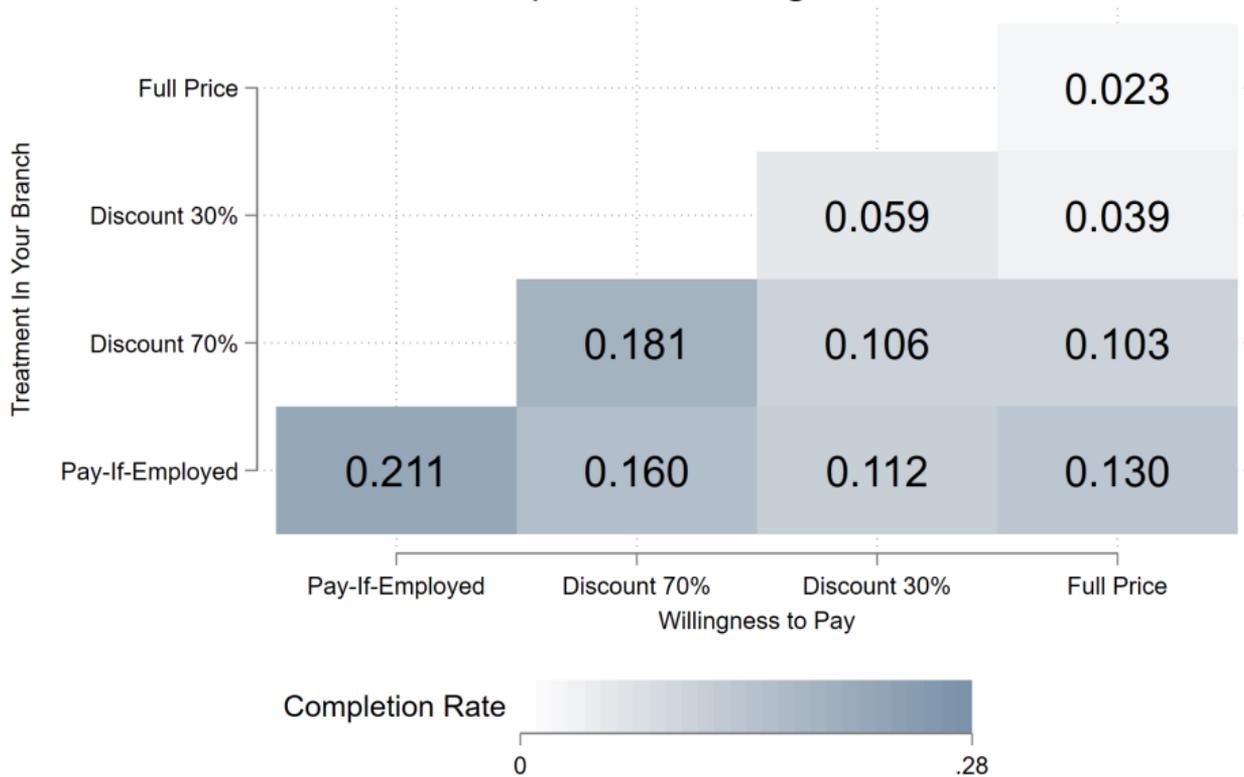
Do lower prices attract poorer individuals?

Lower prices attract individuals with lower household income

Average Household Income per capita by Willigness to Pay for Training

Household income per capita
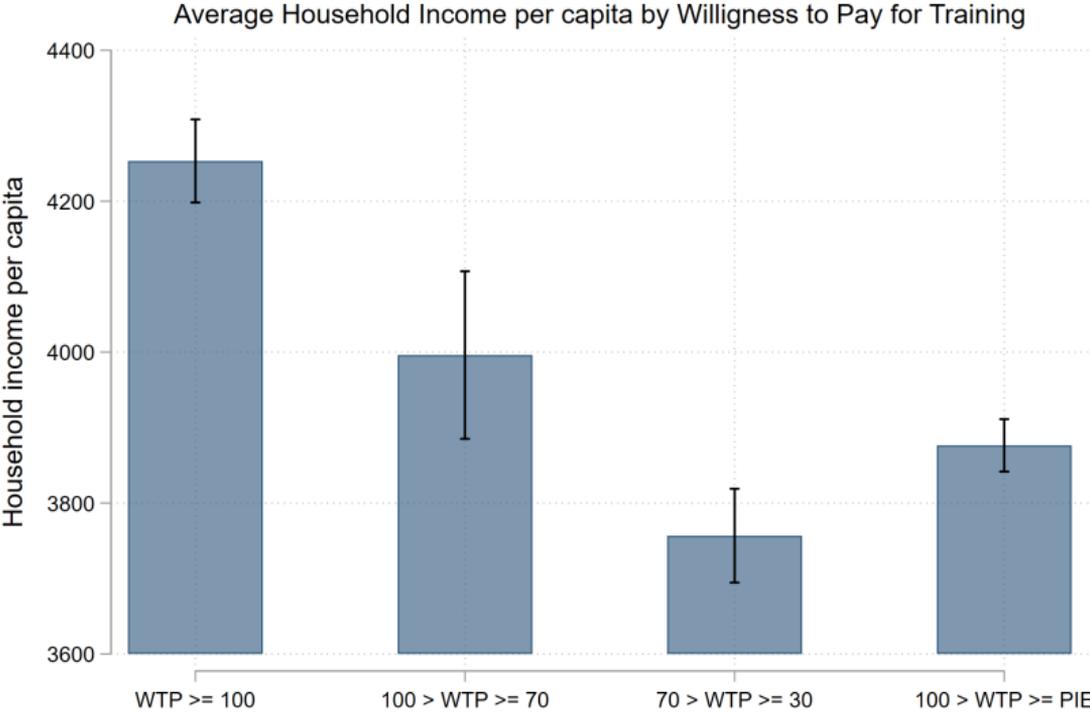
Lower prices attract individuals with higher rates of extreme poverty

Extreme Poverty by Willigness to Pay for Training
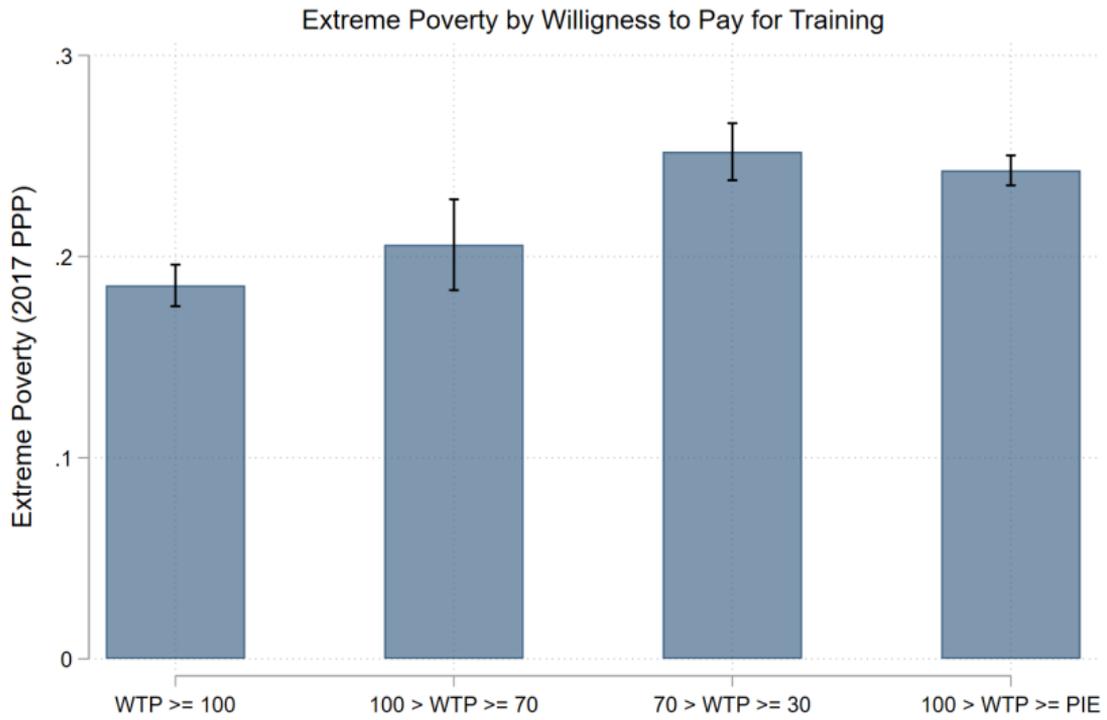
Baseline Household Income
Trainees only, Tk (thousands)

	Pay-If-Employed	Discount 70%	Discount 30%	Full Price
Full Price				4.847
Discount 30%			4.473	3.302
Discount 70%		3.250	2.811	4.022
Pay-If-Employed	3.363	3.958	3.935	4.296

Treatment In Your Branch (y-axis) — Willingness to Pay (x-axis)
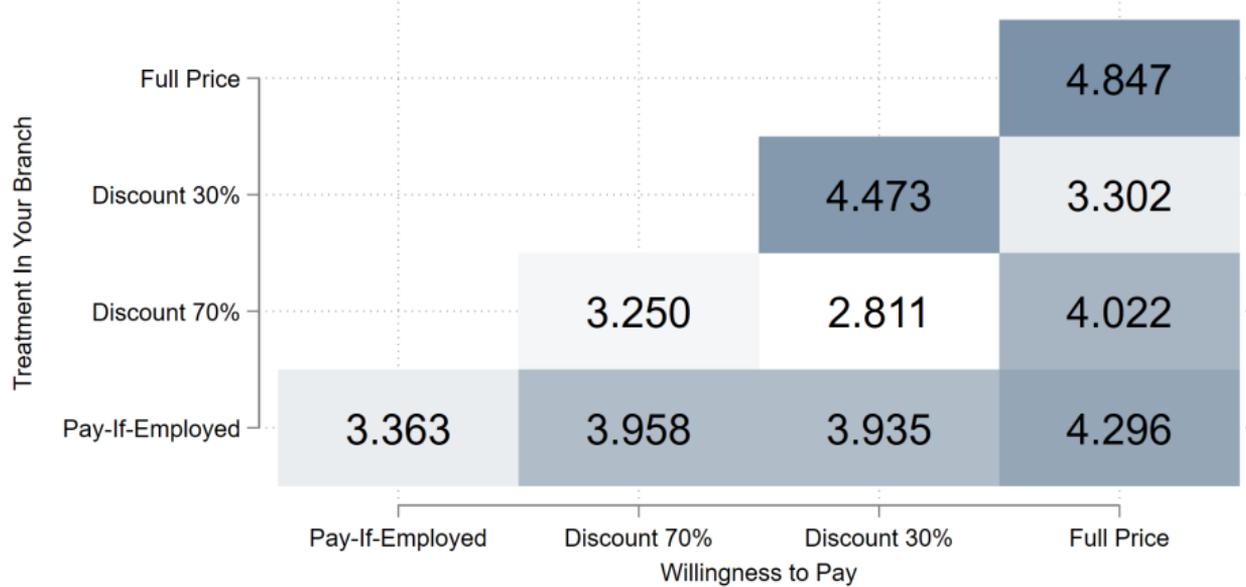
Baseline Household Income

2.8109   4.8469

Lower prices attract individuals with weaker employment prospects

Predicted Employment by Willigness to Pay for Training
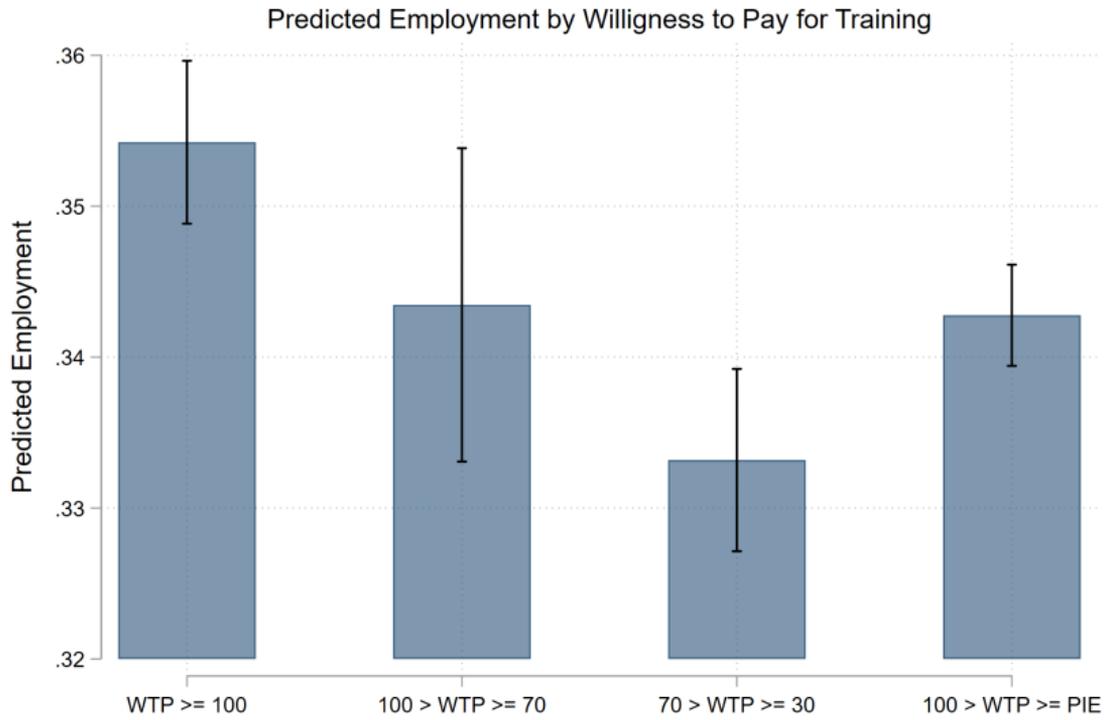
Table: Balance in Characteristics by Interest in Training - Full Price vs. 70 pct Discount

Variable	(1) 70 pct discount only N	Mean/(SE)	(2) Full Price and 70 pct discount N	Mean/(SE)	(1)-(2) Pairwise t-test N	Mean difference
Age	4840	24.707 (0.097)	5743	24.868 (0.088)	10583	-0.161
Secondary education	4840	0.199 (0.006)	5743	0.208 (0.005)	10583	-0.009
HH income p.c.	4840	3817.761 (27.741)	5743	4280.352 (27.648)	10583	-462.591***
Female	4840	0.793 (0.006)	5743	0.726 (0.006)	10583	0.067***
Children	4840	1.016 (0.016)	5743	0.971 (0.014)	10583	0.045**
Employed	4840	0.273 (0.006)	5743	0.274 (0.006)	10583	-0.001
Reservation wage	3335	8100.319 (97.628)	3669	9402.052 (105.766)	7004	-1301.734***
Work experience	4840	30.541 (0.756)	5743	31.771 (0.728)	10583	-1.230
Training experience	4840	33.506 (3.277)	5743	33.542 (3.050)	10583	-0.036
Predicted employment	4840	0.336 (0.003)	5743	0.354 (0.003)	10583	-0.018***

* p<0.1, ** p<0.05, *** p<0.01. Sample includes all households surveyed at baseline
who are interested in training under 70 pct discount.

