

Does motivation matter in vocational training? evidence from a natural experiment

著者	Makino Momoe, Shonchoy Abu S
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Momoe MAKINO^a and Abu S. SHONCHOY^b

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Abstract

Vocational training has been implemented in many developing countries, on the belief that lack of skills is the bottleneck to getting the poor out of poverty. However, follow-on surveys show that the effect of these programs has been mediocre: employment and income have not improved much after participation in these programs. Given this discouraging reality, scholars have started to investigate why these programs have been ineffective and how they can be improved. Here, we focus on motivation as a key factor. Exploiting the natural experimental setting provided by the Uttoron project implemented in Bangladesh, we examine how participation in a motivational session affects the impact of the vocational training program that follows. Survey results show that trainees who receive the motivational session are more likely to be employed and have higher earnings three months after completing the program. This finding underscores the importance of participant motivation to the success of development projects.

Keywords: Motivation; Vocational training; Natural experiment; Poverty; Bangladesh

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a Institute of Developing Economies, Chiba, Japan (momoe_makino@ide.go.jp)

b Florida International University, FL, USA

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INSTITUTE OF DEVELOPING ECONOMIES (IDE), JETRO
3-2-2, WAKABA, MIHAMA-KU, CHIBA-SHI
CHIBA 261-8545, JAPAN

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Abstract

Vocational training has been implemented in many developing countries, on the belief that lack of skills is the bottleneck to getting the poor out of poverty. However, follow-on surveys show that the effect of these programs has been mediocre: employment and income have not improved much after participation in these programs. Given this discouraging reality, scholars have started to investigate why these programs have been ineffective and how they can be improved. Here, we focus on motivation as a key factor. Exploiting the natural experimental setting provided by the Uttoron project implemented in Bangladesh, we examine how participation in a motivational session affects the impact of the vocational training program that follows. Survey results show that trainees who receive the motivational session are more likely to be employed and have higher earnings three months after completing the program. This finding underscores the importance of participant motivation to the success of development projects.

1. Introduction

Many publicly funded vocational training programs are offered to poor and disadvantaged people in developing countries, and their impacts are typically evaluated by conducting randomized controlled trials (RCTs) (Attanasio, Kugler, and Meghir 2011; Card et al. 2011; Honorati 2015; Alzúa, Cruces, and Lopez 2016; Hirshleifer et al. 2016; Attanasio et al. 2017; Maitra and Mani 2017). Only a few of these studies, which usually evaluate outcomes in terms

of employment and earnings, have shown significantly positive effects, and virtually none have identified a program that satisfies a cost-benefit condition (Blattman and Ralston 2015).

While possible flaws in program evaluation must be taken seriously, the likelihood that the programs themselves can be improved must be taken seriously as well. Why are these programs less effective than expected? There is no clear answer to this question yet. Perhaps the target population and/or training approach is inappropriate. For example, compared with a program's expected returns, the target might consider the opportunity costs of participation to be too high and therefore choose not to take part. Alternatively, the premise of vocational training programs may be wrong, that is, perhaps a lack of marketable technical skill does not comprise a bottleneck for the poor to get out of poverty. While the reasons remain unclear, researchers have started to investigate whether returns to training might be higher for some subgroups or program types, which would suggest that "targeted training" might yield the desired developmental outcomes (McKenzie 2017). In line with this argument, this study focuses on the possibility that motivational training can enhance the effectiveness of vocational training.

Motivation is often considered to be crucial to the success of development projects. Indeed, the idea that the poor should be not passive beneficiaries but rather independent actors who take the initiative in solving their own problem is a core premise of the participatory development approach (e.g., World Bank 2002). Though empirical evidence for the idea is mixed (Ashraf, Berry and Shapiro 2010; Cohen and Dupas 2010), there seems to be no objection to the idea of incorporating a sense of participant ownership or motivation into development projects.

Providing a motivational session before vocational training may also serve to target individuals who are more likely to benefit from training. Participants who are not inspired by a session may drop out of the vocational training program before it starts, and the session can

thus function as a self-selection mechanism. Further, as the motivational session often includes group work, one's motivation may be reinforced when s/he is in the session where many others are contemporaneously motivated. In short, a motivational session might both motivate participants and identify motivated participants, both of which likely increase the likelihood of vocational training program success.

