Evaluating the Effectiveness of a Subsidized Training Program for Low Income Women: Evidence from a Randomized Field Experiment in India*

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Abstract

This paper examines the economic returns from participating in a six month long free vocational education program offered to women residing in two major disadvantaged areas of New Delhi, India. The availability of pre and post-training data in an experimental framework allows us to measure the intent-to-treat effects of this training program on employment, hours worked, job search, female empowerment, entrepreneurship and measures of life satisfaction. We find that the program in a very short time has generated substantial improvement in labor market outcomes for these women. In particular, we find that women who were randomly offered to participate in the training program are almost 5 percentage points more likely to be self employed compared to women who were not offered the training. This is consistent with the large increase observed in the percentage of women who buy a sewing machine between the two survey rounds. We also find that chosen women are 12 percentage points more likely to look for a job and are on an average working close to 2 more hours in the post-training period compared to those who were not offered the training. However, we find the training program has limited effects on empowerment and happiness, at least in the short run.

Keywords: Vocational education, Panel data, India, Economic returns, Labor

JEL Classification: I21, J19, J24, 015

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1 Introduction

The economic transformation that has happened in India over the last two decades has been one of the great success stories of our times. As stifling government regulations have been lifted, entrepreneurship has flourished, and the country has become a high-powered centre for skill based industries. On the back of this development India has been termed as the next economic super power. The same period has also seen a rapid increase in the growth rate of the country - the average rate of growth of India over the last two decades has been more than 7 percent per annum, a far cry from the so-called Hindu rate of growth that formed the upper bound on the growth rate in the three decades prior to the period of economic reforms. This has been accompanied by significant reduction in rates of poverty across the country. However, it is also now accepted that inequality has increased, indicating that all sections of the population are unable to benefit from the phenomenal growth process that the country as a whole has experienced. It has been argued that individuals (at least in certain sections of the society) lack the necessary skills that can enable them to take advantage of the opportunities potentially coming their way.

At the same time entrepreneurs have been complaining of an acute shortage of skilled manpower resulting in a supply side bottleneck that is having a significant negative impact on the growth process. In a recent survey, entrepreneurs indicate the lack of skilled work force as a major bottleneck to growth. The specific example they cite is garment makers not able to find workers with the basic level of skill (Banyan, 2011).

With this background in mind, it is worth examining the impacts of participating in a program aimed at improving skills. Specifically we examine the impact of participating in a program on vocational education.[1] Many countries, faced with nagging unemployment on one hand, and increased demand for specialized labor in manufacturing and service sectors on the other, have promoted vocational training programs (Grubb, 2006).[2] There now

[1] Vocational education or vocational education and training (VET) is an education that prepares trainees for jobs that are based on manual or practical activities, traditionally non-academic, and totally related to a specific trade, occupation, or vocation. It is sometimes referred to as technical education as the trainee directly develops expertise in a particular group of techniques. See http://en.wikipedia.org/wiki/Vocational_education.

[2] Australia, Finland, England, Germany, Netherlands, Austria, Sweden, Switzerland, Norway, Spain, Hong Kong, New Zealand, Paraguay, United States, India, Argentina, Chile, Peru, Uruguay, to name a

exists a fairly large literature that assesses the impact of participating in such programs on earnings and employment opportunities of the participants using data from developed countries.[3] The general conclusions that arise from the US and European experiences is that the impacts of job training are generally modest, at best and that the effectiveness of training varies with the characteristics of participants and the type of training (see Heckman, Lalonde, and Smith (1999) and Kluve (2006) for systematic reviews). However, to apply these findings to developing country economies may be inappropriate. First, the returns to training may be higher in developing countries due to very low levels of formal education and skill accumulation. Second, much of this literature also uses non-experimental data, and therefore cannot estimate the causal effect of training on employment related outcomes due to selection bias. This is because participation in training programs is often voluntary, making it difficult to disentangle the impact of training from other factors such as innate ability or preferences that have a direct affect on the outcome variable. Both Lalonde (1986) and Ashenfelter and Card (1985) make a strong case for the use of experimental evaluation method in assessing the impact of labor market training programs on welfare.

Evidence on the effectiveness of training in developing countries is more limited. Betcherman, Olivas, and Dar (2004), for example, in their review of 69 impact evaluations of unemployed and youth training programs, find only 19 in developing countries. They conclude that training impacts in developing countries (Latin America in particular) are more positive than the impacts of programs in the United States and Europe. Nopo and Saavedra (2003) on analyzing a sample of training programs in Latin America reach essentially the same conclusion: employment and income impacts of the programs tend to exceed the impacts in developed countries. But most of the programs that have been analyzed here are non-experimental. There is very limited experimental evidence of the impact of participation in vocational training programs in developing countries: Attanasio, Kugler, and Meghir (2011) and Card, Ibarraran, Regalia, Rosas, and Soares (2011) are two exceptions.[4]

few. See Annex 2 of Betcherman, Olivas, and Dar (2004) for a complete list of countries and details on skill building and other labor market training programs that they offer.

[3]The earliest papers in the literature are by Ashenfelter (1978), Ashenfelter and Card (1985) and Card and Sullivan (1988), to more recent work by Hotz, Imbens and Klerman (2006).

[4]Hjort, Kremer, Mbiti, and Miguel (2011) and Field, Linden, and Wang (2012) are currently conducting similar trials in Kenya and Mongolia respectively. The results of both these projects are as yet unavailable.

Card, Ibarraran, Regalia, Rosas, and Soares (2011) using data from a government subsidized training program for low-income youth in urban areas of the Dominican Republic find no evidence to support the prior non-experimental evidence that participating in such a program has a significant impact on employment. They obtain evidence of a marginally significant impact on hourly wages, and on the probability of health insurance coverage, conditional on employment but find no significant impact of the training program on the subsequent employability of trainees. Attanasio, Kugler, and Meghir (2011) evaluate the impact of a randomized training program for disadvantaged youth introduced in Colombia in 2005. They find that the program raised earnings and employment for women and using a simple cost-benefit analysis of the results they argue that the program generates much larger net gains than those found in developed countries.

This paper adds to this limited literature by examining the impact of participating in a vocational education program on welfare outcomes.[5] The program was targeted to women between ages 18 and 39 years with a minimum of 5 or more grades of schooling residing in certain disadvantaged areas (North Shahdara and South Shahdara) of Delhi in India. The six month long free training program in stitching and tailoring (conducted by two local NGOs) was offered to all women satisfying this criterion. Those who applied for the program were randomly assigned into two groups - the treatment group (women who were offered the training) and the control group (women who were not offered the training). The experimental design along with the availability of pre and post training data allows us to measure the intent-to-treat effects of this program on labor market outcomes (such as probability of being employed, job search, and number of hours worked) and measures of women's empowerment (participation in rotating savings and credit association and control over resources, ownership and operation of personal bank accounts), entrepreneurship (ownership of sewing machine) and measures of happiness (at work and job).

The follow-up data was collected six months after the completion of the program and hence the pre and post-training data used here can only measure the short-run gains from being offered to participate in this training program. We find that women who were offered to participate in the program are close to 5 percentage points more likely to be self-employed

[5] We use the terms *vocational education* and *training program* interchangeably throughout the paper.

and 4 percentage points more likely to be employed for casual wage work in 2011 compared to women who were not offered to participate in the program. We also find that women who were offered the training program spend an additional 2 hours working during the last week and 12 percentage points more likely to be looking for a job in the post-training period. Finally we find some evidence that the program affected entrepreneurship: women who were offered to participate in the program exhibited in the post-training period a 16 percentage point increase in the likelihood of owning a sewing machine compared to those who were not offered to participate in the program. We find that these effects are fairly heterogenous, in particular, the training program has had no impact among women offered to participate from the North-Shahdara region. We believe that this is primarily cultural (in terms of socio-economic characteristics the two localities are quite different), but more work is needed to provide a clear explanation on this finding.