PIE

Table: Balance in Characteristics by Interest in Training - Full Price vs. 30 pct Discount

| | | (1) 30 pct discount only | | (2) Full Price and 30 pct discount | | (1)-(2) Pairwise t-test |
Variable	N	Mean/(SE)	N	Mean/(SE)	N	Mean difference
Age	1234	24.448 (0.194)	5743	24.868 (0.088)	6977	-0.420**
Secondary education	1234	0.190 (0.011)	5743	0.208 (0.005)	6977	-0.017
HH income p.c.	1234	3996.059 (56.649)	5743	4280.352 (27.648)	6977	-284.293***
Female	1234	0.769 (0.012)	5743	0.726 (0.006)	6977	0.043***
Children	1234	0.954 (0.031)	5743	0.971 (0.014)	6977	-0.017
Employed	1234	0.280 (0.013)	5743	0.274 (0.006)	6977	0.006
Reservation wage	882	8215.985 (181.961)	3669	9402.052 (105.766)	4551	-1186.067***
Work experience	1234	30.502 (1.460)	5743	31.771 (0.728)	6977	-1.268
Training experience	1234	35.971 (9.211)	5743	33.542 (3.050)	6977	2.429
Predicted employment	1234	0.344 (0.005)	5743	0.354 (0.003)	6977	-0.011

* $p<0.1$, ** $p<0.05$, *** $p<0.01$. Sample includes all households surveyed at baseline
who are interested in training under 30 pct discount.

Table: Balance in Characteristics by Interest in Training - 30 pct vs. 70 pct Discount

Variable	(1) 70 pct discount only N	(1) Mean/(SE)	(2) 30 pct and 70 pct discount N	(2) Mean/(SE)	(1)-(2) Pairwise t-test N	(1)-(2) Mean difference
Age	3606	24.796 (0.112)	6977	24.793 (0.080)	10583	0.002
Secondary education	3606	0.202 (0.007)	6977	0.205 (0.005)	10583	-0.003
HH income p.c.	3606	3756.746 (31.731)	6977	4230.070 (24.898)	10583	-473.324***
Female	3606	0.801 (0.007)	6977	0.733 (0.005)	10583	0.068***
Children	3606	1.037 (0.019)	6977	0.968 (0.013)	10583	0.069***
Employed	3606	0.270 (0.007)	6977	0.275 (0.005)	10583	-0.005
Reservation wage	2453	8058.730 (115.496)	4551	9172.188 (92.526)	7004	-1113.459***
Work experience	3606	30.555 (0.883)	6977	31.547 (0.652)	10583	-0.992
Training experience	3606	32.662 (3.069)	6977	33.972 (2.992)	10583	-1.310
Predicted employment	3606	0.333 (0.003)	6977	0.352 (0.002)	10583	-0.019***

* p<0.1, ** p<0.05, *** p<0.01. Sample includes all households surveyed at baseline
who are interested in training under 70 pct discount.

Figure: Average Employment in the Control Group - Unemployed at Baseline
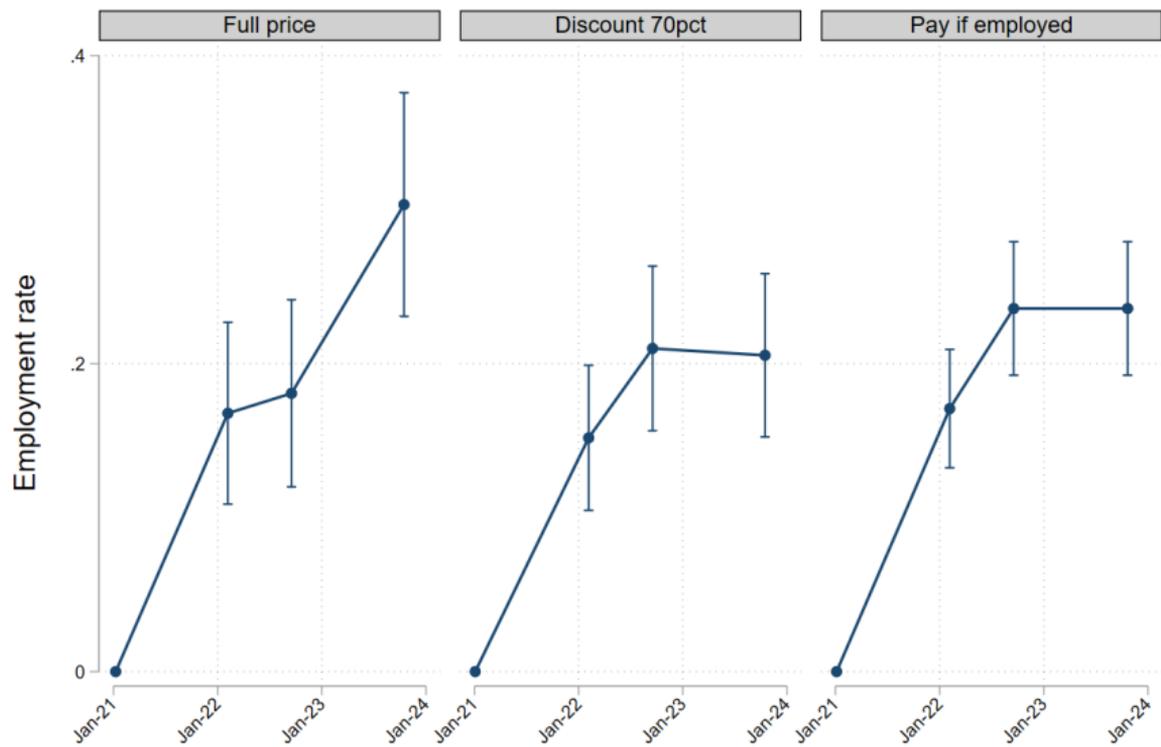
Do the poor benefit from the training?

No impacts on average employment

Table: Pooled Treatment Effects (Excluding Pay if Employed)

	Employed	Work hrs	Earnings
	(1)	(2)	(3)
Invited	0.005	1.104**	199.381
	(0.013)	(0.498)	(147.780)
Control mean	0.344	9.749	2532.997
Observations	4,744	4,744	4,744
R-squared	0.076	0.098	0.125

Standard errors are clustered by branch-trade. The dependent variables are an indicator for whether the respondent is currently employed in a salary/wage-based job (column 1), average weekly work hours over the past year (2) and average monthly earnings over the past year (3).
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Noisy impacts for individual treatments – though a pattern of lower returns at lower prices (NPV of about 4000 Tk for 70pct discount)

Table: Treatment Effects by Price

	Employed (1)	Work hrs (2)	Earnings (3)
Full price	0.031	2.084***	525.131**
	(0.020)	(0.717)	(224.802)
Discount 30pct	-0.015	0.564	43.397
	(0.022)	(0.810)	(196.833)
Discount 70pct	0.014	0.986*	164.240
	(0.013)	(0.587)	(170.314)
Pay if employed	-0.016	-0.717	-394.412**
	(0.017)	(0.677)	(174.890)
p-value for equality of treatment effects:			
	0.071	0.003	0.001
Endline control means by treatment:			
Full price	0.376	10.500	2711.955
Discount 30pct	0.409	13.238	3735.820
Discount 70pct	0.290	8.549	2156.150
Pay if employed	0.337	8.765	2202.736
Observations	6,802	6,802	6,802
R-squared	0.068	0.089	0.122

Standard errors are clustered by branch-trade. The dependent variables are an indicator for whether the respondent is currently employed in a salary/wage-based job (column 1), average weekly work hours over the past year (2) and average monthly earnings over the past year (3).
*** p<0.01, ** p<0.05, * p<0.1

There is significant heterogeneity in impacts
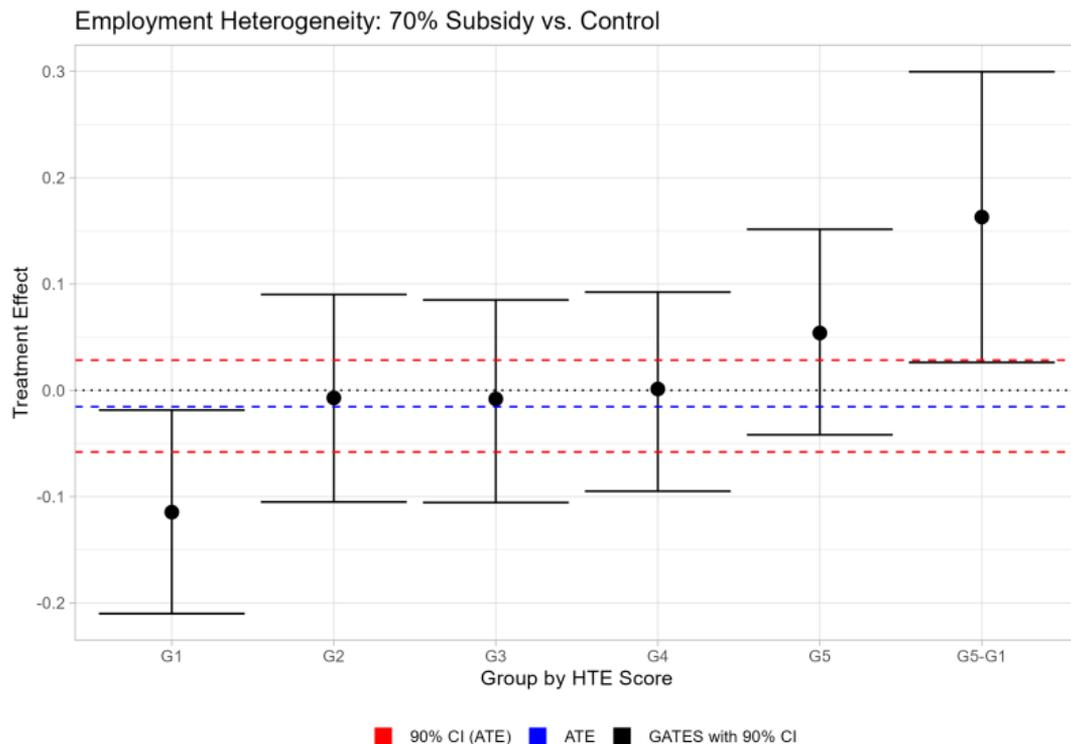
Employment Heterogeneity: 70% Subsidy vs. Control

Note: Analysis includes LASSO, K-nearest Neighbor, Elastic Net and Random Forest learners
with 100 sample splits. Using demand controls, rerandomization variables, CV variables

▸ Take-up   ▸ Earnings   ▸ Hours

Heterogeneity is predicted by socio-economic characteristics (not by treatment effect expectations)

Table: Quintile 5 - Quintile 1 Differences: Employment

Female	Age	Ever Married	Children	HH Head
-0.502***	-6.565***	-0.439***	-0.956***	-0.066***
(0.030)	(0.509)	(0.035)	(0.086)	(0.023)

Vocational Training	Work Experience	Employed
-0.138***	-78.016***	-0.804***
(0.031)	(4.129)	(0.023)

Table: Pooled Treatment Effects with Willingness to Pay Interaction

	Employed	Weekly work hrs	Monthly earnings
	(1)	(2)	(3)
Invited	0.013.	0.520.	-0.017.
	(0.018)	(0.604)	(0.184)
WTP < 100	0.011.	0.017.	-0.167.
	(0.026)	(1.002)	(0.285)
Invited $\times$ WTP < 100	-0.037.	-0.627.	-0.063.
	(0.030)	(1.013)	(0.301)
Control mean	0.344	9.749	2.533
Observations	6,675	6,675	6,675
R-squared	0.038	0.063	0.097

Standard errors are clustered by branch-trade. Earnings are measured in 1000 Tk. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

▶ By price

Can lower-cost training reduce poverty?

- No.
- Lower prices attract poorer respondents;
- But these respondents have low returns from training.

Roadmap

BRAC targets mostly on expected take-up

Table: Relationship between CV Selection and Scores

VARIABLES	(1) CV picked	(2) CV picked	(3) CV picked	(4) CV picked	(5) CV picked	(6) CV picked
Enrol score	0.08***					0.08***
	(0.02)					(0.02)
Benefit score		0.06***				-0.01
		(0.02)				(0.02)
Neediness score			0.01			-0.01
			(0.02)			(0.02)
Repay score				0.05**		0.02
				(0.02)		(0.02)
Desirability score					0.04***	
					(0.01)	
Observations	200	200	200	200	200	200
R-squared	0.110	0.045	0.002	0.028	0.092	0.115
Mean score	3.020	3.355	3.155	2.610	8.985	
SD score	1.710	1.591	1.607	1.406	3.760	

*p<.05; **p<.01; ***p<.001

A simple model of BRAC targeting

We assume that BRAC:

▶ Offers training to a limited number of individuals (a share q of the population), who choose whether to take up or not.

▶ Wants to maximise take-up among those invited.

▶ Observes C, but not B.

▶ Assumes individuals know their own b.

▶ Knows the distributions of B and observes an informative signal:
$$\widehat{B}_2 = B + E2 \tag{3}$$

    ▶ $E2 \sim N(0, \sigma_{E2}^2)$, $E2 \perp B$, $E2 \perp C$, $E2 \perp E1$

BRAC targeting and individual beliefs

- For every individual, BRAC can compute $K = Pr[B - c > pd | \widehat{B}_2 = \widehat{b}_2]$.
- To maximise take-up, BRAC invites $q$pct individuals with the highest value of K.
- Call $\underline{k}$ the lowest value of K among those invited.