We are interested in understanding the effects, if any, of motivational training on two measurable outcomes of vocational training: employment and earnings. To answer this question, we exploit a natural experimental setting provided by the Uttoron - Skills for better life (hereafter Uttoron) project in Bangladesh. This continuing project (2016–2019) serves three districts in Sylhet division, one of Bangladesh's most impoverished areas. A remarkable feature of the project is its intention to provide a 2-day motivational session prior to vocational training programs that ranges from 2–4 months. The primary objective of the motivational session is to inspire trainees, and its methods include group work, games, career counseling, individual counseling, and so on.¹ As implemented, many participants begin their vocational training without this session. We consider this setting as a natural experiment, and analyze variations in the effects of vocational training between trainees with and without a motivational session. Our data comes from surveys taken (i) prior to registration; (ii) three months after each training program; and (iii) a survey, taken in July 2018, of everyone who had completed a training program from the time of the project's launch in April 2017 through May 2018.

Our empirical results show that a motivational session has significantly positive effects on

¹ A secondary purpose of the motivational session was the selection of motivated individuals for inclusion in the vocational training program. However, only 23, or 3%, out of 671 individuals who received the motivational session were unselected. We find, at best, a limited effect of this selection on outcomes of interest. Furthermore, given that the program tends to deselect better-educated and wealthier individuals, the estimated effects of the program on labor market outcomes are likely to be lower-bound. See Section 4 for more details.

employment and earnings three months after completion of vocational training. However, the motivational session does not have a significant effect on whether or not a participant will complete the program, perhaps because this factor might have been outweighed by several others. Keep in mind that Uttoron's basic-skill training programs are designed to prepare poor youth to become, for example, plumbers, welders, machinists, and electricians. Those whose career ambitions are higher might drop the program. Indeed, the data show that more-educated participants are more likely to drop the program. At the same time, more-educated participants are more likely to be in a motivational session. Therefore, inferences based on our estimated effects of motivational sessions can be considered as the lower bound.

The remainder of this paper is constructed as follows. Section 2 presents the Uttoron project and its natural experimental setting. Section 3 describes the datasets and shows the balance test. Section 4 presents the empirical results. Section 5 concludes the study.

2. Uttoron Project

The Uttoron youth training project was established in 2016 in the three northeastern districts (Sylhet, Moulvibazar, and Habiganj) of Sylhet division, Bangladesh, funded by Chevron under their Bangladesh Partnership Initiative (BPI) and implemented by Swisscontact. By mid-2018, more than 900 youths from poor households – including women, minorities, and disabled persons – had participated. Half of the participants join long-established training programs in urban areas that were developed and continue to be administered by the Skills for Employment Investment Program (SEIP, funded by the Asian Development Bank and implemented by the Ministry of Finance, Government of Bangladesh). The half who reside too far from SEIP training centers are welcomed into a training program both developed and administered by Uttoron. In both cases, training periods for programs that develop skills useful for electricians, mechanics, plumbers, welders, tailors, or tile- and marble- setters last 2–4 months.

A distinguishing feature in both settings is a 2-day motivational session prior to the main skill-building work. The motivational session's design is based on Uttoron's market assessment, which revealed that young people are not aware of the benefits of skill training and therefore are not interested in enrolling in vocational training programs. The session includes group work, individual assignments, games, and various other activities aimed at helping the participants to increase their self-confidence, motivation, and understanding of vocational training's inherent potential. The session also teaches the trainees about life planning and provides career counseling. The sessions are organized in several batches, each limited to 40 participants.

Sylhet has a reputation for sending labor migrants to foreign countries, especially the United Kingdom (UK). These migrants send remittances to their families in Bangladesh in amounts that are much higher than the income they could earn by working locally. According to the Swisscontact project manager, rather than developing skills that could help them pursue a more fulfilling career at home, the typical youth aims to migrate to the UK and work as a manual laborer or driver. Influenced by remittances, even those who stay in Sylhet and look for a job locally tend to expect much higher income than employers are willing to offer. All of these factors generate a target population that would benefit from both skills and motivation to understand and prepare for work that is realistic and locally available.