2 Experimental Design

2.1 The Program

This paper uses pre and post training data to measure the economic returns from participating in a voluntary vocational education program. The vocational education program in stitching and tailoring services was jointly administered by two non-governmental organizations (NGOs): Pratham Delhi Education Initiative (henceforth Pratham) and Social Awakening Through Youth Action (henceforth Satya) in selected disadvantaged areas (or resettlement colonies) of North and South Shahdara regions of New Delhi, India. Pratham is the largest NGO in India working to provide quality education to underprivileged children in India. Satya on the other hand is a small NGO which specializes in providing access to vocational education programs to residents in poor communities. Pratham and Satya partnered to provide a rigorous six month long vocational education program in stitching and tailoring services with the aim of making women in these areas adept in making clothes for children, and both adult men and women. See Figure 5 for examples of what the women were taught to stitch during this period. Pratham's long-term plan is to provide access to vocational-education to women in their program areas and they used this

program to as a starting point to quantify as to the economic returns from participating in such a vocational education program. In May 2010, a complete census was administered in the targeted areas in South Shahdara and North Shahdara region in New Delhi as identified by Pratham (see Figure 5 for the location of these regions within Delhi). In an extensive advertisement campaign that followed the census and lasted for two-three weeks targeted all women between 18 and 39 years of age with 5 or more grades of schooling. The program was offered to all eligible women: they were informed of the program and the associated details of the program such as - the location of the training centers (two in the South Shahdara region and three in North Shahdara), the extent of commitment required (participants were required to commit up to two hours per day in a five-day week), the method of selection (random), course content and the expected time-span of the program (6 months, starting August 2010). All selected participants were required to deposit Rs 50 per month for continuing in the program. This required participants to be ready to commit a total of Rs 300 for the entire duration of the training program with a promise from the NGO's that women who stayed through the entire duration of the program would be repaid Rs 350.[6] Finally the potential participants were also told that they would receive a certificate on completing the program. The advertisement for the program is presented in Figure 5. Satya and Pratham employees held joint information sessions, where women had the opportunity to meet with representatives from the two NGOs to discuss and clarify questions about the program. By the end of June 2010, Pratham received 658 applications - 244 applications were received in South Shahdara and 414 applications were received in North Shahdara.

Since, participation in training programs is often voluntary, it is difficult to disentangle the impact of training from unobservables that may have a direct affect on the outcome variable. Due to selection bias and financial constraints, all applicants were randomly assigned into two groups - the treatment and the control group. Two-thirds, that is, 164 of the 244 applicants from South Shadara and 278 of the 414 applicants from North Shahdara were randomly assigned to the treatment group (women who were offered to participate in

[6]This feature is unique to the program and was introduced by the implementing NGOs to increase commitment and encourage regular attendance. The amount of Rs 50 per month was around 1 percent of the average household income for the population. All eligible women were informed of this deposit requirement.

the 6 month long training in stitching and tailoring) and the remaining one-third, 80 from South Shahdara and 136 from North Shahdara were assigned to the control group (women who were not offered to receive the 6 month long stitching and tailoring services). Figure 5 provides a schematic representation of the experimental design and chronology of events.

2.2 Data - Baseline, Follow-up and Attrition

2.2.1 Baseline Data

In July 2010, a baseline household survey was targeted to all 658 women who applied to the program. However, actual data could only be gathered for 90 percent of the targeted respondents due to respondent's unavailability and occasional refusal to participate in the survey. The completion rates were fortunately, only marginally higher in the treatment group (92 percent) than the control control group (85 percent). Our baseline data therefore consists of 594 women, of whom 409 belong to the treatment group and the remaining 185 belong to the control group. The household questionnaire was designed to collect detailed information on household demographic characteristics (age, gender, enrolment status, schooling outcomes, etc. of all members in the household); ownership of household assets and household loans; labor market outcomes (full time, part time, and self employment status in the past 30 days, hours worked, job search), quality of life and measures of bargaining power for all women who applied to the program.

Specifically we consider a number of different outcome variables of interest. The first set of outcome variables relate to labour market outcomes.

Casual Employment: Did the woman secure casual wage employment in the 30 days prior to the survey (Casual Employment = 1 if Yes)?

Permanent Employment: Whether the woman was employed as a permanent wage employee in the 30 days prior to the survey (Permanent Employment = 1 if Yes)?

Self Employment: Did the woman earn any income from self-employment in the 30 days prior to the survey (Self Employment = 1 if Yes)?

Any Employment: Whether the woman has any form of employment in the 30 days prior to the survey (Any Employment = 1 if Yes)?

Hours Worked: How many hours did the woman spend working in the last week prior to the survey (Hours Worked continuous Variable, lower bound = 0)?

Job Search: Did the woman look for more work in the last week prior to the survey (Job Search = 1 if Yes)?

Participation in such a program is also likely to affect women in other ways as well. Our second set of outcome variables relate to empowerment, entrepreneurship and happiness within the household.

Control over Resources: Is the woman able to choose/decide how to spend the money she has earned (Control over Resources = 1 if Yes)?

Rosca Member: Is the woman a member of a rosca/chit fund (Rosca Member = 1 if Yes)[7]?

Personal Bank Account: Do you have a bank account in your name (Personal Bank Account = 1 if Yes)?

Operate Bank Account: Are you able to operate your bank account on your own? (Operate Bank Account = 1 if Yes)?

Own Sewing Machine: Do you have a sewing machine at home? (Own Sewing Machine = 1 if Yes)?

Happy at Work: How satisfied is the woman with the work she does (Categorical variable = 1 if very satisfied; 2 if moderately satisfied; 3 if moderately dissatisfied; and 4 if not satisfied)?

[7]Anderson and Baland (2002) propose an explanation of membership of roscas in Kenya (similar to chit funds in India) based on conflictual interactions within the household. In their paper, participation in a rosca is a strategy a wife employs to protect her savings against claims by her husband for immediate consumption. So membership in a rosca could be viewed as a measure of bargaining power of the woman.

Happy at Home: How satisfied is the woman with her family life (Categorical variable = 1 if very satisfied; 2 if moderately satisfied; 3 if moderately dissatisfied; and 4 if not satisfied)?

The evaluation design described in the previous section indicates that all applicants were randomly assigned to one of the two groups - treatment and control. An immediate implication of this random assignment is that none of the baseline characteristics must be statistically significantly different between the treatment and the control group. To test this assumption, we report pre-intervention averages of all variables used later in the regression analysis. Columns 2 and 3 of Table 1 report sample averages for the treatment and the control group respectively. Column 4 reports mean differences between the treatment and statistical significance of this difference. There are no systematic differences in labor market outcomes between the treatment and the control group: the exceptions are hours worked (significantly higher for women in the treatment group) and job search (significantly higher for women in the control group). Women in the two groups also exhibit similar levels of happiness, and bargaining power. Only 5 percent of the women in the sample are employed. The average woman in our sample is 22 years old and more than 50 percent of these women have not completed secondary schooling. The only statistically significant difference between women in the two groups is in prior experience in stitching and tailoring: women in the control group appear to be 12 percentage points more likely to have prior experience in stitching and tailoring relative to women in the treatment group. We will be controlling for this baseline experience in our main regressions to account for pre-existing differences between the two groups. We also compute the joint F test from the regression of the treatment dummy on all baseline characteristics reported in Table 1. The F-statistic on the full sample is 1.23 ($p-value = 0.23$); therefore, we cannot reject the null that the baseline characteristics of women in the treatment group are similar to those of the women in the control group. Overall, our test results suggest that the randomization seems to have worked very well.