- If invited by BRAC, individuals observe BRAC's signal of their b.
- They thus form revised belief $E[B | \widehat{B}_1 = \widehat{b}_1, \widehat{B}_2 = \widehat{b}_2]$
  - These beliefs are more precise than the original beliefs as long as BRAC's signal is informative.
- Take-up if $E[B | \widehat{B}_1 = \widehat{b}_1, \widehat{B}_2 = \widehat{b}_2] - c > pd$

Two forces

In this framework, BRAC changes the pool of trainees through two channels:

- Selectivity (when q is lower than take-up under no targeting).
- Information (when BRAC has valuable information on B).

Selectivity: BRAC targets *lower* cost and *higher* benefit individuals

Example: both individuals and BRAC have perfect information ($\sigma_{E1} = 0$, $\sigma_{E2} \approx 0$)
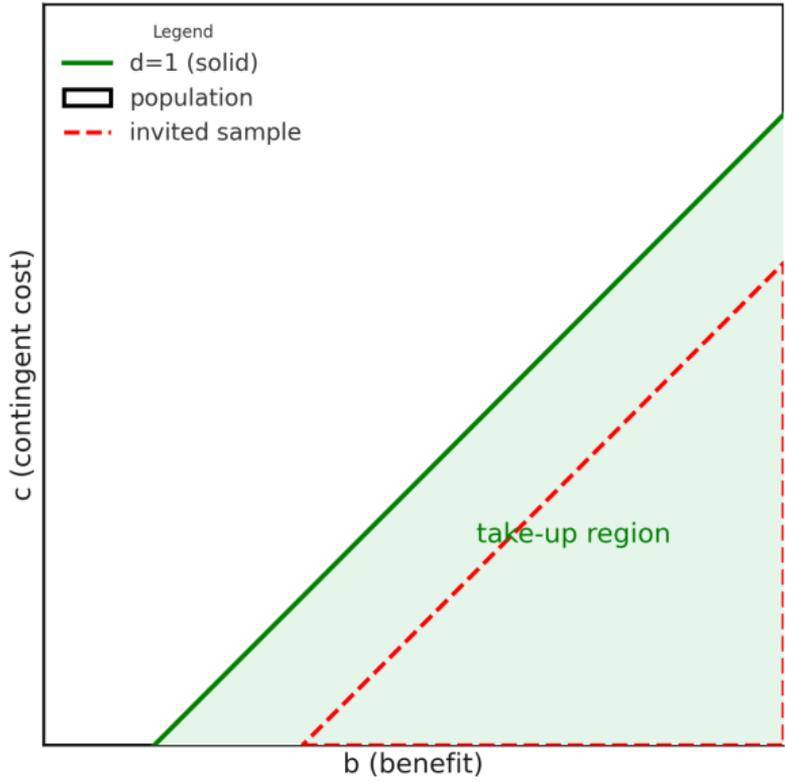
Selectivity: BRAC targets *lower* cost and *higher* benefit individuals

Example: both individuals and BRAC have perfect information ($\sigma_{E1} = 0$, $\sigma_{E2} \approx 0$)
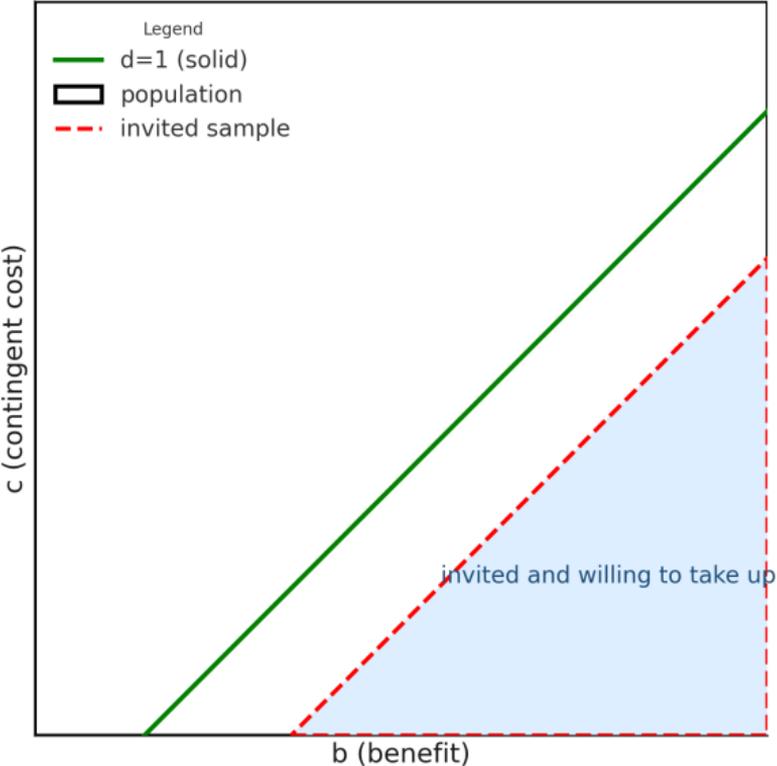
Information: BRAC selects *higher* cost and *higher* benefit individuals

Example: individuals have no information on B, while BRAC has perfect information ($\sigma_{E1} \approx \infty$, $\sigma_{E2} \approx 0$)
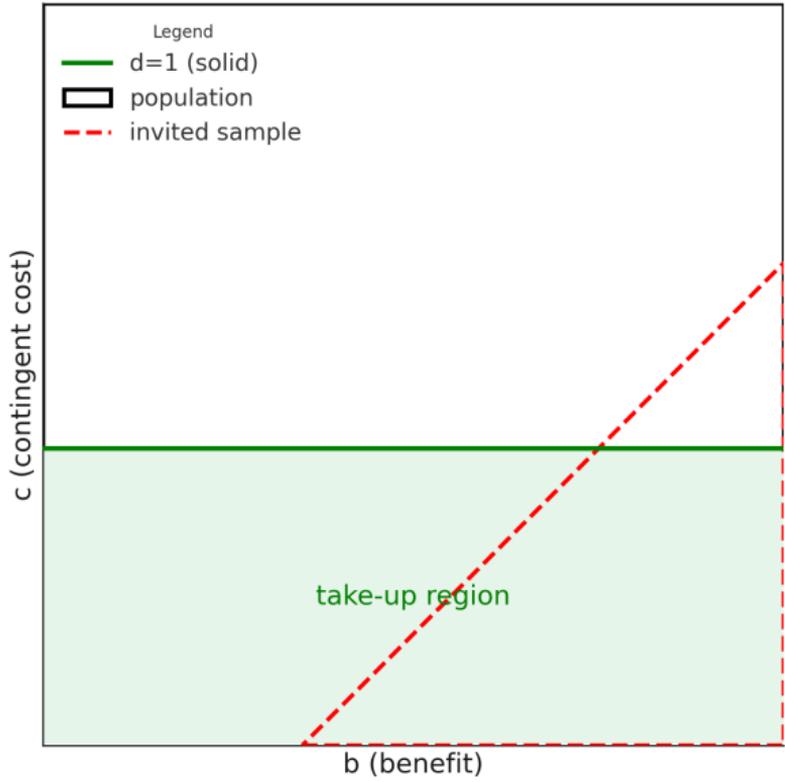
Information: BRAC selects *higher* cost and *higher* benefit individuals

Invited individuals learn their b from BRAC

Legend
- d=1 (solid)
- population
- invited sample

c (contingent cost)

new take up region
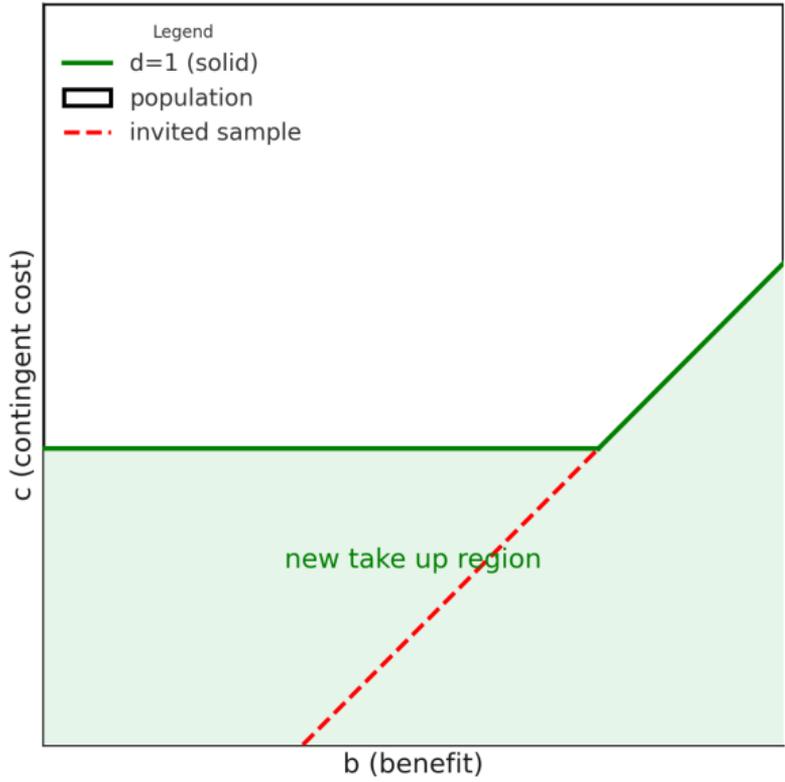
b (benefit)

Information: BRAC selects *higher* cost and *higher* benefit individuals

Invited individuals learn their b from BRAC
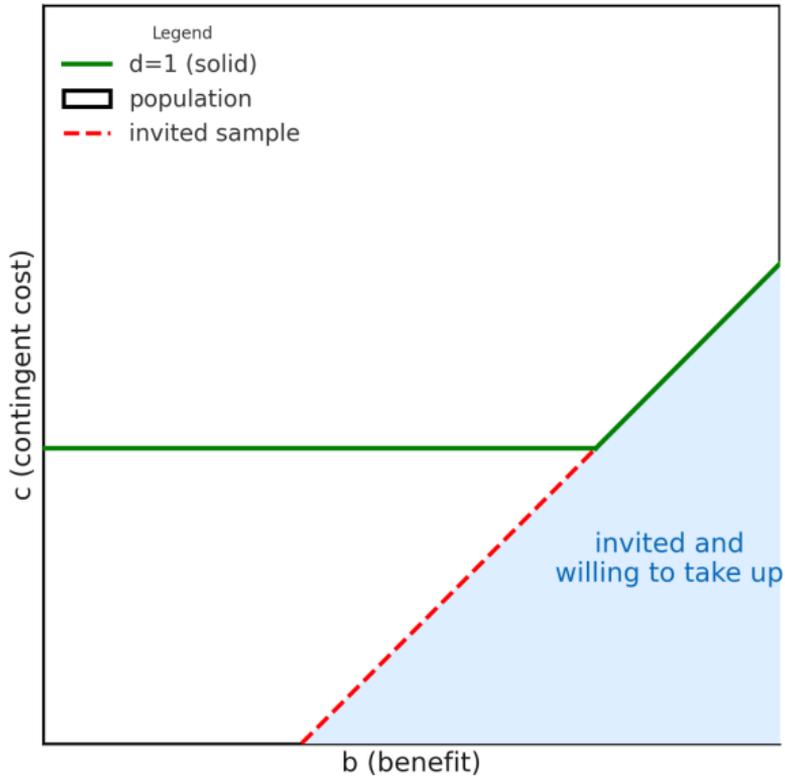
Who gets trained when BRAC targets program selection?

BRAC targets better off individuals

Table: Baseline Characteristics in BRAC vs. Experimental Samples - Enrolled in Training at Full Price

Variable	N	(1) BRAC Mean/(SE)	N	(2) Experimental Mean/(SE)	N	(1)-(2) Pairwise t-test Mean difference
Age	390	23.100 (0.315)	33	20.939 (1.032)	423	2.161*
Secondary education	390	0.282 (0.023)	33	0.212 (0.072)	423	0.070
HH income p.c.	390	5842.322 (209.854)	33	4289.364 (359.484)	423	1552.957**
Female	390	0.485 (0.025)	33	0.848 (0.063)	423	-0.364***
Children	390	0.321 (0.037)	33	0.515 (0.145)	423	-0.195
Employed	390	0.318 (0.024)	33	0.121 (0.058)	423	0.197**
Reservation wage	390	15045.641 (507.608)	19	10168.421 (1670.348)	409	4877.220**
Work experience	390	22.295 (2.279)	33	15.303 (7.643)	423	6.992
Training experience	390	43.721 (6.462)	33	8.030 (4.192)	423	35.690
Predicted employment	390	0.410 (0.011)	33	0.260 (0.027)	423	0.150***

* $p<0.1$, ** $p<0.05$, *** $p<0.01$.

Take-up is higher

Table: Treatment Effects on Training Enrollment and Completion by Price

	Unweighted		Weighted	
	Enrolled (1)	Completed (2)	Enrolled (3)	Completed (4)
Full price	0.021	0.017	0.044**	0.032**
	(0.015)	(0.012)	(0.019)	(0.016)
Discount 30pct	0.051***	0.041***	0.075***	0.058***
	(0.014)	(0.010)	(0.018)	(0.014)
Discount 70pct	0.124***	0.113***	0.203***	0.191***
	(0.014)	(0.013)	(0.022)	(0.020)
Pay if employed	0.198***	0.133***	0.288***	0.219***
	(0.015)	(0.012)	(0.023)	(0.022)
p-value for equality of treatment effects:				
	0.000	0.000	0.000	0.000
Control mean	0.000	0.000	0.000	0.000
Observations	8,932	8,932	6,802	6,802
R-squared	0.106	0.081	0.159	0.136

Standard errors are clustered by branch-trade. The dependent variables are indicators for enrolment in training (columns 1 and 3) and training completion (2 and 4).
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

What are the returns to training for those that BRAC selects?