Because of Uttoron's belief in the importance of increased motivation, the project had planned to provide a motivational session to all trainees. However, according to the manager of Swisscontact, administrative reasons have led to some vocational programs to begin without a preliminary motivational session. Available resources enable presentation of motivational sessions every 5–6 months, while training programs begin approximately every two months. Thus, the available motivational sessions were not sensible for, and therefore not offered to, some vocational training batches. The timing of batches – and no other variable related to training program or target population – determined which trainees would be given a

motivational session and which would not. We exploit the natural experimental situation thus created to compare employment and earnings outcomes between those with and without a motivational session. In the following empirical analysis, we consider the trainees with a motivational session as “treated” and those without the session as the control.

3. Data

Treatment/control status is determined by the timing of vocational training batches, given that this natural experimental situation was generated by an administrative constraint to fill these batches. Thus, the treatment/control status is not exactly random and may be unbalanced. That is, the populations of some batches may be over- or under-represented by people with certain characteristics. Out of this concern, we conducted a balance test on the treatment and control groups.

Table 1 presents the mean of each observed characteristic for treatment and control groups. We have in total 649 in the treatment group and 262 in the control group. More than 80% are male trainees, and their average age is around 22 years. Around 90% are Muslim and almost 99% are Bengalis. The marital status varies significantly between the treatment and control groups: 7% of the former and 2% of the latter are married. The average number school years is nine. Around 20% were employed, either self- or wage-employed, prior to participating in this project. Around 90% are members of male-headed households. The number of household members is 6–7. Housing conditions for treatment and control groups are different: 14% of the former live in solid (pakkha) houses, compared with 9% of the latter. A trainee’s father has completed four years of schooling, on average, while the mother has an average of three years of schooling. The percentage of households with agricultural land also varies between the treatment and control groups: 27% for the former and 17% for the latter.

Obviously, we see that some attributes are significantly different at the conventional 5%

level between the treatment and control groups. Those in the treatment group is older and more likely to be married, have longer years of schooling, and is wealthier in term of housing condition and ownership of agricultural land. Specifically, those in the treatment group are better off and better educated. This is a potential concern in our empirical analysis, because higher income and education are linked with higher motivation and these unobserved sources of higher motivation may generate the outcome, i.e., more employment and earnings, irrespective of the motivational session. This concern is addressed in Section 4.

4. Empirical Results

The main estimation equation is as follows:

$$y_{ijt} = \beta T_{ijt} + \mathbf{x}'_{ijt}\boldsymbol{\gamma} + \eta_j + \theta_t + \varepsilon_{ijt} \quad (1)$$

where y_{ijt} is the outcome of the individual i , in union council² (or training center) j , who joined the training in the month of t . The outcomes are the program completion, employment status, and earnings. β is the coefficient of interest, which is the effect of the motivational session. T_{ijt} takes the value 1 if the individual i received motivational training, and 0 otherwise. \mathbf{x}_{ijt} is a set of covariates of individual i , namely: gender, age, religion, ethnicity, marital status, years of schooling, employment status before training, gender of household head, housing condition, parental years of schooling, acres of agricultural land, and number of household members. η_j is the union council fixed effects or training center fixed effects, depending on the specification. We take these two different fixed effects in the separate specifications because the union council variable may contain measurement errors (e.g.,

² A union council is an administrative unit consisting of 4 to 6 villages.

different codes for the same union council); there is no ambiguity in the training center variable. θ_t captures fixed effects related to the starting month of training.³

Table 2 presents the results from estimating Equation 1. We find that, three months after training is completed, those who have received the motivational session are 5–9 percentage points more likely to be employed (Columns 3 and 4) and to have 700 to 1000 BDT more in monthly earnings (Columns 5 and 6). Columns 7 and 8 present the effect of a motivational session on employment status at the time of the broad survey at the end of the project’s first phase. Interpretation is difficult because some respondents had completed their training only two months prior to the survey date, while others had completed it 12 months earlier. The estimation results do not show significant effects of the motivational session on program completion (Columns 1 and 2).