Table 2 summarizes pre and post training differences in the outcome variables of interest. Here the pre-training sample is restricted to women who can be surveyed in both 2010 and 2011. Notice that while pre-training differences between the treatment and control

group is small, the post-training differences between the treatment and control group increases substantially, in particular, for all labor market outcomes. This difference is further reflected in our regression results. The small and statistically insignificant pre-training differences in measures of happiness and empowerment between the two groups seems to have changed in sign between the baseline and follow-up survey. The change in signs over the two periods could be suggestive of the presence of measurement error in self-reported variables.

2.2.2 Follow-up Data and Attrition

During July - August 2011, approximately 6 months after the training program was completed, we requested all women who completed the baseline survey to participate in a follow-up survey. Attempts were made to track every woman who was in our final 2010 sample. Despite all efforts, we were unable to trace 90 of the 594 women, resulting in an overall attrition rate of 15 percent. Additionally the attrition rate is not significantly different between the treatment and the control group: 15.6 percent attrition in the treatment group and 14 percent in the control group ($p - value = 0.6166$). The attrition rates found here are comparable to other papers in this literature. For example: Attanasio, Kugler, and Meghir (2011) are unable to follow around 18.5 percent of their baseline sample after about 13-15 months after the conclusion of their program and Card, Ibarraran, Regalia, Rosas, and Soares (2011) are unable to track around 20 percent of their baseline sample $18 - 24$ months after their initial application into the program.

We start with a description of the attrition process in Tables 3 and **??**. Table 3 captures differences in average baseline characteristics between the attriters and non attriters. In terms of socio-economic characteristics, religion, prior experience in stitching and tailoring at the baseline and location of residence are the three characteristics that are significantly different between attriters and non-attriters. Hindus and those with prior experience in stitching and tailoring are over-represented in the sample of non-attriters, while residents of North Shahdara are significantly more likely to be attriters.[8] To examine how the baseline

[8]The North and South Shahdara samples are quite different in terms of the observables and socio-economic characteristics. We come back to this issue below.

socio-economic characteristics affect the likelihood of attrition, in Table 4 we present the marginal effects from a probit regression. Where, the dependent variable here is $ATTRITE$ that that takes the value of 1 if the woman could not be traced for the follow-up interview in 2011 and 0 otherwise. We find that an additional year in age increases the likelihood of attrition by 0.1 percentage point. Women with prior experience in stitching and tailoring (relative to those without prior experience) are 5.5 percentage points less likely to drop out of the sample.

The identification of unbiased program effects relies upon the assumption of no selective attrition between the treatment and the control group. Any systematic difference in attrition rates between the treatment and the control group can bias our coefficient estimates. To examine this further, in Table 5 we present the baseline differences in the outcome variables of interest between attriters and non-attriters for both the treatment and the control group. Mean differences in outcome variables between the non-attriters and attriters in the treatment group are not statistically significantly different from average differences in the variables between attriters and non-attriters in the control group (see column (7)), indicating that there is no evidence of differential attrition between the treatment and control group.

To examine this further, we regress the different outcome variables of interest for the baseline sample, on the baseline observables, the attrition dummy ($ATTRITE$), the treatment dummy and a set of interaction terms between the attrition dummy and each of the explanatory variables. The non-interacted coefficients give us the effects for the non-attrited women while the interacted coefficients give us the difference between the attriters and non-attriters at the baseline. A test of the joint significance of the $ATTRITE$ dummy and the interaction terms tells us whether the attriting women are different from the non-attriting women. The results are presented in Tables 6 and 7. Notice the null hypothesis that the attriting women are no different from the non-attriting women (the joint test of the $ATTRITE$ dummy and the interaction terms) is rejected in only 2 out of the 6 labor market outcome variables and for 3 out of 7 the other outcome variables indicating that in general attriting women are no different from the non-attriting women in terms of the outcome variables of interest at the baseline. Additionally the coefficient estimate

associated with the interaction term $TREATMENT \times ATTRITE$ is never statistically significant in any of the 13 regressions in Tables 6 and 7. The main coefficient estimate of interest in table 7 is the interaction term between the attrition dummy and the treatment dummy which is statistically insignificant and hence, we cannot reject the null hypothesis of no differential attrition between the treatment and the control group in our sample.

3 Estimation Strategy

The panel dimension of the data along with the randomized evaluation design implemented here allows us to measure the causal effects of the vocational training program on labor market and other socio-economic outcomes. We estimate the following difference-in-difference model controlling for any pre-program differences between the treatment and the control group.

$$Y_{it} = \beta_0 + \beta_1 TREATMENT_i + \beta_2 TIME_t + \beta_3 TRAINING_{it} + \sum_{j=1}^{K} \gamma_j \mathbf{X}_{ij} + \epsilon_{it} \quad (1)$$

Here Y_{it} is an outcome of interest for woman i in year t (for example whether the woman secured casual wage employment in the 30 days prior to the survey); $TREATMENT_i$ dummy takes a value 1 if assigned to the treatment group and zero otherwise. The treatment group controls for all pre-program differences between the two groups. $TIME_t$ is a dummy variable takes a value 1 if year is 2011(that is, the post training period) and zero otherwise. $TRAINING_{it}$ is constructed by interacting the $TREATMENT$ dummy with the $TIME$ dummy and takes the value 1 for a woman in the treatment group in the post training period and 0 otherwise. In a difference-in-difference model specified in equation (1), β_3 measures the causal effect of the vocational training program on the outcome variables of interest. Note that even if a woman dropped out through the course of the program, she remains assigned to the treatment group, as a result, β_3 captures the intention to treat (ITT) estimates. $\mathbf{X}$ is a set of additional individual and household level characteristics that control for any remaining pre-treatment differences between women in the treatment and control groups. Finally, ϵ_{it} is the random i.i.d. disturbance term. We also use equation (1) to estimate heterogeneous program effects by restricting the sample

to particular sub-groups.

The set of pre-treatment (baseline) explanatory variables that we control for in the regressions include: *Age* of the woman in years, *Completed secondary school* (= 1 if the woman completed class Ten and 0 otherwise), *SC* (= 1 if the respondent belongs to a scheduled caste and 0 otherwise), *Hindu* (= 1 if religion = Hindu, 0 otherwise), *Experience in stitching and tailoring*, a self-reported measure of past experience in stitching and tailoring service (=1 if the woman had any prior experience and 0 otherwise), *Married* (=1 if the woman is married and 0 otherwise), *Dependency ratio* defined as the ratio of the number of children under 5 in a household and the number of adult females in the household and a dummy for residence in *North Shahdara*.

4 Results

4.1 Intent-to-Treat Effects

Table 8 report the intent-to-treat (ITT) estimates capturing the causal effect of the training program on the different labour market outcomes. The results in Panel A imply that the program resulted in significant improvement in labour market outcomes. The training increases the probability of being employed for casual wage work by 4.1 percentage points (columns 1) and the probability of being self employed by 4.4 percentage points (column 3) respectively. We find that the effects for improvements in permanent employment, any employment and hours worked are also positive (0.023, 0.047 and 1.65), though not statistically significant (columns 2, 4 and 5 respectively). Training increases the probability that a women looks for a job by 12 percentage points (column 6).

Remember that at the baseline women in the treatment group worked more hours in the last week prior to the interview while women in the control group were more likely to have searched for employment in the last week prior to the interview (see Table 1). To examine the extent to which baseline differences might be under estimating the effect of training on hours worked or obscuring mean reversion in job search, in Panel B we report the basic difference-in-difference program impacts without controlling for baseline covariates.

The estimated impacts on hours worked and job search are robust to the exclusion of the baseline covariates. An alternative way of examining this issue would be to control directly for the baseline outcome variable - include the lagged value of the relevant outcome variable of interest. The results from this regression are reported in Panel C of Table 8. If anything the effects of $TRAINING$ become stronger when we include the baseline outcome variable, particularly so for hours worked and job search. Finally in Panel D we present the inverse probability weighted ITT estimates. The results are robust to the inclusion of the weights; not surprising again since attriting women are not systematically different compared to the non-attriting women at the baseline (see Table 6).