Larger treatment effects

Table: Pooled Treatment Effects (Excluding Pay if Employed)

	Unweighted			Weighted		
	Employed (1)	Work hrs (2)	Earnings (3)	Employed (4)	Work hrs (5)	Earnings (6)
Invited	0.005	1.104**	199.381	0.040*	2.721***	395.200
	(0.013)	(0.498)	(147.780)	(0.021)	(0.730)	(278.620)
Control mean	0.344	9.749	2532.997	0.385	11.037	3295.039
Observations	4,744	4,744	4,744	4,744	4,744	4,744
R-squared	0.076	0.098	0.125	0.070	0.080	0.092

Standard errors are clustered by branch-trade. The dependent variables are an indicator for whether the respondent is currently employed in a salary/wage-based job (columns 1 and 4), average weekly work hours over the past year (2 and 5) and average monthly earnings over the past year (3 and 6).
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

	Unweighted			Weighted		
	Employed (1)	Work hrs (2)	Earnings (3)	Employed (4)	Work hrs (5)	Earnings (6)
Full price	0.031	2.084***	525.131**	0.067**	3.868***	594.010*
	(0.020)	(0.717)	(224.802)	(0.029)	(1.012)	(355.671)
Discount 30pct	-0.015	0.564	43.397	-0.028	0.514	-467.963
	(0.022)	(0.810)	(196.833)	(0.027)	(0.987)	(346.320)
Discount 70pct	0.014	0.986*	164.240	0.091***	4.676***	921.218**
	(0.013)	(0.587)	(170.314)	(0.031)	(0.967)	(374.004)
Pay if employed	-0.016	-0.717	-394.412**	-0.004	-0.296	-570.986**
	(0.017)	(0.677)	(174.890)	(0.027)	(0.971)	(271.994)
p-value for equality of treatment effects:						
	0.071	0.003	0.001	0.000	0.000	0.000
Endline control means by treatment:						
Full price	0.376	10.500	2711.955	0.403	9.841	3303.121
Discount 30pct	0.409	13.238	3735.820	0.426	12.976	4117.964
Discount 70pct	0.290	8.549	2156.150	0.413	13.308	3884.266
Pay if employed	0.337	8.765	2202.736	0.361	10.710	3033.444
Observations	6,802	6,802	6,802	6,802	6,802	6,802
R-squared	0.068	0.089	0.122	0.053	0.074	0.087

Standard errors are clustered by branch-trade. The dependent variables are an indicator for whether the respondent is currently employed in a salary/wage-based job (columns 1 and 4), average weekly work hours over the past year (2 and 5) and average monthly earnings over the past year (3 and 6).
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Can NGO-targeted training reduce poverty?

- No.
- Targeting selects individuals with higher returns;
- But these individuals are not poor.

Roadmap

BRAC targeting becomes more pro-poor under PIE

Table: Baseline Characteristics in Full Price vs. Pay-if-employed - BRAC Sample

Variable	N	(1) Pay-if-employed Mean/(SE)	N	(2) Full Price Mean/(SE)	N	(1)-(2) Pairwise t-test Mean difference
Age	765	22.229 (0.235)	390	23.100 (0.315)	1155	-0.871**
Secondary education	765	0.280 (0.016)	390	0.282 (0.023)	1155	-0.002
HH income p.c.	765	4948.565 (160.001)	390	5842.322 (209.854)	1155	-893.757***
Female	765	0.488 (0.018)	390	0.485 (0.025)	1155	0.003
Children	765	0.333 (0.028)	390	0.321 (0.037)	1155	0.013
Employed	765	0.263 (0.016)	390	0.318 (0.024)	1155	-0.055**
Reservation wage	765	12467.974 (352.864)	390	15045.641 (507.608)	1155	-2577.667***
Work experience	765	17.240 (1.383)	390	22.295 (2.279)	1155	-5.055**
Training experience	765	23.366 (2.834)	390	43.721 (6.462)	1155	-20.354***
Predicted employment	765	0.394 (0.007)	390	0.410 (0.011)	1155	-0.016

* $p<0.1$, ** $p<0.05$, *** $p<0.01$.

Not as pro-poor as the experimental PIE sample

Table: Baseline Characteristics in BRAC vs. Experimental Samples - Enrolled in Training at Pay-if-employed

Variable	N	(1) BRAC Mean/(SE)	N	(2) Experimental Mean/(SE)	N	(1)-(2) Pairwise t-test Mean difference
Age	765	22.229 (0.235)	528	22.970 (0.270)	1293	-0.741**
Secondary education	765	0.280 (0.016)	528	0.225 (0.018)	1293	0.054**
HH income p.c.	765	4948.565 (160.001)	528	3890.172 (90.311)	1293	1058.393***
Female	765	0.488 (0.018)	528	0.661 (0.021)	1293	-0.173***
Children	765	0.333 (0.028)	528	0.672 (0.043)	1293	-0.339***
Employed	765	0.263 (0.016)	528	0.250 (0.019)	1293	0.013
Reservation wage	765	12467.974 (352.864)	373	9279.893 (330.736)	1138	3188.081***
Work experience	765	17.240 (1.383)	528	23.801 (1.981)	1293	-6.561***
Training experience	765	23.366 (2.834)	528	37.428 (6.474)	1293	-14.062**
Predicted employment	765	0.394 (0.007)	528	0.355 (0.008)	1293	0.039***

* $p<0.1$, ** $p<0.05$, *** $p<0.01$.

Yet, BRAC is able to attract people that are likely to have higher returns

Table: Training Outcomes in BRAC vs. Experimental Samples - Pay if Employed

Variable	N	(1) BRAC Mean/(SE)	N	(2) Experimental Mean/(SE)	N	(1)-(2) Pairwise t-test Mean difference
Hard skills learnt	498	7.564 (0.104)	234	6.085 (0.183)	732	1.479***
Soft skills learnt	498	8.384 (0.092)	234	7.137 (0.181)	732	1.247***
Received owner lessons	498	0.906 (0.013)	234	0.671 (0.031)	732	0.235***
Shadowed	498	0.795 (0.018)	234	0.620 (0.032)	732	0.176***
Produced output	498	0.586 (0.022)	234	0.444 (0.033)	732	0.142**

* p<0.1, ** p<0.05, *** p<0.01.

Balance table

Next steps: How many high B, high C individuals are excluded from training? How we can best reach them?

We want to estimate:
- μ_B, σ_B, $\bar{c}$
- σ_{E1}, σ_{E2}
- q

We will use the following moments for estimation
- $Pr[Takeup = 1]$ (x3 values of d=1 , .7, .3)
- $E[B|Takeup = 1]$
- $Pr[Takeup = 1|K > \underline{k}]$
- $E[B|K > \underline{k}, Takeup = 1]$
- ... and a moment capturing worker beliefs

Roadmap

► Can non-targeted, full-price training reduce poverty?

- Can non-targeted, full-price training reduce poverty? No
- Can lower-price training reduce poverty?

- Can non-targeted, full-price training reduce poverty? No
- Can lower-price training reduce poverty? No
- Can NGO-targeted training reduce poverty?

- ▶ Can non-targeted, full-price training reduce poverty? No
- ▶ Can lower-price training reduce poverty? No
- ▶ Can NGO-targeted training reduce poverty? No

- ▶ Combining discounts and targeting seems most promising;
- ▶ Also, we may get further traction by correcting inaccurate mental model of the human capital production function.
  - ▶ 67% (100%) of learners (selectors) wrongly believe that benefits are higher for more experienced workers.

Thank You!

Table: Balance by Baseline Characteristics

	Full price	30% discount	70% discount	Pay-if-employed	Control	N	Imbalance (p)
			Mean and Standard Deviation				

A. Targeted Variables

	Full price	30% discount	70% discount	Pay-if-employed	Control	N	Imbalance (p)
Female	0.74	0.67	0.84	0.73	0.74	9192	0.93
	(0.44)	(0.47)	(0.37)	(0.44)	(0.44)		
Age	24.91	23.96	25.40	24.67	24.80	9194	0.74
	(6.78)	(6.40)	(6.84)	(6.82)	(6.81)		
Migrant status	0.41	0.33	0.31	0.28	0.32	9194	0.75
	(0.49)	(0.47)	(0.46)	(0.45)	(0.47)		
Number of children	1.54	1.45	1.54	1.54	1.47	5944	0.67
	(1.02)	(1.00)	(1.02)	(1.02)	(1.05)		
Age of youngest child	4.22	3.66	4.25	4.09	4.03	5011	0.35
	(4.01)	(3.61)	(3.98)	(3.88)	(3.98)		
HH head	0.10	0.09	0.09	0.08	0.10	9194	0.47
	(0.30)	(0.28)	(0.28)	(0.27)	(0.29)		
Secondary education	0.21	0.21	0.21	0.20	0.20	9194	0.64
	(0.40)	(0.41)	(0.40)	(0.40)	(0.40)		
Work experience	0.47	0.52	0.44	0.46	0.46	9194	0.36
	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)		
In work	0.29	0.30	0.24	0.27	0.26	9194	0.56
	(0.46)	(0.46)	(0.43)	(0.44)	(0.44)		
Training	0.22	0.22	0.22	0.24	0.22	9194	0.72
	(0.41)	(0.41)	(0.41)	(0.43)	(0.42)		
Liquidity	0.39	0.34	0.25	0.18	0.25	9194	0.40
	(0.49)	(0.47)	(0.43)	(0.39)	(0.43)		
Expected wage gain	0.50	0.52	0.44	0.44	0.46	5308	0.86
	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)		

Overall balance (p): 0.87
Total Obs: 9,194

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Table: Balance by Baseline Characteristics

	Full price	30% discount	70% discount	Pay-if-employed	Control	N	Imbalance (p)
			Mean and Standard Deviation				
B. Non-Targeted Variables							
Student	0.29	0.37	0.25	0.33	0.32	9194	0.69
	(0.45)	(0.48)	(0.43)	(0.47)	(0.47)		
Self-employed	0.08	0.11	0.12	0.11	0.10	9194	0.10
	(0.28)	(0.31)	(0.32)	(0.31)	(0.29)		
Self-employed Nov 19	0.09	0.10	0.10	0.10	0.09	9194	0.23
	(0.29)	(0.30)	(0.30)	(0.30)	(0.28)		
Earnings	2085.51	1884.38	1169.73	1348.16	1507.09	9194	0.35
	(4744.89)	(4445.59)	(3486.31)	(3775.64)	(3883.98)		
Earnings Nov 19	2648.89	2351.32	1754.95	1716.17	1914.80	9194	0.18
	(5881.94)	(5223.48)	(4614.33)	(4673.23)	(4695.65)		
Aspired earnings	15858.43	17687.43	13518.27	15143.06	15656.89	9194	0.92
	(21275.92)	(16158.48)	(12860.92)	(15098.61)	(18494.54)		
Expected job search length change	-1.77	-2.28	-2.04	-2.00	-2.01	6113	0.83
	(2.94)	(3.12)	(2.98)	(2.96)	(3.10)		

Overall balance (p): 0.87
Total Obs: 9,194

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Table: Balance by Treatment - Full Price

Variable	(1) Invited N/Clusters	(1) Invited Mean/(SE)	(2) Not invited N/Clusters	(2) Not invited Mean/(SE)	(1)-(2) Pairwise t-test N/Clusters	(1)-(2) Pairwise t-test Mean difference
Age	1234 30	24.908 (0.458)	382 29	24.183 (0.489)	1532 30	0.725***
Secondary education	1234 30	0.206 (0.026)	382 29	0.194 (0.032)	1532 30	0.012
HH income p.c.	1234 30	4493.633 (125.945)	382 29	4475.672 (166.495)	1532 30	17.961
Female	1234 30	0.742 (0.059)	382 29	0.777 (0.054)	1532 30	-0.035*
Children	1234 30	0.994 (0.112)	382 29	0.950 (0.135)	1532 30	0.043*
Employed	1234 30	0.293 (0.025)	382 29	0.246 (0.031)	1532 30	0.046*
Reservation wage	785 30	9274.369 (718.267)	232 29	9237.500 (804.611)	961 30	36.869
Work experience	1234 30	34.199 (3.315)	382 29	28.950 (4.114)	1532 30	5.248*
Training experience	1234 30	26.210 (4.082)	382 29	26.194 (7.977)	1532 30	0.016
Predicted employment	1234 30	0.355 (0.021)	382 29	0.331 (0.020)	1532 30	0.025**

* $p<0.1$, ** $p<0.05$, *** $p<0.01$.

Table: Balance by Treatment - Discount 30pct

Variable	(1) Invited N/Clusters	(1) Invited Mean/(SE)	(2) Not invited N/Clusters	(2) Not invited Mean/(SE)	(1)-(2) Pairwise t-test N/Clusters	(1)-(2) Pairwise t-test Mean difference
Age	1146 30	23.957 (0.594)	385 30	23.816 (0.731)	1458 30	0.142
Secondary education	1146 30	0.213 (0.031)	385 30	0.236 (0.028)	1458 30	-0.023
HH income p.c.	1146 30	4222.877 (128.169)	385 30	4334.467 (191.770)	1458 30	-111.590
Female	1146 30	0.673 (0.074)	385 30	0.636 (0.071)	1458 30	0.036
Children	1146 30	0.816 (0.146)	385 30	0.766 (0.172)	1458 30	0.050
Employed	1146 30	0.297 (0.029)	385 30	0.322 (0.034)	1458 30	-0.025
Reservation wage	737 30	10485.617 (1050.068)	249 30	9877.912 (795.669)	930 30	607.706*
Work experience	1146 30	33.163 (2.657)	385 30	30.582 (3.179)	1458 30	2.581
Training experience	1146 30	28.555 (5.356)	385 30	42.800 (12.265)	1458 30	-14.245
Predicted employment	1146 30	0.374 (0.021)	385 30	0.386 (0.025)	1458 30	-0.012

* $p<0.1$, ** $p<0.05$, *** $p<0.01$.