We now address the main concern that the positive effects on employment status and earnings attributed to the motivational session might instead be the result of the treatment group being intrinsically more motivated. Recall that, as shown in Table 1, this group overall has higher education and is wealthier than the control group. To address this concern, we examine the association between the outcome variables and trainee education, wealth, and pre-training employment status. The coefficient estimate of this set of covariates shows that more-educated trainees and those whose parents have more education are less likely to complete the program. Those who live in solid houses and whose families own (more) agricultural land are also less likely to complete the program. And, those who are employed before entering the training program are less likely to complete the program. Perhaps those who are relatively educated and wealthy and have had work experience are more likely to drop out of the program if they realize that their existing skills and opportunities are already greater than what the Uttoron programs

³ Because trainees within the same training batch can start in different months, multicollinearity does not result from inclusion of both treatment and starting month.

aim to develop. The mechanism is similar to self-selection to a food-for-work program: the better-off deselect themselves because more attractive options are available to them. Along the same lines, the data shows that some drop the program in order to pursue higher education. The above negative associations are also observed between the labor market outcomes (i.e., employment status and earnings) and the trainees' education, wealth and the prior-employment status. These negative associations may suggest that the positive effects of the motivational session on labor market outcomes are not derived from the selection bias; indeed, the presence in the treatment group of those with more education, wealth, and work experience might generate underestimates of the motivational session's effects.

Another concern is related to the secondary purpose of the motivational session: selecting motivated individuals into the vocational training program. Because only the treatment group is subjected to a motivation-based selection criterion, the treatment group of vocational trainees may include motivated individuals only, while the control group may include both motivated and less-motivated individuals, as the latter group does not go through the motivation-selection process. However, the effect of this selection process seems to have been limited in this specific program, because Uttoron rejected only 23 (3%) out of the 671 motivational session participants for vocational training. In general, members of this small group were more educated and wealthier (Appendix, Table A1), which is not surprising given that the program targets poor youth. As we have obtained basic information about those who were selected and non-selected,⁴ we can conduct a similar estimation procedure. Note that because there is no information about labor market outcomes for the non-selected, we assign the value 0 for their labor market outcomes. Thus, the estimated treatment effects, when including the non-selected into the treatment group, should be interpreted as the lower bound. We see that the estimated

⁴ For the non-selected, information collected was limited to gender, age, education, employment status, number of household members, and parents' education.

treatment effects naturally decrease in terms of magnitude and statistical significance, but they remain significant and the decrease in magnitude is not large (Appendix, Table A2). Thus, we can safely report that the effect of the selection process on program completion and labor market outcomes was limited. Implications of the main estimation results remain as reported.

Uttoron participants were trained either at SEIP training centers or at a non-SEIP rural training site, depending on their proximity to the SEIP training facility, as described in Section 2. We now examine whether outcomes three months after participation in an SEIP program vary from those after participation in a non-SEIP program. The vocations trained for in the two different environments overlap, but not completely. Concretely, we estimate the following equation with the interaction term:

$$y_{ijt} = \alpha T_{ijt} \times SEIP_{ijt} + \beta T_{ijt} + \delta SEIP_{ijt} + \mathbf{x}'_{ijt} \boldsymbol{\gamma} + \varepsilon_{ijt} \quad (2)$$

where $SEIP_{ijt}$ takes the value 1 if the individual i was a SEIP trainee. Note that the training types, SEIP or non-SEIP, are mostly determined by the trainees' residence, and thus, the Equation 2 does not include union council (or training center) fixed effects due to multicollinearity between $SEIP_{ijt}$ and η_j .⁵ Similarly, due to multicollinearity between $SEIP_{ijt}$ and θ_t ,⁶ Equation 2 excludes fixed effects related to the training starting-month. Estimation results (Table 3) show that the effects of a motivational session accrue mainly to SEIP trainees. The balance test shows no significant difference in education and housing

⁵ Strong correlations are seen between program type (SEIP or non-SEIP) and program place (training center or union council). In general, SEIP continues to administer three long-established training centers (BTTIDC Sylhet, Caritas Sylhet, and UCEP Sylhet) and all trainees from these programs are classed as SEIP trainees. Two training centers (TMSS Habiganj or TMSS Moulavibazar) are entirely separate from SEIP and their participants are classed as non-SEIP trainees. The remaining two centers offer both types of training programs.