The ITT estimates capturing the causal effect of the training program on the empowerment, entrepreneurship and happiness indicators (control over resources, membership of rosca, person bank account, being able to operate the bank account, ownership of sewing machine happy at home, happy at work) are presented in Table 9. Participation in the training program does not have a statistically significant effect on any of empowerment and happiness variables. This is perhaps not surprising since improvements in bargaining power and happiness is not expected over a short period of time. There is however a positive and significant effect on the ownership of a sewing machine: women who were offered to take part in the program are 16 percentage points more likely to own a sewing machine. This increase in the likelihood of owning a sewing machine could be viewed as a measure of entrepreneurship. At the baseline survey the applicants were asked as to why they wished to participate in the program. The majority of the applicants either wanted to use the skills developed to increase income or to set up small businesses. Purchasing a sewing machine is the first step in this direction. The results are consistent to the different specifications: no baseline characteristics, controlling for baseline outcome variables and using inverse probability weights to control for the bias caused by potential non random attrition. See Table 7.

4.2 Heterogeneity of Impacts

As discussed earlier the program was conducted in two different locations (North Shahdara and South Shahdara) within Delhi. The two locations (which were chosen by Pratham)

however were quite different in terms of pre-treatment (baseline) characteristics. The sample means at the baseline for the two locations presented in Table 10 confirm the extent of sample heterogeneity. In terms of the outcome variables of interest, pre-treatment casual employment, permanent employment, self employment, any employment, job search are all significantly higher for the South Shahdara sample compared to the North Shahdara sample. There are significant differences in terms of the other socio-economic characteristics as well. Women in the South Shahdara sample are older, more experienced in stitching and tailoring, are more likely to be married and are more likely to be Hindu. In fact the distribution of religion appears to be particularly different across the two samples: while around 95 percent of the sample of South Shahdara women are Hindu, only 18 percent of the North Shahdara women are so.

Given the significant differences at the baseline, it is worth examining how heterogenous the impacts are. To do so we interact the three variables $TREATMENT$, $TIME$ and $TRAINING$ with a North Shahdara (NS) dummy and estimate an extended version of equation (1) as follows:

$$\begin{aligned} Y_{it} &= \beta_0 + \beta_1 TREATMENT_i + \alpha_1(TREATMENT_i \times NS) \\ &+ \beta_2 TIME_t + \alpha_1(TIME_t \times NS) \\ &+ \beta_3 TRAINING_{it} + \alpha_3(TRAINING_{it} \times NS) + \sum_{j=1}^{K} \gamma_j \mathbf{X}_{ij} + \epsilon_{it} \end{aligned} \tag{2}$$

Then the coefficient estimate of the non-interacted term $TRAINING$ (β_3) gives the causal estimates of the program on the South Shahdara sample while the coefficient estimate associated with the interaction term $TRAINING_{it} \times NS$ (α_3) gives the differential effect for the North Shahdara residents. The program effects on labour market outcomes, presented in Table 11, show that the effects are almost entirely driven by the effects on the South Shahdara women. The total effect for the North Shahdara women, given by $\beta_3 + \alpha_3$, is almost always 0 - the interaction term α_3 is always negative. The only exception is job search, though even here the interaction term is negative.

The effects on the other variables of interest (empowerment, entrepreneurship and happiness) are presented in Table 12. Here though the direction of effects are quite different

and indeed quite mixed. While women in South Shahdara offered the program experience a large and statistically negative significant effect on empowerment (captured by a 19 percentage point decline in the control over resources), there is no effect on the corresponding level of empowerment for the women residing in North Shahdara. There is no effect on rosca membership, whether the woman has a personal bank account and whether she is able to operate the bank account. Being offered the program significantly increases the likelihood of owning a sewing machine in both North and South Shahdara and the effect is significantly stronger in North Shahdara compared to South Shahdara (24 percentage points compared to 7.5 percentage points). The effects on happiness are also stronger for women in North Shahdara - women offered the program in North Shahdara are significantly less likely to be happy at home (21 percentage points) and at work (20 percentage points).

The results indicate very heterogeneous program impacts and very different channels through which the program affects women in the two locations. While the labour market effects of the program are quite minimal for the North Shahdara sample, women in North Shahdara benefit significantly in other ways - indeed even in the short run, offered in the program appears to have empowered women in North Shahdara more than women in South Shahdara and has resulted in women in North Shahdara becoming more entrepreneurial compared to women in South Shahdara.

5 Discussion

Youth underemployment, especially among less educated populations, has the potential to create significant social unrest and perpetuate poverty. The situation is particularly dire for women in low income households, despite the fact that it is now well accepted that increasing the income levels of women have strong current and intergenerational impacts. For example children (particularly daughters) of skilled mothers are likely to be more educated and are likely to be healthier. However, little is known about how best to help women in low income households and communities in developing countries to acquire skills, find jobs and increase self employment.

There are a number of potential different policy options. One would be to inject credit

and reduce the credit constraints that appear to hamper the ability of women to take advantage of their entrepreneurial skills. Indeed the entire microfinance revolution was built around this model - provide microloans that will serve as working capital for setting up small businesses leading to increased income over time. However recent results are increasingly skeptical of the success of such a model of development. For example de Mel, McKenzie, and Woodruff (2008) find using a field experiment in Sri Lanka that while the average returns to capital injection to microenterprises is very high (considerably higher than the average interest rates charged by microlenders), the effects are significantly gender biased. In a related paper de Mel, McKenzie, and Woodruff (2009) argue that the capital injections generated large profit increases for male microenterprise owners, but not for female owners. This finding has potentially serious implications for development policy because most microlending organisations target women. They argue that cash injections directed at women could be confiscated by their husbands and other members of their household leading to considerable inefficiencies.

One would-be alternative tool for expanding the labor market opportunities in these settings is vocational education (or skills training), which could help individuals learn a trade and acquire the skills needed to take advantage of employment opportunities, and create successful small businesses. One additional advantage to this kind of training is that it results in human capital that is specific to the person undertaking the training. However, little is known about the actual benefits of vocational education in developing countries. This paper adds to this very limited literature by examining the short run impacts (on labour market outcomes, empowerment, entrepreneurship and happiness) of participating in a voluntary vocational training program. The results are extremely encouraging. We find that the program in a very short time has generated substantial improvement in labor market outcomes for these women. In particular, we find that women who were randomly offered to participate in the training program are 5 percentage points more likely to be self employed compared to women who were not offered the training. This is consistent with the large increase observed in the percentage of women who buy a sewing machine between the two survey rounds. We also find that chosen women are 11 percentage points more likely to look for a job and are on an average working 2 more hours in the post-training period compared to those who were not offered the training. Finally we find some evidence

that the program affected entrepreneurship. However we find the training program has limited effects on empowerment and happiness, at least in the short run. These effects are much larger than those observed in developed countries and are consistent with the rather small but growing literature on vocational education and labor market outcomes in developing countries.