Table: Balance by Treatment - Discount 70pct

Variable	(1) Invited N/Clusters	(1) Invited Mean/(SE)	(2) Not invited N/Clusters	(2) Not invited Mean/(SE)	(1)-(2) Pairwise t-test N/Clusters	(1)-(2) Pairwise t-test Mean difference
Age	1910 30	25.399 (0.510)	568 30	25.518 (0.658)	2373 30	-0.119
Secondary education	1910 30	0.206 (0.014)	568 30	0.208 (0.019)	2373 30	-0.002
HH income p.c.	1910 30	3930.224 (126.157)	568 30	4037.297 (112.442)	2373 30	-107.073
Female	1910 30	0.840 (0.041)	568 30	0.790 (0.059)	2373 30	0.049
Children	1910 30	1.130 (0.099)	568 30	1.004 (0.118)	2373 30	0.126*
Employed	1910 30	0.242 (0.023)	568 30	0.246 (0.026)	2373 30	-0.005
Reservation wage	1259 30	8097.497 (514.881)	390 30	8493.590 (539.316)	1562 30	-396.093
Work experience	1910 30	28.243 (2.422)	568 30	31.060 (3.177)	2373 30	-2.817
Training experience	1910 30	36.150 (7.054)	568 30	41.231 (10.187)	2373 30	-5.080
Predicted employment	1910 30	0.314 (0.016)	568 30	0.331 (0.023)	2373 30	-0.018

* p<0.1, ** p<0.05, *** p<0.01.

Table: Balance by Treatment - Pay if Employed

	(1) Invited		(2) Not invited		(1)-(2) Pairwise t-test	
Variable	N/Clusters	Mean/(SE)	N/Clusters	Mean/(SE)	N/Clusters	Mean difference
Age	2680	24.674	889	25.040	3569	-0.366
	30	(0.581)	30	(0.675)	30	
Secondary education	2680	0.204	889	0.186	3569	0.018
	30	(0.016)	30	(0.019)	30	
HH income p.c.	2680	3873.820	889	3791.520	3569	82.299
	30	(157.403)	30	(162.774)	30	
Female	2680	0.730	889	0.730	3569	-0.000
	30	(0.062)	30	(0.066)	30	
Children	2680	0.953	889	1.006	3569	-0.052
	30	(0.127)	30	(0.139)	30	
Employed	2680	0.265	889	0.260	3569	0.005
	30	(0.020)	30	(0.022)	30	
Reservation wage	1801	8420.913	614	8297.883	2415	123.030
	30	(762.537)	30	(648.647)	30	
Work experience	2680	31.022	889	31.661	3569	-0.639
	30	(2.763)	30	(3.945)	30	
Training experience	2680	43.440	889	24.918	3569	18.522***
	30	(6.232)	30	(3.364)	30	
Predicted employment	2680	0.353	889	0.351	3569	0.001
	30	(0.018)	30	(0.020)	30	

* $p<0.1$, ** $p<0.05$, *** $p<0.01$.

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Table: Treatment Effects by Price (no Demand Type Controls)

	Unweighted			Weighted		
	Employed (1)	Work hrs (2)	Earnings (3)	Employed (4)	Work hrs (5)	Earnings (6)
Full price	0.044**	2.430***	650.277***	0.076***	3.831***	646.598*
	(0.020)	(0.732)	(222.349)	(0.029)	(0.985)	(335.002)
Discount 30pct	-0.009	0.794	130.826	-0.018	0.601	-408.386
	(0.022)	(0.839)	(199.067)	(0.027)	(1.024)	(350.554)
Discount 70pct	0.006	0.818	116.150	0.082***	4.568***	841.987**
	(0.013)	(0.588)	(167.813)	(0.029)	(0.952)	(346.780)
Pay if employed	-0.017	-0.842	-456.879**	-0.012	-0.395	-653.018**
	(0.017)	(0.682)	(177.557)	(0.026)	(0.908)	(255.441)
Endline control means by treatment:						
Full price	0.376	10.500	2711.955	0.403	9.841	3303.121
Discount 30pct	0.409	13.238	3735.820	0.426	12.976	4117.964
Discount 70pct	0.290	8.549	2156.150	0.413	13.308	3884.266
Pay if employed	0.337	8.765	2202.736	0.361	10.710	3033.444
Observations	6,802	6,802	6,802	6,802	6,802	6,802
R-squared	0.066	0.088	0.121	0.051	0.073	0.085

Standard errors are clustered by branch-trade. The dependent variables are an indicator for whether the respondent is currently employed in a salary/wage-based job (columns 1 and 4), average weekly work hours over the past year (2 and 5) and average monthly earnings over the past year (3 and 6).
*** p<0.01, ** p<0.05, * p<0.1

Table: Pooled Treatment Effects (with re-randomisation variable controls)

	Unweighted			Weighted		
	Employed (1)	Work hrs (2)	Earnings (3)	Employed (4)	Work hrs (5)	Earnings (6)
Invited	-0.006	0.218	-69.960	0.011	1.184*	-51.484
	(0.011)	(0.418)	(105.322)	(0.018)	(0.684)	(220.622)
Control mean	0.344	9.749	2532.997	0.385	11.037	3295.039
Observations	6,800	6,800	6,800	6,800	6,800	6,800
R-squared	0.195	0.261	0.317	0.178	0.239	0.259

Standard errors are clustered by branch-trade. The dependent variables are an indicator for whether the respondent is currently employed in a salary/wage-based job (columns 1 and 4), average weekly work hours over the past year (2 and 5) and average monthly earnings over the past year (3 and 6). Variables used during re-randomization have been included as controls.
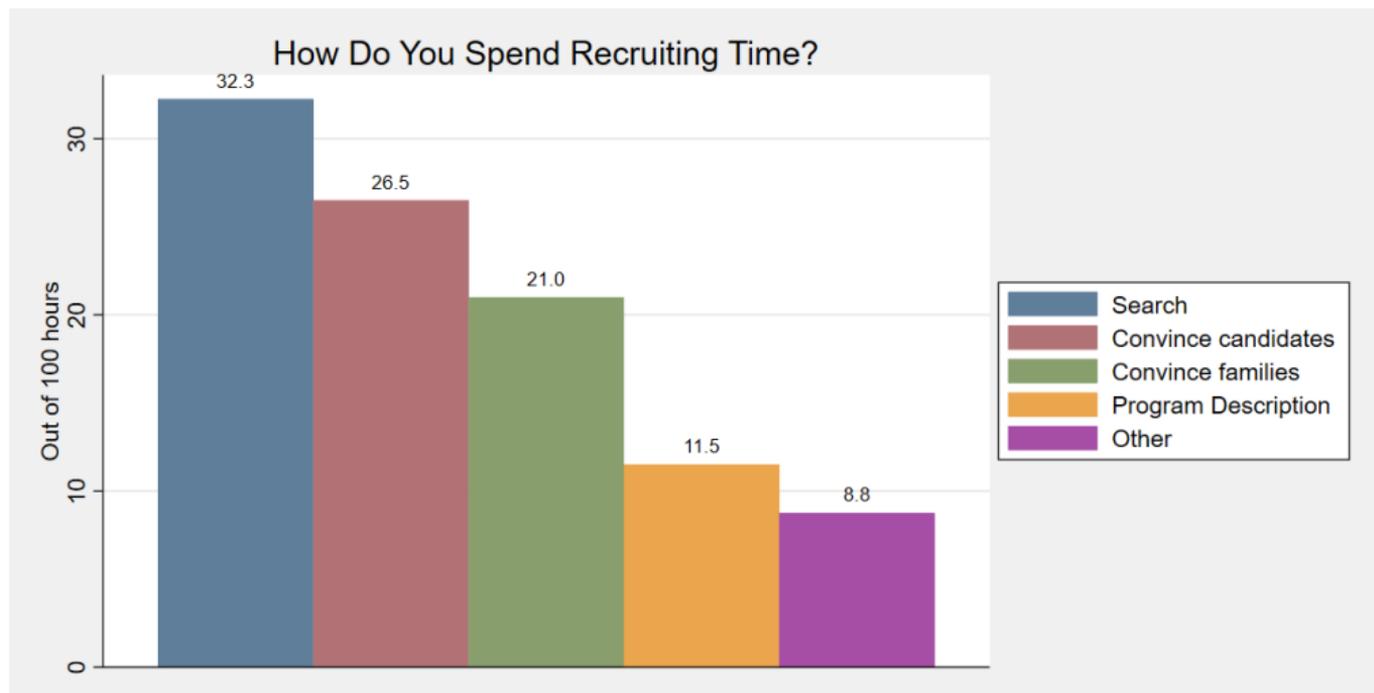*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table: Treatment Effects by Price (with re-randomisation variable controls)

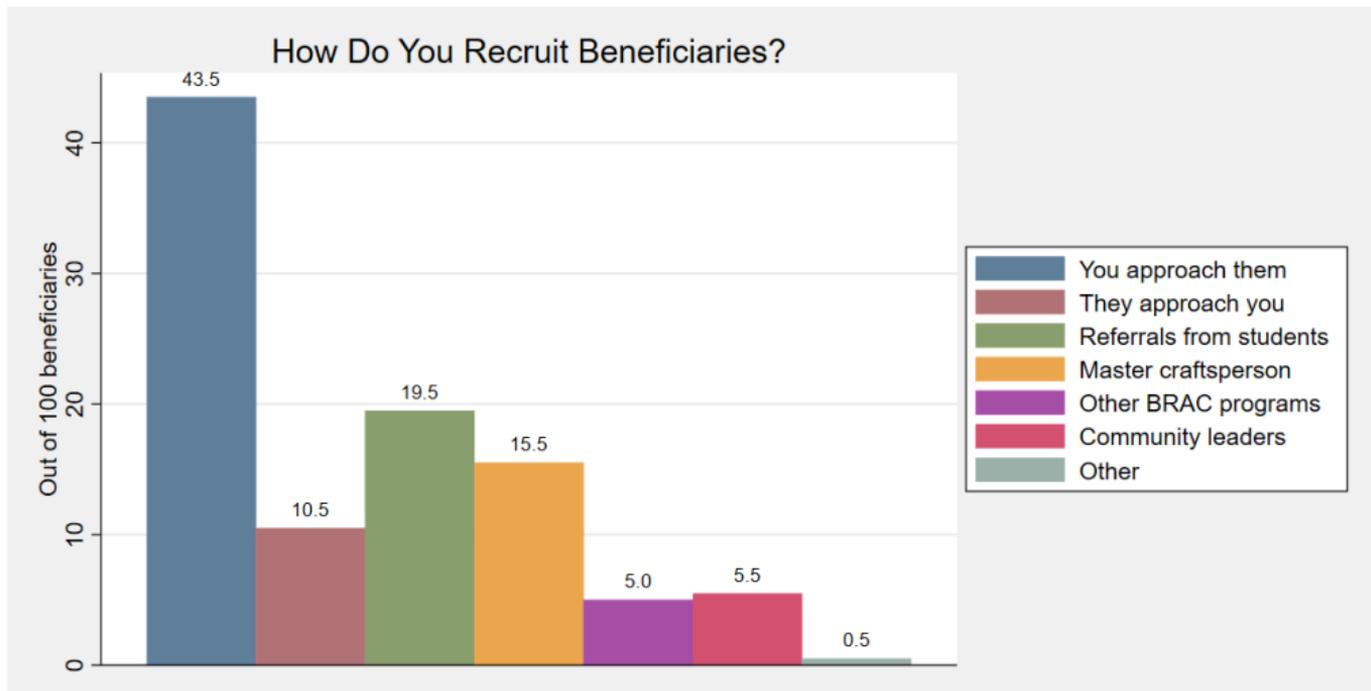|	Unweighted			Weighted		
	Employed (1)	Work hrs (2)	Earnings (3)	Employed (4)	Work hrs (5)	Earnings (6)
Full price	0.023	1.845***	455.933**	0.052*	3.418***	508.129
	(0.019)	(0.651)	(202.590)	(0.028)	(0.812)	(333.745)
Discount 30pct	-0.036	-0.319	-203.387	-0.045	-0.098	-628.621
	(0.022)	(0.956)	(205.352)	(0.027)	(1.301)	(389.159)
Discount 70pct	0.014	1.082*	202.453	0.075**	3.924***	720.424**
	(0.011)	(0.549)	(135.327)	(0.030)	(0.957)	(352.994)
Pay if employed	-0.020	-0.810	-413.863***	0.001	0.051	-459.395**
	(0.017)	(0.612)	(142.426)	(0.024)	(0.837)	(223.247)
p-value for equality of treatment effects:						
	0.011	0.001	0.000	0.001	0.000	0.000
Endline control means by treatment:						
Full price	0.376	10.500	2711.955	0.403	9.841	3303.121
Discount 30pct	0.409	13.238	3735.820	0.426	12.976	4117.964
Discount 70pct	0.290	8.549	2156.150	0.413	13.308	3884.266
Pay if employed	0.337	8.765	2202.736	0.361	10.710	3033.444
Observations	6,800	6,800	6,800	6,800	6,800	6,800
R-squared	0.197	0.263	0.320	0.194	0.253	0.276

Standard errors are clustered by branch-trade. The dependent variables are an indicator for whether the respondent is currently employed in a salary/wage-based job (columns 1 and 4), average weekly work hours over the past year (2 and 5) and average monthly earnings over the past year (3 and 6). Variables used during re-randomization have been included as controls.
*** p<0.01, ** p<0.05, * p<0.1

Time Use

How Do You Spend Recruiting Time?

Recruiting Activities

How Do You Recruit Beneficiaries?