⁶ Training type and training start-month show a strong correlation. Those who started the program in April 2017 and May 2017 are all SEIP trainees. Those who started in November 2017 and March 2018 are all non-SEIP trainees.

condition between the SEIP-limited treatment and control groups. The effect of the motivational session on non-SEIP trainee earnings is positive but barely significant, and there is no significant effect on employment status. Interestingly, SEIP base effects are significantly negative, which means that their labor market outcomes are worse than for the non-SEIP control group. Thus, the motivational session is really important for the SEIP trainees who live close enough to access SEIP training facilities. For non-SEIP trainees who live too far from the SEIP facilities, Uttoron's vocational training opportunity itself yields measurable benefits, with or without a preliminary motivational session. One explanation could be that the effects of motivational sessions depend on the availability of alternative training programs.

Because Equation 2 excludes location fixed effects to avoid multicollinearity, specifications without the interaction term (Columns 1, 3, 5, and 7) can be interpreted as being in consonance with Equation 1 without the fixed effects related to both location (η_j) and training-start-month (θ_t). When these effects are excluded, the motivational session is seen to have a significantly positive effect on training program completion (Column 1), which contrasts with an insignificant effect when location and training-start-month fixed effects are included (Table 1, Columns 1 and 2). Also, the motivational session is seen to have a larger positive effect on labor market outcomes when location and training-start-month fixed effects are not included. This suggests that the effects of a motivational session can depend on where a trainee lives and which training center is chosen. To make the motivational session more effective, it may be important to redesign the training program based on the lessons learned from the successful training center.

5. Conclusion

This study, which exploits a natural experimental setting, shows that motivation is an important component of effective vocational training programs. A motivational session increases the

likelihood of a trainee's subsequent employment by 5–9 percentage points and monthly earnings by 700–1000 BDT. Moreover, detailed investigation of the data suggests that these effects may be lower-bound. The motivational session seems to be most effective for those who already have had some vocational training opportunities. In rural areas where vocational training opportunities are much more limited, the provision of training itself may yield positive results irrespective of the motivational session.

The empirical results presented above support important policy implications for ongoing vocational training in developing countries. In environments where opportunities for vocational training already exist, most notably urban environments, the inclusion of a pre-training motivational session seems to be a very effective inducement first to complete the training program and then to realize a superior labor market outcome. Although this study focuses specifically on the relationship between motivational sessions and vocational training, the value of beginning other kinds of development projects with similar motivational sessions is also expected to have a positive effect. Increasing the motivation of program participants may be an important element in the success of a wide variety of development projects whose effects to date have been far less than expected.

Lastly, we would like to emphasize the importance of carefully designing an RCT before a program is implemented. This will enable us to understand the program's true impacts, which in turn will assist the design of better vocational training programs.

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Table 1: Balance test

	(1) "treated" N=649	(2) "control" N=262	(3) t-test: p-value
Male	0.827	0.859	0.244
Age	21.904	21.055	0.001
Muslim	0.894	0.893	0.986
Bengali	0.994	0.981	0.075
Married	0.068	0.019	0.003
Years of schooling	9.475	9.076	0.014
Employment status before training	0.219	0.187	0.282
Male household head	0.894	0.870	0.316
Number of household members	6.735	6.431	0.071
Pakka house	0.139	0.088	0.034
Father's years of schooling	4.224	3.718	0.074
Mother's years of schooling	3.445	2.927	0.022
Agricultural land owned	0.270	0.168	0.001
If owned, acre of agricultural land	78.164	54.125	0.024

Note: Employment status is an indicator variable taking: 0= unemployed, 1= wage or self-employed.