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Figure 1: The Vocational Education Program in Stitching and Tailoring

Figure 2: Map of the Program Areas

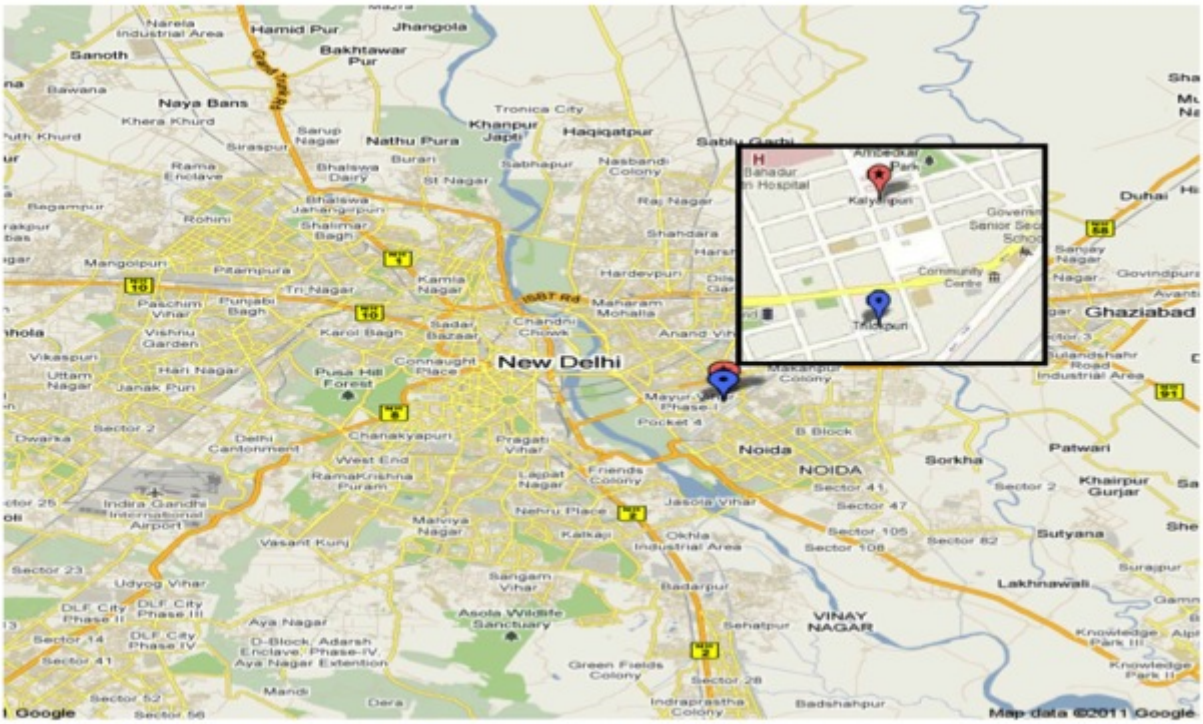
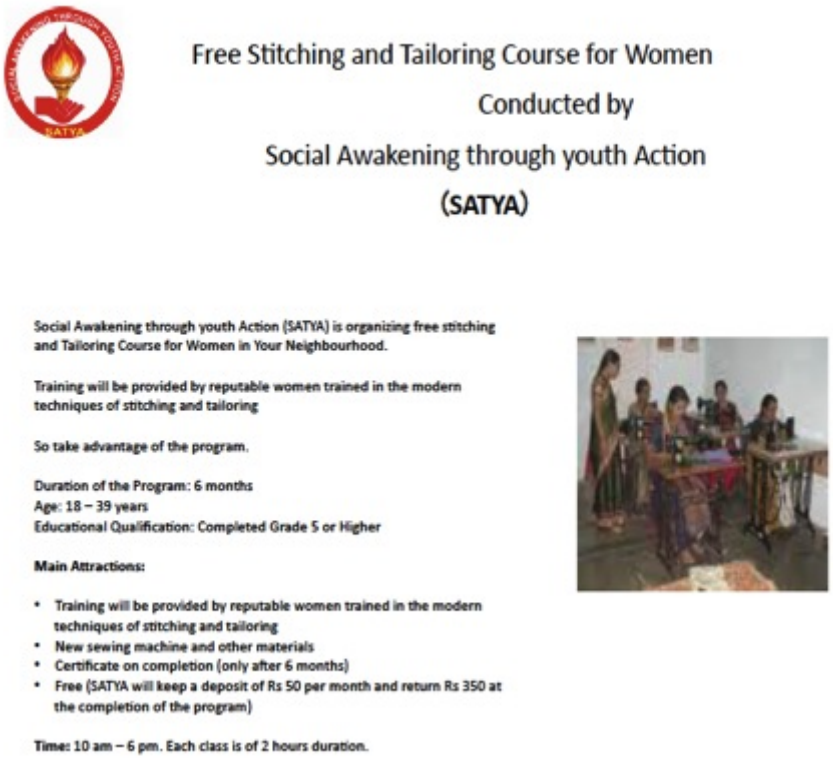


Figure 3: The Advertisement Campaign of the Program



Free Stitching and Tailoring Course for Women

Conducted by

Social Awakening through youth Action

(SATYA)

Social Awakening through youth Action (SATYA) is organizing free stitching and Tailoring Course for Women in Your Neighbourhood.

Training will be provided by reputable women trained in the modern techniques of stitching and tailoring

So take advantage of the program.

Duration of the Program: 6 months
Age: 18 – 39 years
Educational Qualification: Completed Grade 5 or Higher

Main Attractions:

- Training will be provided by reputable women trained in the modern techniques of stitching and tailoring
- New sewing machine and other materials
- Certificate on completion (only after 6 months)
- Free (SATYA will keep a deposit of Rs 50 per month and return Rs 350 at the completion of the program)

Time: 10 am – 6 pm. Each class is of 2 hours duration.