Takeup Heterogeneity

Take-up Heterogeneity: 70% Subsidy vs. Control
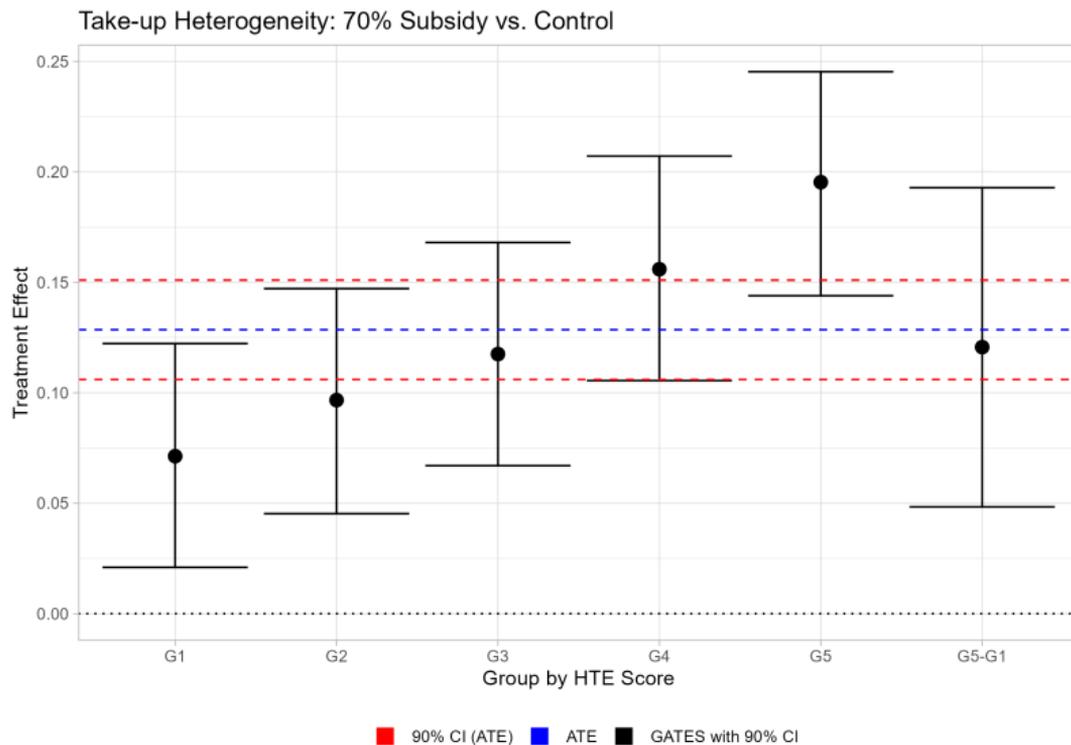
Note: Analysis includes K-nearest Neighbor and Random Forest learners
with 100 sample splits. Using demand controls, rerandomization variables, CV variables

Employment

Earnings Heterogeneity

Earnings Heterogeneity: 70% Subsidy vs. Control

Note: Analysis includes LASSO, K-nearest Neighbor, Elastic Net and Random Forest learners with 100 sample splits. Using demand controls, rerandomization variables, CV variables

Hours Heterogeneity

Hours Heterogeneity: 70% Subsidy vs. Control

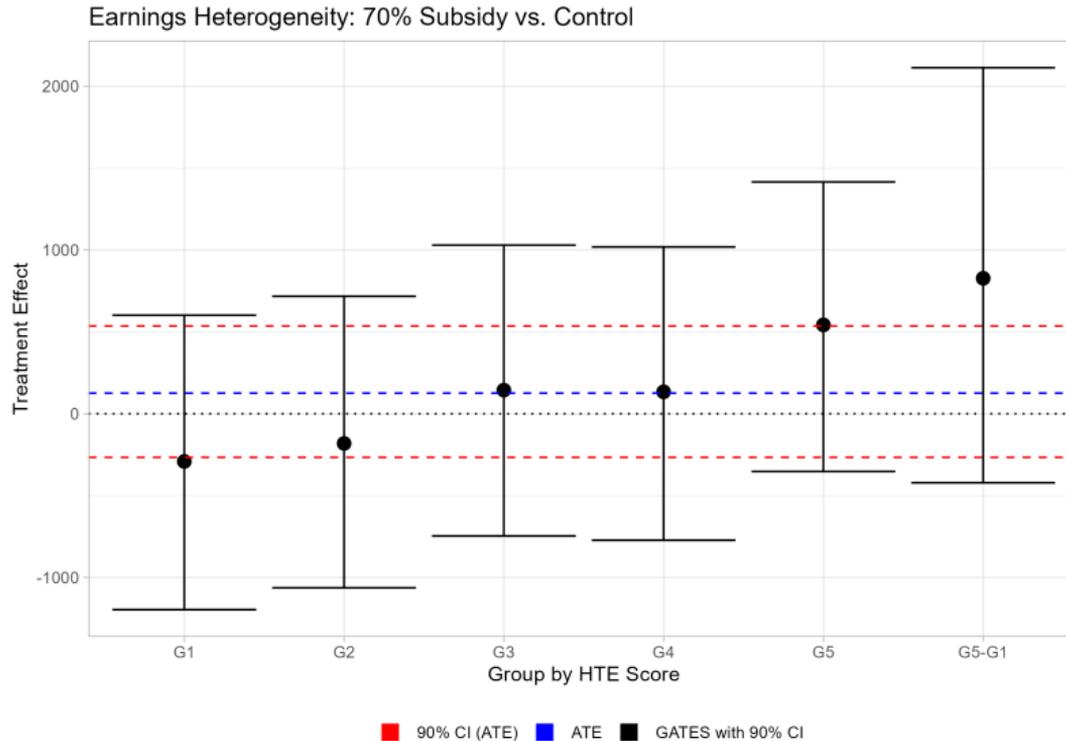Legend: 90% CI (ATE) — ATE — GATES with 90% CI
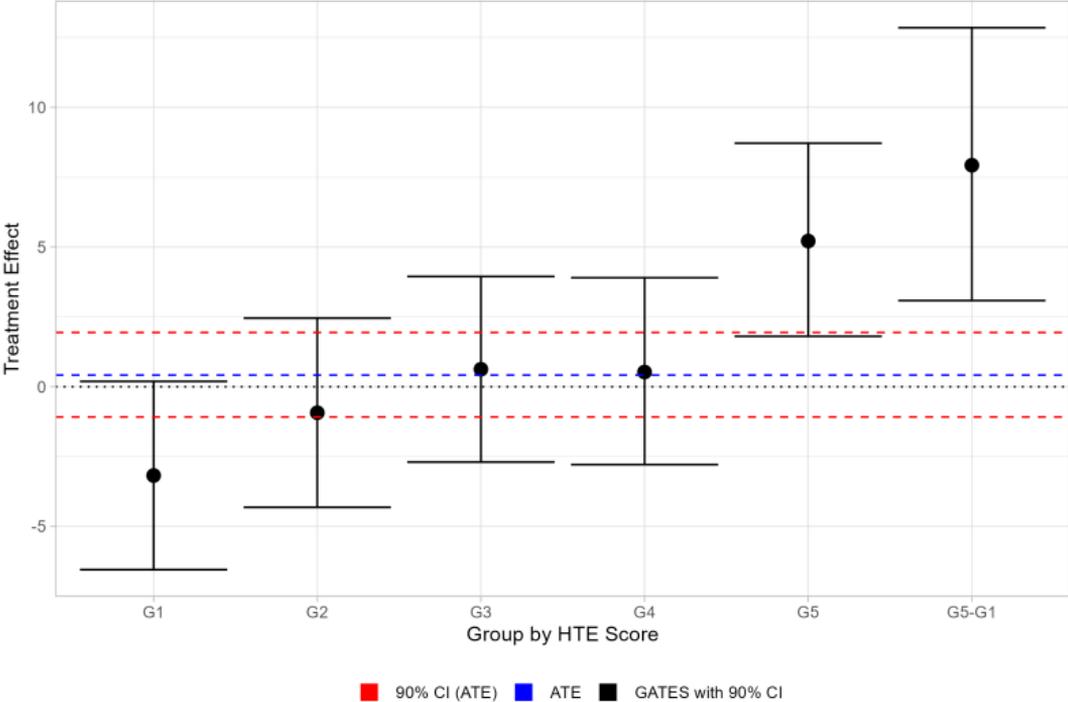
Note: Analysis includes LASSO, K-nearest Neighbor, Elastic Net and Random Forest learners with 100 sample splits. Using demand controls, rerandomization variables, CV variables

Classification Analysis - Take-up

Table: Quintile 5 - Quintile 1 Differences: Take-up

Female	Age	Ever Married	Children	Education
-0.348***	-3.486***	-0.540***	-0.858***	0.107***
(0.032)	(0.550)	(0.032)	(0.085)	(0.032)

Father Skill	Mother Skill	Migrant	Vocational Training	Liquidity
-0.179***	0.068**	-0.118***	0.182***	-0.092***
(0.027)	(0.031)	(0.036)	(0.028)	(0.034)

Notes: * p<0.1, ** p<0.05, *** p<0.01. Standard errors in parentheses.

Classification Analysis - Earnings

Table: Quintile 5 - Quintile 1 Differences: Earnings

Age	Ever Married	Children	Work Experience	HH Head
-4.344***	-0.221***	-0.509***	-82.179***	-0.134***
(0.516)	(0.038)	(0.091)	(3.770)	(0.025)

Vocational Training	Employed			
-0.134***	-0.742***			
(0.031)	(0.025)			

Notes: * p<0.1, ** p<0.05, *** p<0.01. Standard errors in parentheses.

Classification Analysis - Hours

Table: Quintile 5 - Quintile 1 Differences: Hours

Female	Age	Ever Married	Children	Education
-0.704***	-7.063***	-0.514***	-1.110***	-0.560***
(0.026)	(0.510)	(0.034)	(0.082)	(0.034)

Vocational Training	Work Experience	Employed
-0.121***	-75.022***	-0.560***
(0.032)	(3.902)	(0.034)

Notes: * p<0.1, ** p<0.05, *** p<0.01. Standard errors in parentheses.

Completion rates close to 1, except in PIE
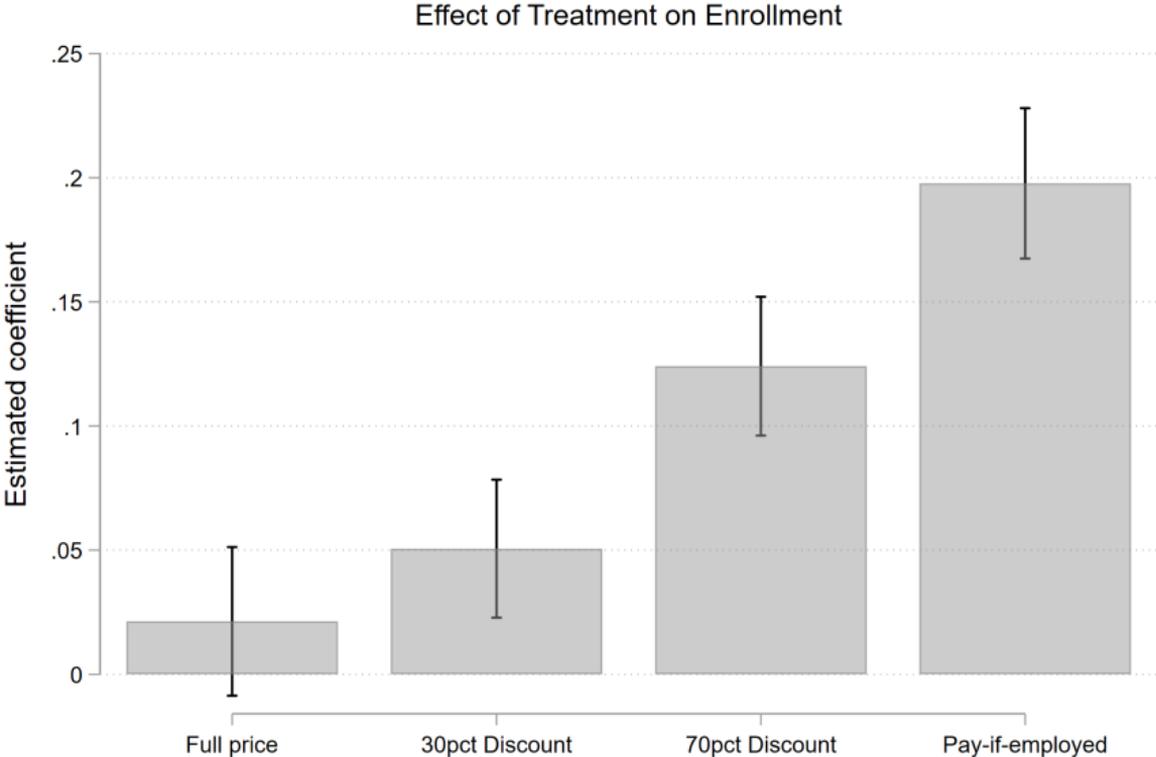

Effect of Treatment on Enrollment

Figure: Average Earnings in the Control Group - Unemployed at Baseline
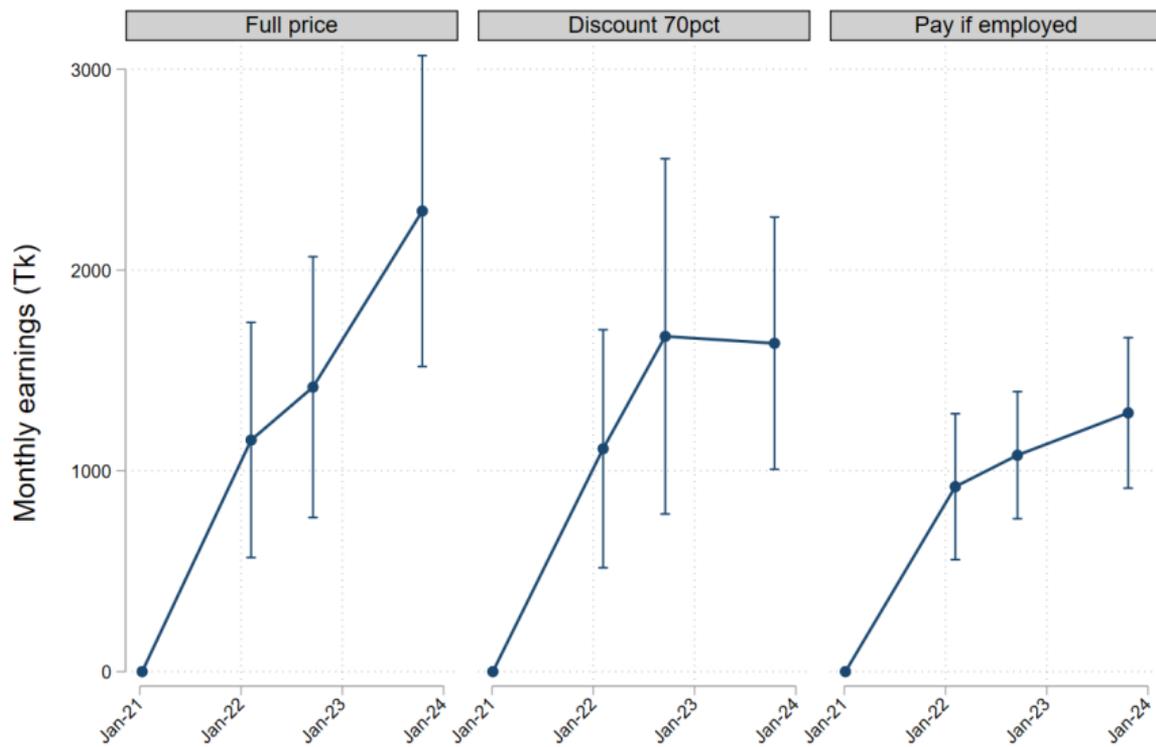
Back