Table 2: Effects of motivational session on program completion and labor market outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Training completed		Employed after 3 months		Monthly income, 3-month average		Employed at the time of last survey	
"Treated"	0.0646 (0.0409)	0.0414 (0.0397)	0.0756** (0.0297)	0.0467 (0.0388)	734.9 (487.2)	1,071** (438.1)	0.0855*** (0.0268)	0.0497 (0.0363)
Male	0.0161 (0.104)	0.0086 (0.0792)	0.157*** (0.0485)	0.146*** (0.0322)	1,672*** (397.1)	1,535*** (185.8)	0.145*** (0.0546)	0.132*** (0.0384)
Age	0.0023 (0.0023)	0.0028 (0.0034)	-0.0036 (0.0034)	-0.0032 (0.0039)	10.90 (21.98)	16.70 (28.00)	-0.004 (0.0033)	-0.0034 (0.0041)
Muslim	-0.0227*** (0.0073)	-0.0180 (0.0150)	-0.0230 (0.0451)	-0.0189 (0.0448)	168.7 (313.3)	144.1 (394.8)	-0.0125 (0.0324)	-0.0079 (0.0344)
Bengali	0.0374** (0.0155)	0.0590 (0.0991)	-0.0545 (0.0937)	-0.0449 (0.113)	-713.9 (842.0)	-868.5 (792.5)	-0.0713 (0.0811)	-0.0647 (0.103)
Married	0.110* (0.0591)	0.130*** (0.0426)	0.154** (0.0611)	0.180*** (0.0516)	1,019*** (320.5)	1,200** (611.2)	0.137** (0.0558)	0.166*** (0.0464)
Years of schooling	-0.0017 (0.0037)	-0.007* (0.0042)	-0.0013 (0.0056)	-0.0049 (0.0105)	16.88 (51.82)	20.78 (74.75)	-0.0014 (0.00486)	-0.005 (0.0102)
Employed before training	-0.0098*** (0.0035)	-0.0285 (0.0253)	0.0633*** (0.0211)	0.0495*** (0.0174)	315.6 (420.6)	251.7 (240.9)	0.0579*** (0.0077)	0.0432** (0.0197)
Male household head	0.0290** (0.0127)	0.0195 (0.0165)	0.0344 (0.0298)	0.0357 (0.0366)	158.7 (242.6)	298.6 (345.7)	0.0436 (0.0357)	0.0450 (0.0412)

Pakka	-0.0274 (0.0211)	-0.0321 (0.0216)	-0.0865*** (0.0300)	-0.0733*** (0.0272)	-847.1*** (276.7)	-489.5* (264.0)	-0.0892*** (0.0289)	-0.0740** (0.0297)
Father's years of schooling	-0.0003 (0.0016)	-0.0021 (0.0026)	-0.0022 (0.0024)	-0.0042 (0.0033)	-28.33 (36.07)	-37.63 (37.11)	-0.0009 (0.0025)	-0.0032 (0.0034)
Mother's years of schooling	-0.0037 (0.0036)	-0.0023 (0.0032)	-0.0076 (0.0059)	-0.0079* (0.0042)	-1.028 (59.24)	2.177 (44.65)	-0.0066 (0.0058)	-0.007 (0.0045)
Acres of agricultural land	-0.0001** (0.0001)	-0.0003** (0.0002)	-0.0003 (0.0002)	-0.0004 (0.0004)	-1.768 (2.336)	-2.361 (3.072)	-0.0003 (0.0003)	-0.0004 (0.0003)
Number of household members	-0.0018 (0.0023)	-0.0035 (0.0040)	-0.0023 (0.0047)	-0.0033 (0.0054)	-26.41 (32.77)	-36.59 (56.21)	0.0009 (0.0033)	-0.0002 (0.0046)
Union council fixed effects	No	Yes	No	Yes	No	Yes	No	Yes
Training center fixed effects	Yes	No	Yes	No	Yes	No	Yes	No
Constant	0.876*** (0.122)	1.075*** (0.161)	0.736*** (0.102)	0.947*** (0.191)	4,164*** (1,149)	4,539** (1,780)	0.806*** (0.0902)	1.018*** (0.152)
Observations	905	904	905	904	905	904	905	904

Note: Training start-months are controlled. Cluster-robust (at respective fixed-effect level) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Difference in effects of motivational session between SEIP and non-SEIP trainees