Figure 4: Chronology of Events

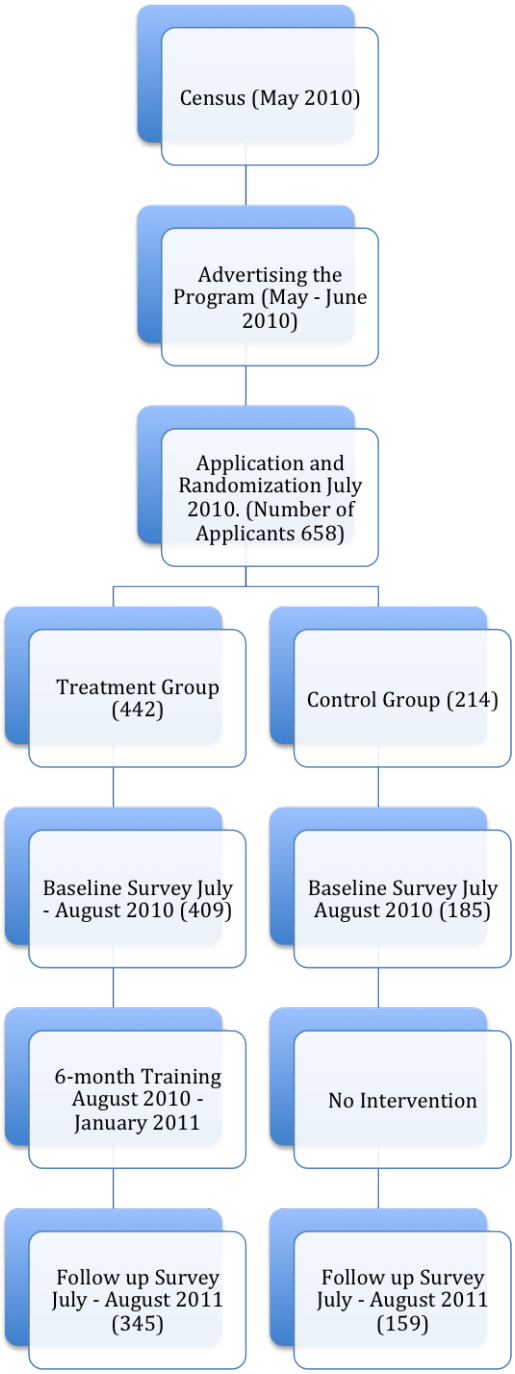


Table 1: Baseline Characteristics

	Full Sample (1)	Treatment (2)	Control (3)	Treatment-Control (4)
Outcome Variables				
Casual wage employment	0.010	0.012	0.005	0.007
				(0.008)
Permanent wage employment	0.032	0.034	0.027	0.007
				(0.015)
Self employment	0.024	0.024	0.021	0.003
				(0.013)
Any employment	0.049	0.051	0.043	0.008
				(0.019)
Hours Worked	1.840	2.37	0.67	1.70**
				(0.77)
Job Search	0.074	0.49	0.13	-0.07**
				(0.02)
Own Sewing Machine	0.352	0.313	0.438	0.125***
				(0.04)
Personal Bank Account	0.140	0.134	0.151	0.017
				(0.031)
Operate Bank Account	0.128	0.127	0.130	0.003
				(0.030)
Control over resources	0.411	0.41	0.39	0.02
				(0.04)
Rosca participation	0.114	0.11	0.10	0.01
				(0.02)
Happy at home	3.414	3.416	3.411	0.005
				(0.07)
Happy at work	3.433	3.467	3.357	-0.11
				(0.07)
Socioeconomic characteristics				
Age	22.333	22.40	22.19	0.21
				(0.51)
Completed secondary schooling	0.446	0.45	0.43	0.02
				(0.04)
Currently enrolled in school	0.244	0.24	0.25	-0.01
				(0.04)
Experienced in stitching/tailoring	0.268	0.22	0.35	-0.13***
				(0.03)
Married	0.335	0.34	0.31	0.03
				(0.04)
SC	0.510	0.51	0.50	0.01
				(0.04)
Hindu	0.471	0.47	0.46	0.01
				(0.04)
Dependency ratio	0.263	0.27	0.24	0.03
				(0.04)
Sample Size	594	409	185	
Test of joint significance				*F=1.23*
				p-value =0.23

Standard errors reported in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2: Summary Statistics: Pre and Post Training Differences in Outcome Variables

	Pre-Training			Post Training			
	Treatment	Control	Difference	Treatment	Control	Difference	Diff-Diff
	(1)	(2)	(3)	(4)	(5)	(6)	(7) [(6)-(3)]
Casual Employment	0.014	0.006	0.008	0.060	0.012	0.048	0.04**
							(0.018)
Permanent Employment	0.040	0.025	0.015	0.092	0.050	0.042	0.027
							(0.03)
Self Employment	0.026	0.025	0.001	0.060	0.012	0.048	0.047**
							(0.02)
Any Employment	0.057	0.044	0.013	0.13	0.06	0.07	0.053
							(0.03)
Hours Worked	2.44	0.55	1.89	5.084	1.47	3.612	1.72
							(1.09)
Job Search	0.052	0.12	-0.073	0.122	0.069	0.053	0.126***
							(0.04)
Control over Resources	0.420	0.39	0.03	0.45	0.49	-0.04	-0.07
							(0.06)
Rosca Member	0.11	0.10	0.01	0.049	0.038	0.012	0.002
							(0.03)
Personal Bank Account	0.142	0.157	-0.015	0.139	0.138	0.001	0.016
							(0.05)
Operate Bank Account	0.133	0.125	0.007	0.128	0.119	0.008	0.005
							(0.04)
Own Sewing Machine	0.32	0.43	-0.11	0.597	0.478	0.119	0.225***
							(0.07)
Happy at Home	3.437	3.433	0.004	3.272	3.352	-0.080	-0.083
							(0.010)
Happy at Work	3.47	3.35	0.12	3.333	3.365	-0.031	-0.14
							(0.09)
Sample Size	345	159		345	159		

Robust standard errors reported in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Difference Between attriters and Non-attriters

	Full Sample	Non-attriters	attriters	attriters - Non-attriters
	(1)	(2)	(3)	(4)
Age	22.27	22.17	22.86	0.69
Completed secondary schooling	0.45	0.44	0.46	0.01
Married	0.34	0.34	0.33	0.00
Hindu	0.47	0.49	0.34	-0.15 ***
SC	0.51	0.51	0.50	-0.01
Experienced in stitching/tailoring	0.27	0.28	0.18	-0.11 **
Dependency ratio	0.26	0.25	0.29	0.03
Resident of North Shahdara	0.62	0.60	0.74	0.14 ***
Sample Size	594	90	504	

Standard errors reported in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Likelihood of Attrition: Marginal Effects from a Probit Regression

	Attrition (ME)
	(1)
Treatment	0.009
	(0.031)
Age	0.008**
	(0.004)
Completed secondary schooling	0.006
	(0.029)
Married	-0.054
	(0.047)
Hindu	-0.053
	(0.043)
SC	0.010
	(0.029)
Experienced in stitching/tailoring	-0.055*
	(0.032)
Dependency ratio	0.019
	(0.034)
Resident of North Shahdara	0.043
	(0.043)
Sample Size	594

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Differential Attrition

	Treatment			Control			
	Non-attriters	attriters	Difference	Non-attriters	attriters	Difference	Diff-Diff
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Casual Employment	0.014	0.000	0.014	0.006	0.000	0.006	0.008
							(0.009)
Permanent Employment	0.041	0.000	0.041	0.025	0.038	-0.013	0.05
							(0.04)
Self Employment	0.026	0.016	0.010	0.025	0.000	0.025	-0.015
							(0.02)
Any Employment	0.058	0.016	0.042	0.044	0.038	0.006	0.036
							(0.04)
Hours Worked	2.443	1.969	0.475	0.553	1.385	-0.831	1.30
							(1.64)
Job Search	0.052	0.031	0.021	0.126	0.154	-0.028	0.05
							(0.07)
Control over Resources	0.42	0.40	0.02	0.390	0.423	-0.033	0.05
							(0.12)
Rosca Member	0.116	0.125	-0.009	0.107	0.115	-0.008	-0.001
							(0.08)
Personal Bank Account	0.142	0.094	0.048	0.157	0.115	0.042	0.006
							(0.08)
Operate Bank Account	0.133	0.094	0.040	0.126	0.154	-0.028	0.067
							(0.08)
Own Sewing Machine	0.328	0.234	0.093	0.434	0.462	-0.028	0.12
							(0.12)
Happy at Home	3.438	3.297	0.141	3.434	3.269	0.165	-0.02
							(0.19)
Happy at Work	3.475	3.422	0.053	3.358	3.346	0.012	0.04
							(0.20)
Sample Size	345	64		159	26		

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Are Attriting Women Different: Labour Market Characteristics at Baseline