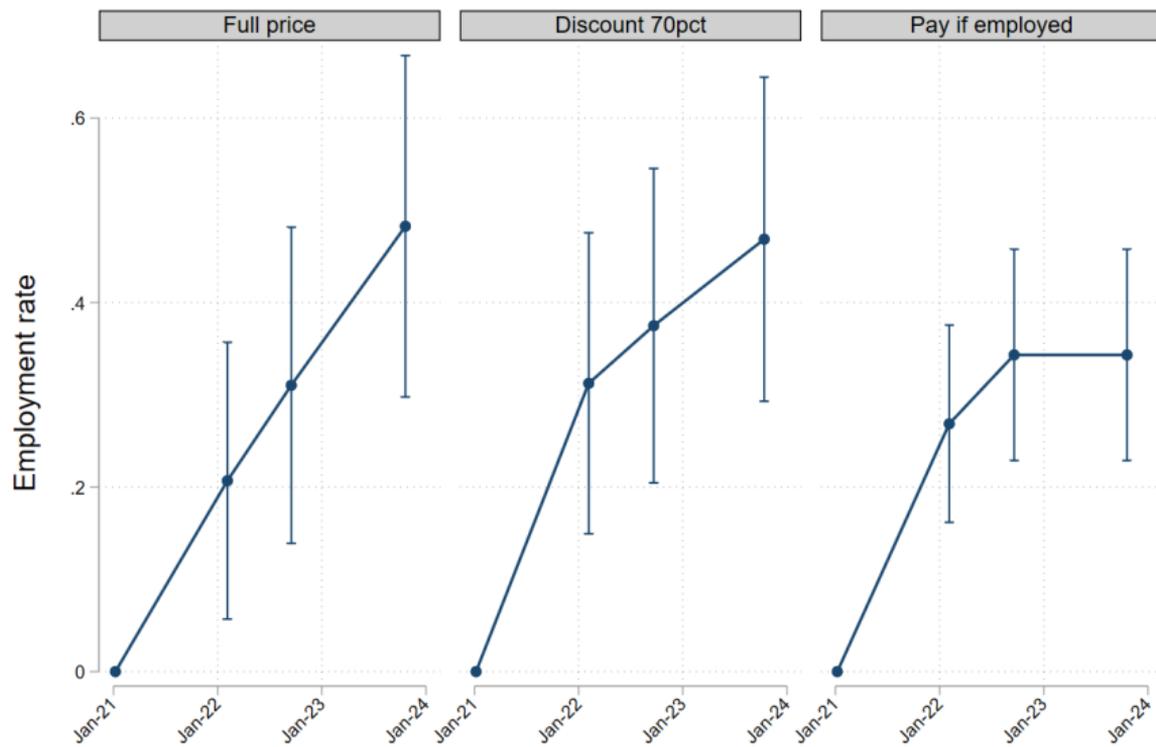# Figure: Employment in the Control Group - Men Unemployed at Baseline

Back

Figure: Employment in the Control Group - Women Unemployed at Baseline

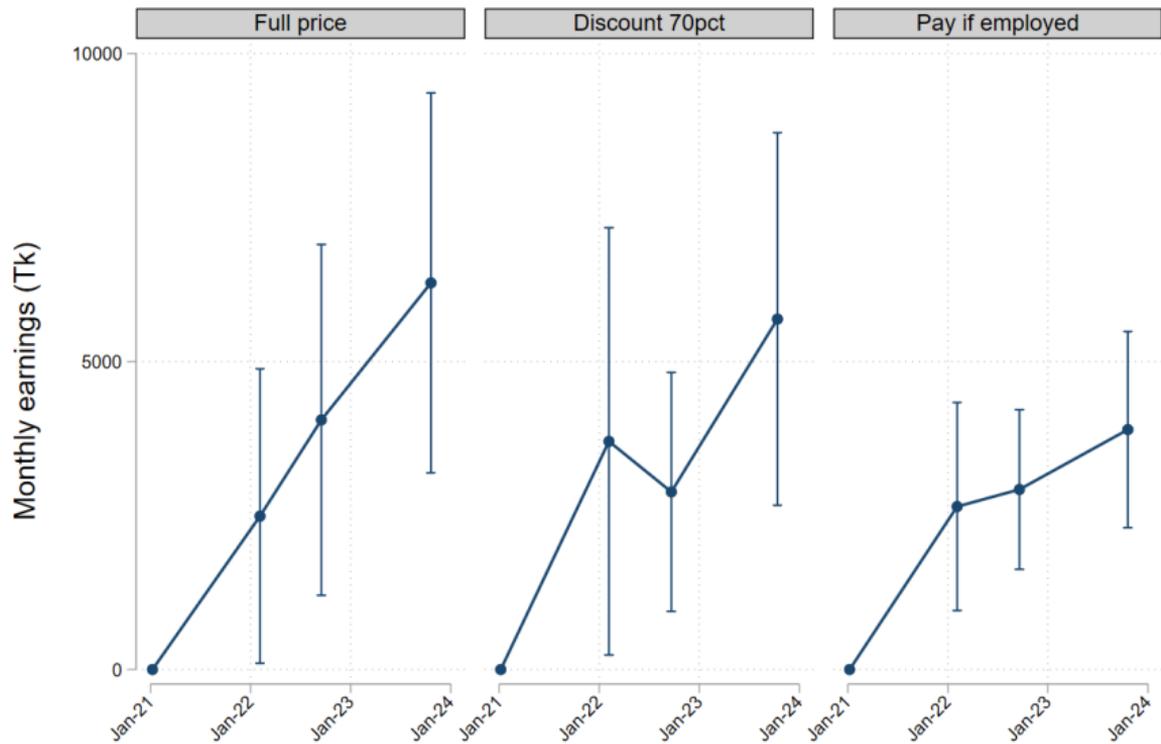Figure: Average Earnings in the Control Group - Men Unemployed at Baseline

Figure: Average Earnings in the Control Group - Women Unemployed at Baseline

Table: Balance in Characteristics in Full Price vs. Pay-if-employed - Enrolled in Training

Variable	N	(1) Full Price Mean/(SE)	N	(2) Pay-if-employed Mean/(SE)	N	(1)-(2) Pairwise t-test Mean difference
Age	33	20.939 (1.032)	528	22.970 (0.270)	561	-2.030*
Secondary education	33	0.212 (0.072)	528	0.225 (0.018)	561	-0.013
HH income p.c.	33	4289.364 (359.484)	528	3890.172 (90.311)	561	399.192
Female	33	0.848 (0.063)	528	0.661 (0.021)	561	0.188**
Children	33	0.515 (0.145)	528	0.672 (0.043)	561	-0.157
Employed	33	0.121 (0.058)	528	0.250 (0.019)	561	-0.129*
Reservation wage	19	10168.421 (1670.348)	373	9279.893 (330.736)	392	888.528
Work experience	33	15.303 (7.643)	528	23.801 (1.981)	561	-8.498
Training experience	33	8.030 (4.192)	528	37.428 (6.474)	561	-29.398
Predicted employment	33	0.268 (0.027)	528	0.358 (0.008)	561	-0.090***

* $p<0.1$, ** $p<0.05$, *** $p<0.01$..

Table: Balance in Characteristics in Full Price vs. 70 pct Discount - Enrolled in Training

Variable	N	(1) Full Price Mean/(SE)	N	(2) 70 pct discount Mean/(SE)	N	(1)-(2) Pairwise t-test Mean difference
Age	33	20.939 (1.032)	229	24.725 (0.459)	262	-3.785***
Secondary education	33	0.212 (0.072)	229	0.231 (0.028)	262	-0.019
HH income p.c.	33	4289.364 (359.484)	229	3564.010 (114.004)	262	725.354**
Female	33	0.848 (0.063)	229	0.777 (0.028)	262	0.071
Children	33	0.515 (0.145)	229	0.956 (0.074)	262	-0.441**
Employed	33	0.121 (0.058)	229	0.253 (0.029)	262	-0.132*
Reservation wage	19	10168.421 (1670.348)	162	8550.926 (385.417)	181	1617.495
Work experience	33	15.303 (7.643)	229	27.293 (3.324)	262	-11.990
Training experience	33	8.030 (4.192)	229	30.122 (10.105)	262	-22.092
Predicted employment	33	0.268 (0.027)	229	0.331 (0.012)	262	-0.063*

* $p<0.1$, ** $p<0.05$, *** $p<0.01$..

Table: Balance in Characteristics by Interest in Training - Full Price vs. Pay-if-employed

Variable	(1) Pay-if-employed only N	Mean/(SE)	(2) Full Price and pay-if-employed N	Mean/(SE)	(1)-(2) Pairwise t-test N	Mean difference
Age	7657	24.969 (0.079)	5068	24.834 (0.094)	12725	0.135
Secondary education	7657	0.188 (0.004)	5068	0.204 (0.006)	12725	-0.016**
HH income p.c.	7657	3625.154 (21.866)	5068	4255.967 (28.988)	12725	-630.813***
Female	7657	0.797 (0.005)	5068	0.734 (0.006)	12725	0.062***
Children	7657	1.029 (0.013)	5068	0.976 (0.015)	12725	0.053***
Employed	7657	0.272 (0.005)	5068	0.275 (0.006)	12725	-0.003
Reservation wage	5253	7998.784 (73.706)	3223	9072.954 (107.784)	8476	-1074.170***
Work experience	7657	32.545 (0.622)	5068	32.166 (0.780)	12725	0.378
Training experience	7657	32.993 (2.178)	5068	32.008 (3.283)	12725	0.985
Predicted employment	7657	0.338 (0.002)	5068	0.353 (0.003)	12725	-0.015***

* $p<0.1$, ** $p<0.05$, *** $p<0.01$. Sample includes all households surveyed at baseline
who are interested in training under pay-if-employed.

Table: Balance in Characteristics in Full Price vs. Pay-if-employed - BRAC Sample

	(1) Pay-if-employed		(2) Full Price		(1)-(2) Pairwise t-test	
Variable	N	Mean/(SE)	N	Mean/(SE)	N	Mean difference
Age	765	22.229	390	23.100	1155	-0.871**
		(0.235)		(0.315)		
Secondary education	765	0.280	390	0.282	1155	-0.002
		(0.016)		(0.023)		
HH income p.c.	765	4948.565	390	5842.322	1155	-893.757***
		(160.001)		(209.854)		
Female	765	0.488	390	0.485	1155	0.003
		(0.018)		(0.025)		
Children	765	0.333	390	0.321	1155	0.013
		(0.028)		(0.037)		
Employed	765	0.263	390	0.318	1155	-0.055**
		(0.016)		(0.024)		
Work experience	765	17.240	390	22.295	1155	-5.055**
		(1.383)		(2.279)		
Training experience	765	23.366	390	43.721	1155	-20.354***
		(2.834)		(6.462)		
Reservation wage	765	12467.974	390	15045.641	1155	-2577.667***
		(352.864)		(507.608)		

* p<0.1, ** p<0.05, *** p<0.01.

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Table: Impact of Reminder on Reported Earnings and Employment

VARIABLES	(1) Employed	(2) Earnings
Message	-0.05	-1,260.02***
	(0.03)	(439.21)
Observations	6,213	6,213
R-squared	0.074	0.074
Mean	0.284	2062

SE clustered by branch-trade
*p<.05; **p<.01; ***p<.001

Table: Treatment effects with Willingness to Pay Interactions

	Employed (1)	Weekly work hrs (2)	Monthly earnings (3)
Panel A: Treatment effects for WTP ≥ 100			
Full price	-0.009.	1.223.	0.390.
	(0.029)	(1.125)	(0.327)
Discount 30pct	-0.009.	-1.178.	-0.562.
	(0.040)	(1.498)	(0.456)
Discount 70pct	0.047*	0.603.	0.091.
	(0.027)	(0.942)	(0.279)
Pay if employed	0.023.	1.027.	-0.083.
	(0.028)	(0.862)	(0.238)
Panel B: Main effect for WTP < 100			
WTP < 100	0.024.	0.100.	-0.197.
	(0.027)	(1.010)	(0.286)
Panel C: Discounts × WTP < 100			
Discount 30pct	-0.071.	0.106.	-0.022.
	(0.067)	(2.219)	(0.408)
Discount 70pct	-0.072**	-0.892.	-0.257.
	(0.031)	(1.209)	(0.350)
Pay if employed	-0.038.	-0.867.	0.135.
	(0.038)	(1.231)	(0.399)
Control mean	0.344	9.749	2.533
Observations	6,675	6,675	6,675
R-squared	0.039	0.064	0.098

Standard errors clustered by branch-trade. Earnings are measured in 1000 Tk.
Full price treatment was only available to participants with WTP ≥ 100.
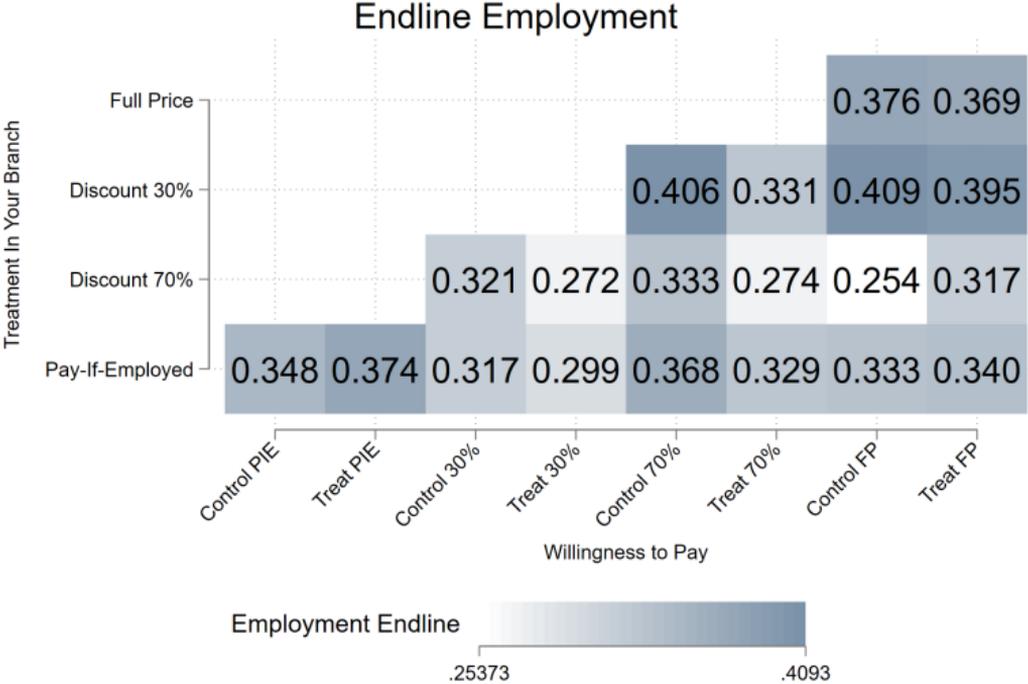*** p<0.01, ** p<0.05, * p<0.1