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Training completed		Employed after 3 months		Monthly income, 3-month average		Employed at the time of last survey	
"Treated"	0.149*	0.00942	0.208***	0.00833	1,714***	388.7*	0.227***	0.0308
	(0.0853)	(0.0666)	(0.0560)	(0.0362)	(386.6)	(218.1)	(0.0513)	(0.0428)
SEIP		-0.160		-0.206***		-1,791***		-0.205***
		(0.104)		(0.0487)		(363.8)		(0.0493)
"Treated"×SEIP		0.189		0.286***		1,606***		0.279***
		(0.136)		(0.0766)		(435.0)		(0.0786)
Male	0.141	0.145	0.293***	0.290***	2,309***	2,456***	0.286***	0.285***
	(0.122)	(0.124)	(0.0568)	(0.0548)	(284.1)	(325.4)	(0.0630)	(0.0596)
Age	0.0043	0.0047	-0.0023	-0.0018	6.590	11.58	-0.0027	-0.0023
	(0.0068)	(0.0068)	(0.0059)	(0.0058)	(39.03)	(38.70)	(0.0059)	(0.0058)
Muslim	0.0777	0.0792	0.0788	0.0829	713.9	704.8	0.0933*	0.0970*
	(0.0537)	(0.0532)	(0.0616)	(0.0608)	(537.7)	(542.1)	(0.0540)	(0.0537)
Bengali	0.183	0.167	0.0207	-0.0005	-359.4	-538.3	0.0155	-0.0056
	(0.157)	(0.144)	(0.168)	(0.149)	(1,256)	(1,153)	(0.164)	(0.146)
Married	0.0966	0.0892	0.145**	0.137**	1,171*	1,065	0.125**	0.117*
	(0.0740)	(0.0712)	(0.0655)	(0.0681)	(693.6)	(701.6)	(0.0626)	(0.0641)
Years of schooling	-0.0238***	-0.0232***	-0.0134	-0.0129	-20.12	-11.85	-0.0143	-0.0138
	(0.0072)	(0.0070)	(0.0117)	(0.0118)	(82.31)	(82.22)	(0.0114)	(0.0113)

Employed before training	0.0787**	0.0783**	0.171***	0.162***	1,073***	1,169***	0.174***	0.167***
	(0.0391)	(0.0367)	(0.0394)	(0.0394)	(303.0)	(305.5)	(0.0363)	(0.0379)
Male household head	-0.0041	-0.0102	0.0172	0.0060	255.6	226.6	0.0286	0.0180
	(0.0496)	(0.0502)	(0.0537)	(0.0567)	(421.2)	(433.4)	(0.0564)	(0.0600)
Pakka	-0.0930**	-0.0876**	-0.101**	-0.0842*	-916.7***	-972.5**	-0.102**	-0.0867*
	(0.0434)	(0.0405)	(0.0437)	(0.0477)	(286.0)	(394.4)	(0.0414)	(0.0459)
Father's years of schooling	-0.0054	-0.0059	-0.0048	-0.0056	-19.70	-22.66	-0.0032	-0.0040
	(0.0037)	(0.0038)	(0.0037)	(0.0039)	(42.63)	(43.63)	(0.0040)	(0.0042)
Mother's years of schooling	-0.0038	-0.0030	-0.0054	-0.0036	-1.724	-1.910	-0.0044	-0.0027
	(0.0074)	(0.0067)	(0.0037)	(0.0041)	(38.64)	(41.94)	(0.0038)	(0.0041)
Acre of agricultural land	0.0001	0.0001	-0.0001	-0.0001	0.741	0.576	-0.0001	-0.0001
	(0.0002)	(0.0002)	(0.0005)	(0.0005)	(3.865)	(4.001)	(0.0005)	(0.0005)
Number of household members	0.0051	0.0047	0.0028	0.0021	14.97	13.07	0.0064	0.0057
	(0.0085)	(0.0086)	(0.0089)	(0.0091)	(63.57)	(63.54)	(0.0092)	(0.0092)
Constant	0.362*	0.493**	0.0839	0.265	-956.2	377.7	0.0578	0.236
	(0.218)	(0.215)	(0.219)	(0.202)	(1,528)	(1,365)	(0.219)	(0.202)
Observations	904	904	904	904	904	904	904	904