	Casual Employment (1)	Permanent Employment (2)	Self Employment (3)	Any Employment (4)	Hours Worked (5)	Job Search (6)
$TREATMENT$	0.007	0.020	0.006	0.021	2.061***	-0.066**
	(0.010)	(0.018)	(0.015)	(0.021)	(0.736)	(0.028)
Age	0.002	0.005**	0.004*	0.007***	0.235*	0.005
	(0.001)	(0.002)	(0.002)	(0.003)	(0.135)	(0.003)
Completed Secondary	0.004	0.024	-0.014	0.032	0.500	-0.030
	(0.010)	(0.017)	(0.013)	(0.020)	(0.796)	(0.023)
Married	0.002	-0.042	-0.060**	-0.074**	-1.435	-0.031
	(0.018)	(0.027)	(0.024)	(0.033)	(1.727)	(0.039)
Hindu	0.009	0.034	0.014	0.042	1.924	0.004
	(0.016)	(0.028)	(0.018)	(0.032)	(1.483)	(0.031)
SC	-0.015	-0.006	0.011	-0.002	-0.478	0.085***
	(0.011)	(0.017)	(0.014)	(0.020)	(0.740)	(0.022)
Experienced	-0.003	0.038*	0.036*	0.061**	1.161	0.078**
	(0.012)	(0.023)	(0.018)	(0.027)	(1.148)	(0.030)
Dependency Ratio	0.012	0.016	0.024	0.019	-0.590	0.001
	(0.019)	(0.023)	(0.019)	(0.024)	(0.899)	(0.027)
North Shahdara	-0.002	0.000	-0.013	-0.000	1.782	-0.016
	(0.016)	(0.028)	(0.017)	(0.032)	(1.547)	(0.030)
$ATTRITE$	0.032	0.256*	-0.051	0.181	6.260	0.044
	(0.033)	(0.135)	(0.105)	(0.169)	(4.967)	(0.140)
$TREATMENT$	-0.007	-0.055	0.019	-0.032	-1.219	-0.045
$\times ATTRITE$	(0.010)	(0.037)	(0.028)	(0.046)	(1.650)	(0.073)
Age	-0.002	-0.010**	-0.004*	-0.013**	-0.024	-0.003
$\times ATTRITE$	(0.001)	(0.005)	(0.002)	(0.006)	(0.248)	(0.007)
Completed Secondary	-0.004	0.000	0.008	-0.014	0.037	0.075
$\times ATTRITE$	(0.010)	(0.029)	(0.017)	(0.033)	(2.125)	(0.062)
Married	-0.002	0.135	0.048	0.155	-1.103	0.166
$\times ATTRITE$	(0.018)	(0.089)	(0.030)	(0.094)	(4.169)	(0.107)
Hindu	-0.009	-0.027	0.085	0.063	-2.515	-0.143**
$\times ATTRITE$	(0.016)	(0.031)	(0.089)	(0.096)	(1.904)	(0.069)
SC	0.015	0.016	0.015	0.038	0.754	-0.057
$\times ATTRITE$	(0.011)	(0.021)	(0.027)	(0.033)	(2.171)	(0.053)
Experienced	0.003	-0.058*	0.028	-0.017	-0.669	0.025
$\times ATTRITE$	(0.012)	(0.030)	(0.059)	(0.066)	(2.445)	(0.094)
Dependency Ratio	-0.012	-0.052	-0.028	-0.058	-0.291	0.094
$\times ATTRITE$	(0.019)	(0.040)	(0.021)	(0.042)	(1.422)	(0.074)
North Shahdara	0.002	-0.026	0.104	0.066	-5.243*	0.017
$\times ATTRITE$	(0.016)	(0.039)	(0.084)	(0.093)	(2.833)	(0.064)
Constant	-0.032	-0.123**	-0.054	-0.154**	-6.474**	-0.030
	(0.033)	(0.058)	(0.044)	(0.067)	(2.993)	(0.068)
F-test	0.60	1.59	1.01	1.97**	0.78	1.90**
Observations	594	594	594	594	594	594

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
#: F test for joint significance of $ATTRITE$ dummy and all interactions

Table 7: Are Attriting Women Different: Empowerment, Entrepreneurship and Happiness at Baseline

	Control over Resources	Member Rosca	Personal Bank Account	Operate Bank Account	Own Sewing Machine	Happy at Home	Happy at Work
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$TREATMENT$	0.032	0.022	-0.022	0.011	-0.039	-0.005	0.109
	(0.046)	(0.031)	(0.034)	(0.032)	(0.043)	(0.074)	(0.072)
Age	-0.003	0.001	0.003	0.002	-0.000	-0.006	-0.012
	(0.006)	(0.004)	(0.005)	(0.004)	(0.006)	(0.009)	(0.010)
Completed Secondary	0.058	0.057*	0.111***	0.055*	0.017	0.193***	0.094
	(0.042)	(0.029)	(0.032)	(0.031)	(0.038)	(0.072)	(0.070)
Married	0.164**	-0.027	0.014	-0.032	-0.016	0.231*	0.241*
	(0.081)	(0.043)	(0.053)	(0.048)	(0.069)	(0.123)	(0.123)
Hindu	0.064	0.042	0.047	0.052	0.032	-0.247**	-0.197*
	(0.061)	(0.043)	(0.046)	(0.044)	(0.060)	(0.118)	(0.116)
SC	0.017	0.058**	-0.022	-0.033	-0.002	-0.030	-0.103
	(0.041)	(0.029)	(0.031)	(0.031)	(0.039)	(0.073)	(0.070)
Experienced	0.122**	0.108***	-0.010	0.036	0.515***	0.032	-0.030
	(0.052)	(0.037)	(0.039)	(0.039)	(0.045)	(0.084)	(0.084)
Dependency Ratio	-0.029	-0.003	-0.052*	-0.040	-0.002	-0.062	-0.076
	(0.053)	(0.027)	(0.031)	(0.027)	(0.044)	(0.087)	(0.078)
North Shahdara	-0.226***	0.058	-0.087*	-0.035	0.047	-0.251**	-0.082
	(0.064)	(0.042)	(0.052)	(0.048)	(0.060)	(0.120)	(0.120)
$ATTRITE$	-0.910***	0.159	-0.465*	-0.648***	-0.161	-0.593	-0.607
	(0.314)	(0.217)	(0.237)	(0.211)	(0.319)	(0.786)	(0.801)
$TREATMENT$	0.020	0.019	-0.006	-0.075	-0.108	0.021	-0.023
$\times ATTRITE$	(0.115)	(0.082)	(0.069)	(0.075)	(0.105)	(0.199)	(0.203)
Age	0.020	-0.002	0.025**	0.028***	-0.001	0.011	0.029
$\times ATTRITE$	(0.013)	(0.008)	(0.010)	(0.009)	(0.013)	(0.028)	(0.028)
Completed Secondary	0.163	0.006	-0.037	0.065	0.099	0.256	0.273
$\times ATTRITE$	(0.104)	(0.073)	(0.058)	(0.066)	(0.089)	(0.180)	(0.177)
Married	0.010	-0.154	-0.190*	-0.105	0.050	-0.577	-0.639*
$\times ATTRITE$	(0.198)	(0.108)	(0.103)	(0.104)	(0.175)	(0.360)	(0.371)
Hindu	0.043	0.009	0.023	0.078	0.068	0.119	-0.016
$\times ATTRITE$	(0.172)	(0.094)	(0.069)	(0.118)	(0.158)	(0.357)	(0.349)
SC	0.186*	-0.017	-0.020	0.031	0.010	-0.005	0.050
$\times ATTRITE$	(0.110)	(0.078)	(0.062)	(0.070)	(0.101)	(0.208)	(0.219)
Experienced	0.224*	0.144	-0.075	-0.120	0.102	-0.075	0.143
$\times ATTRITE$	(0.126)	(0.128)	(0.083)	(0.087)	(0.119)	(0.251)	(0.256)
Dependency Ratio	0.107	0.051	0.047	0.048	-0.036	0.052	0.096
$\times ATTRITE$	(0.115)	(0.055)	(0.059)	(0.061)	(0.102)	(0.181)	(0.178)
North Shahdara	0.329*	-0.127	-0.054	0.052	0.204	0.313	-0.093
$\times ATTRITE$	(0.177)	(0.105)	(0.098)	(0.122)	(0.154)	(0.366)	(0.360)
Constant	0.433***	-0.063	0.085	0.073	0.205	3.705***	3.743***
	(0.144)	(0.087)	(0.107)	(0.095)	(0.135)	(0.222)	(0.233)
F-test	2.82**	0.89	1.70*	3.59***	0.87	1.31	0.64
Observations	594	594	594	594	594	594	594

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
#: F test for joint significance of $ATTRITE$ dummy and all interactions