▸ Back

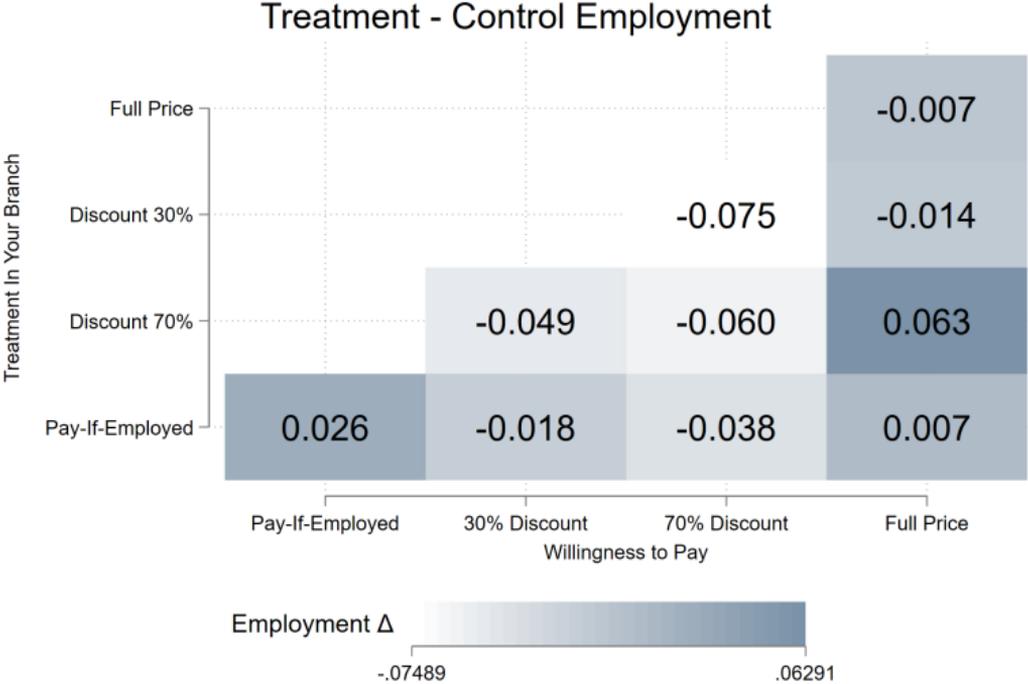**Figure:** Coordinates of BRAC and Experimental Sample Respondents (Displaced)
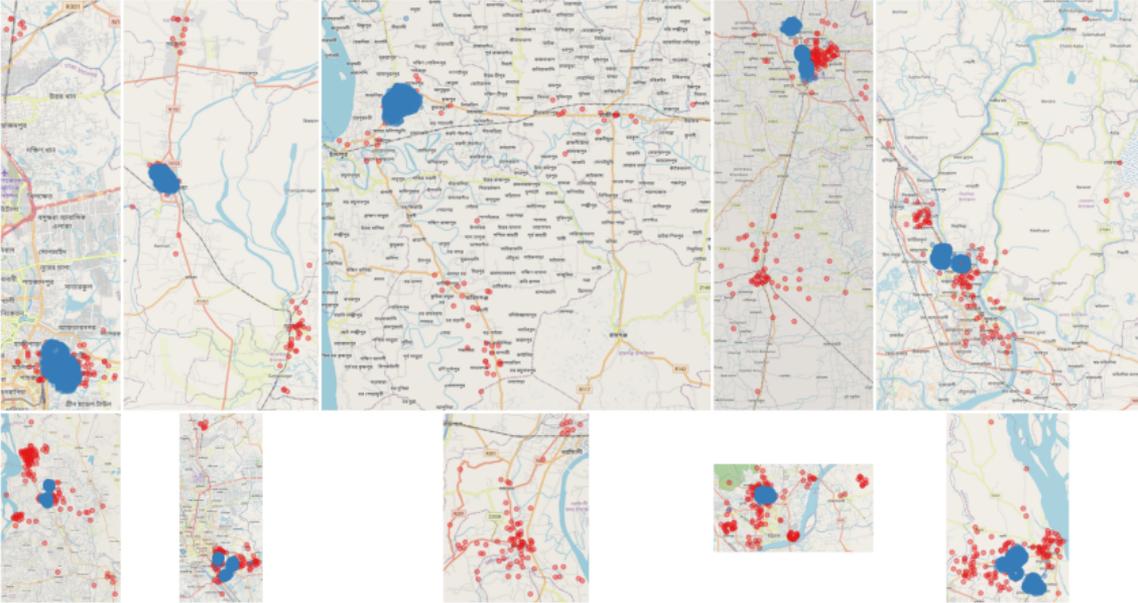
Sample ● BRAC ● RCT

‣ Back

Endline Employment Heatmap - Version 1
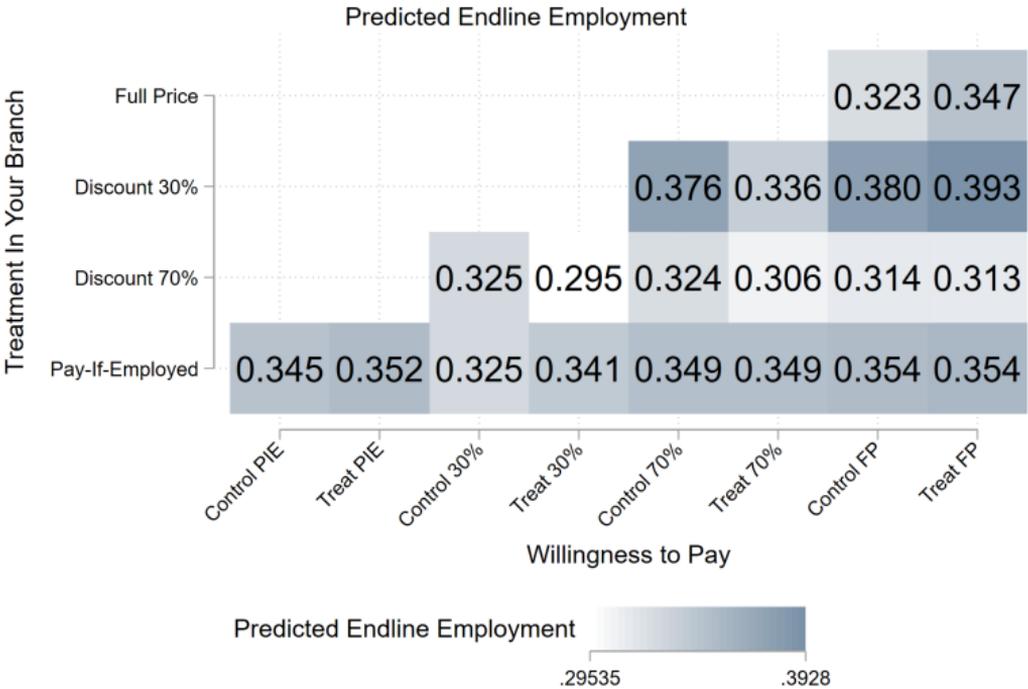

Endline Employment

Treatment In Your Branch	Control PIE	Treat PIE	Control 30%	Treat 30%	Control 70%	Treat 70%	Control FP	Treat FP
Full Price							0.376	0.369
Discount 30%					0.406	0.331	0.409	0.395
Discount 70%			0.321	0.272	0.333	0.274	0.254	0.317
Pay-If-Employed	0.348	0.374	0.317	0.299	0.368	0.329	0.333	0.340

Willingness to Pay

Employment Endline

.25373   .4093

Endline Employment Heatmap - Version 2

Treatment - Control Employment

	Pay-If-Employed	30% Discount	70% Discount	Full Price
Full Price				-0.007
Discount 30%			-0.075	-0.014
Discount 70%		-0.049	-0.060	0.063
Pay-If-Employed	0.026	-0.018	-0.038	0.007

Treatment In Your Branch

Willingness to Pay

Employment Δ

-.07489   .06291

Attrition

Treatment - Control Attrition
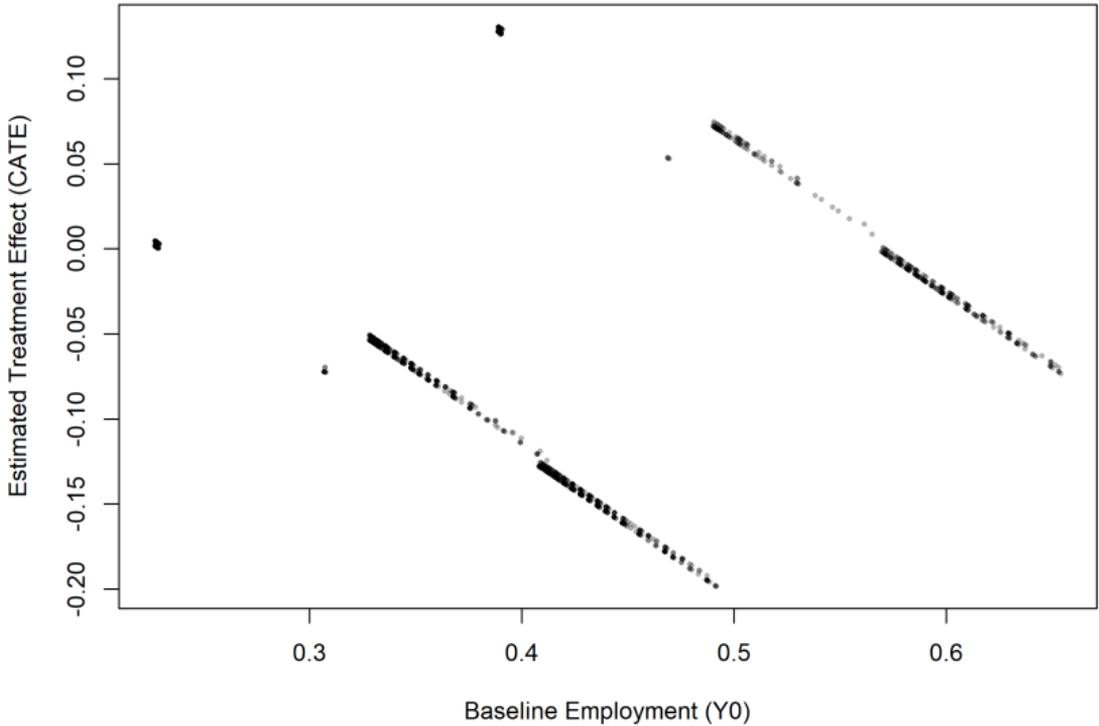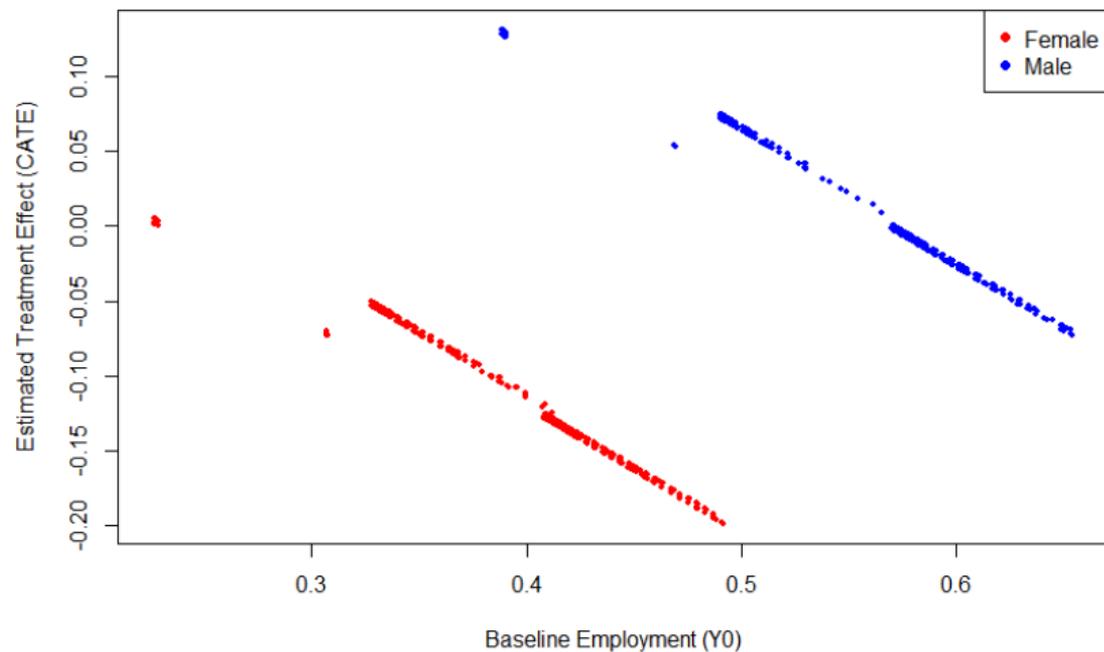
Attrition

Predicted Endline Employment

Proxy Conditional Average Treatment Effects

Scatterplot Proxy Employment (Y0) vs CATE (Y1-Y0)

Proxy Conditional Average Treatment Effects by Gender

Proxy Conditional Average Treatment Effects over Baseline HH Income

Log Baseline HH Income vs Proxy CATE (Y1-Y0)