Note: Cluster(union council)-robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix

Table A1: Balance test between selected and non-selected in the treatment group

	(1)	(2)	(3)
	"selected"	"non-selected"	t-test: p-value
	N=648	N=23	(2)-(1)
Male	0.889	0.826	0.356
Age	21.835	22.141	0.699
Years of schooling	8.880	9.870	0.021
Disabled	0.009	0.000	0.657
Employment status before training	0.175	0.174	0.987
Average monthly household income	10,261	13,695	0.033
Number of household members	6.236	6.522	0.545
VOD member	0.053	0.087	0.492
Father's years of schooling	4.041	4.739	0.394
Mother's years of schooling	3.176	5.043	0.006
Agricultural land owned	0.286	0.217	0.475

Note: Employment status is an indicator variable taking: 0= unemployed, 1= wage or self-employed.

Table A2: Comparison of treatment effects with and without the non-selected individuals into the vocational training

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Training completed		Employed after 3 months		Monthly income, 3-month average		Employed at the time of last survey	
	Non- selected included	Non- selected excluded	Non- selected included	Non- selected excluded	Non- selected included	Non- selected excluded	Non- selected included	Non- selected excluded
"Treated"	0.0865**	0.118***	0.126***	0.141***	1,017***	1,106***	0.132***	0.148***
	(0.0350)	(0.0346)	(0.0365)	(0.0371)	(307.5)	(315.0)	(0.0364)	(0.0370)
Male	0.111***	0.113***	0.277***	0.285***	2,339***	2,400***	0.277***	0.285***
	(0.0381)	(0.0372)	(0.0385)	(0.0393)	(285.2)	(291.7)	(0.0390)	(0.0398)
Age	0.0013	0.0016	-0.0021	-0.0021	29.05	28.51	-0.0031	-0.0031
	-0.0037	(0.0036)	(0.0043)	(0.0043)	(36.07)	(36.79)	(0.0043)	(0.0043)
Years of schooling	-0.0225***	-0.0215***	-0.0157**	-0.0154**	-64.52	-62.92	-0.0164**	-0.0162**
	(0.0058)	(0.0057)	(0.0069)	(0.0069)	(53.22)	(53.90)	(0.0069)	(0.0069)
Employed before training	0.0270	0.0226	0.127***	0.126***	765.4**	763.6**	0.125***	0.124***
	(0.0306)	(0.0296)	(0.0371)	(0.0371)	(329.0)	(331.8)	(0.0363)	(0.0363)
Father's years of schooling	-0.0030	-0.0039	-0.0038	-0.0044	-12.52	-17.01	-0.0025	-0.0031
	(0.0040)	(0.0039)	(0.0045)	(0.0046)	(35.94)	(36.45)	(0.0045)	(0.0045)
Mother's years of schooling	-0.0087*	-0.0050	-0.0093*	-0.0073	-49.21	-34.80	-0.0086	-0.0065
	(0.0052)	(0.0051)	(0.0055)	(0.0056)	(45.50)	(47.10)	(0.0055)	(0.0056)
Ownership of agricultural land	0.0597*	0.0535*	0.0145	0.0124	318.9	320.9	0.0230	0.0211
	(0.0308)	(0.0299)	(0.0361)	(0.0364)	(320.5)	(324.5)	(0.0358)	(0.0360)
Number of household members	0.0065	0.0066	0.0018	0.0010	4.717	-1.214	0.0053	0.0046
	(0.0057)	(0.0056)	(0.0065)	(0.0067)	(52.72)	(53.95)	(0.0065)	(0.0067)

Constant	0.779*** (0.109)	0.749*** (0.105)	0.380*** (0.123)	0.376*** (0.125)	1,082 (1,017)	1,092 (1,048)	0.408*** (0.123)	0.405*** (0.125)
Observations	927	904	927	904	927	904	927	904
R-squared	0.268	0.296	0.205	0.214	0.182	0.188	0.220	0.231

Note: Training batches are controlled. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1