Table 8: ITT Estimates of Labour Market Outcomes

	Casual Employment (1)	Permanent Employment (2)	Self Employment (3)	Any Employment (4)	Hours Worked (5)	Job Search (6)
Panel A: Baseline Characteristics Included						
TREATMENT	0.006	0.018	0.004	0.018	1.907***	-0.066**
	(0.010)	(0.018)	(0.015)	(0.021)	(0.728)	(0.028)
TIME	0.004	0.037**	-0.001	0.038*	1.126*	-0.030
	(0.012)	(0.017)	(0.015)	(0.022)	(0.654)	(0.033)
TRAINING	0.041**	0.023	0.044**	0.047	1.651	0.117***
	(0.019)	(0.023)	(0.022)	(0.029)	(1.034)	(0.038)
Panel B: No Baseline Characteristics Included						
TREATMENT	0.007	0.014	-0.000	0.012	1.835***	-0.075***
	(0.009)	(0.016)	(0.015)	(0.020)	(0.650)	(0.029)
TIME	0.006	0.025	-0.013	0.019	0.918*	-0.057*
	(0.011)	(0.015)	(0.015)	(0.021)	(0.473)	(0.032)
TRAINING	0.040**	0.027	0.047**	0.054*	1.722*	0.126***
	(0.018)	(0.023)	(0.022)	(0.029)	(0.974)	(0.038)
Panel C: Including Baseline Outcome Variables						
TREATMENT	0.003	0.004	0.001	0.005	0.614*	-0.028**
	(0.006)	(0.006)	(0.008)	(0.008)	(0.339)	(0.013)
TIME	0.004	0.028*	-0.008	0.024	0.865	-0.046
	(0.012)	(0.015)	(0.015)	(0.021)	(0.526)	(0.032)
TRAINING	0.041**	0.026	0.046**	0.052*	1.741*	0.122***
	(0.019)	(0.023)	(0.022)	(0.029)	(1.004)	(0.038)
Panel D: IPW Estimates. Baseline Characteristics Included						
TREATMENT	0.005	0.017	0.005	0.018	1.932***	-0.067**
	(0.011)	(0.017)	(0.015)	(0.021)	(0.738)	(0.028)
TIME	0.002	0.039**	-0.001	0.039*	1.200*	-0.029
	(0.013)	(0.017)	(0.014)	(0.022)	(0.662)	(0.033)
TRAINING	0.041**	0.021	0.042*	0.044	1.547	0.116***
	(0.019)	(0.023)	(0.021)	(0.029)	(1.044)	(0.038)
Sample Size	1,008	1,008	1,008	1,008	1,008	1,008

Region fixed-effects included
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: ITT Estimates of Empowerment, Entrepreneurship and Happiness Outcomes

	Control over Resources	Rosca Membership	Personal Bank Account	Operate Bank Account	Purchased Sewing Machine	Happy at Home	Happy at Work
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Baseline Characteristics Included							
TREATMENT	0.043	0.019	-0.022	0.008	-0.040	-0.007	-0.121*
	(0.045)	(0.031)	(0.034)	(0.032)	(0.043)	(0.074)	(0.073)
TIME	0.16***	-0.036	-0.024	0.003	0.237***	0.062	-0.005
	(0.06)	(0.032)	(0.031)	(0.030)	(0.052)	(0.085)	(0.087)
TRAINING	-0.09	-0.009	0.018	-0.003	0.159***	0.090	0.148
	(0.06)	(0.036)	(0.036)	(0.037)	(0.059)	(0.097)	(0.099)
Panel B: No Baseline Characteristics Included							
TREATMENT	0.030	0.009	-0.015	0.008	-0.106**	-0.004	-0.117
	(0.047)	(0.030)	(0.035)	(0.032)	(0.047)	(0.074)	(0.073)
TIME	0.610***	-0.069**	-0.019	-0.006	0.044	0.082	-0.006
	(0.039)	(0.028)	(0.027)	(0.029)	(0.050)	(0.076)	(0.080)
TRAINING	-0.030	0.003	0.016	0.000	0.226***	0.083	0.148
	(0.047)	(0.034)	(0.035)	(0.037)	(0.059)	(0.096)	(0.098)
Panel C: Including Baseline Outcome Variables							
TREATMENT	0.030	0.007	-0.008	0.002	-0.015	-0.009	-0.066*
	(0.024)	(0.015)	(0.011)	(0.013)	(0.019)	(0.036)	(0.037)
TIME	0.652***	-0.056*	-0.022	-0.004	0.134***	0.068	-0.010
	(0.039)	(0.029)	(0.028)	(0.029)	(0.050)	(0.080)	(0.083)
TRAINING	-0.045	-0.002	0.017	-0.000	0.195***	0.088	0.150
	(0.047)	(0.035)	(0.036)	(0.037)	(0.058)	(0.097)	(0.099)
Panel D: IPW Estimates. Baseline Characteristics Included							
REATMENT	0.039	0.017	-0.022	0.010	-0.043	-0.014	-0.122*
	(0.045)	(0.031)	(0.033)	(0.031)	(0.043)	(0.074)	(0.073)
TIME	0.676***	-0.038	-0.024	0.004	0.238***	0.060	-0.006
	(0.042)	(0.032)	(0.030)	(0.029)	(0.052)	(0.084)	(0.086)
TRAINING	-0.045	-0.007	0.018	-0.004	0.159***	0.096	0.147
	(0.047)	(0.036)	(0.036)	(0.036)	(0.059)	(0.097)	(0.099)
Sample Size	1,008	1,008	1,008	1,008			

Region fixed-effects included
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Sample Heterogeneity at Baseline: Location of Residence

	Full Sample (1)	South Shahdara (2)	North Shahdara (3)	Difference (4)
Outcome Variables				
Casual wage employment	0.010	0.018	0.005	-0.012
				(0.008)
Permanent wage employment	0.032	0.058	0.016	-0.041***
				(0.015)
Self employment	0.024	0.040	0.014	-0.026**
				(0.013)
Any employment	0.049	0.080	0.030	-0.050***
				(0.018)
Hours Worked	1.840	2.190	1.625	-0.565
				(0.740)
Job Search	0.074	0.097	0.060	-0.038*
				(0.022)
Control over resources	0.411	0.602	0.293	-0.308***
				(0.040)
Rosca participation	0.114	0.119	0.111	-0.008
				(0.027)
Personal Bank Account	0.140	0.230	0.084	-0.146***
				(0.03)
Operate Bank Account	0.128	0.186	0.092	-0.093***
				(0.020)
Own Sewing Machine	0.352	0.394	0.326	-0.068*
				(0.068)
Happy at home	3.414	3.456	3.389	-0.067
				(0.07)
Happy at work	3.433	3.398	3.454	0.056
				(0.07)
Socioeconomic characteristics				
Age	22.333	23.942	21.345	-2.597***
				-0.477
Completed secondary schooling	0.446	0.451	0.443	-0.008
				(0.042)
Currently enrolled in school	0.244	0.301	0.209	-0.092**
				(0.036)
Experienced in stitching/tailoring	0.268	0.398	0.188	-0.211***
				(0.036)
Married	0.335	0.465	0.255	-0.209***
				(0.039)
SC	0.510	0.553	0.484	-0.069
				(0.042)
Hindu	0.471	0.947	0.179	-0.768***
				(0.028)
Dependency ratio	0.263	0.292	0.245	-0.046
				(0.041)
Sample Size	594	226	368	

Standard errors reported in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 11: Heterogeneity of Effects on Labour Market Outcomes: Location of Residence

	Casual Employment (1)	Permanent Employment (2)	Self Employment (3)	Any Employment (4)	Hours Worked (5)	Job Search (6)
$TREATMENT$	0.022*	-0.006	-0.005	-0.013	1.609*	-0.030
	(0.012)	(0.034)	(0.028)	(0.040)	(0.970)	(0.044)
$TREATMENT \times NS$	-0.026*	0.026	0.022	0.045	0.344	-0.067
	(0.015)	(0.036)	(0.032)	(0.044)	(1.309)	(0.056)
$TIME$	0.016	0.022	0.007	0.038	1.467*	-0.019
	(0.017)	(0.032)	(0.032)	(0.043)	(0.820)	(0.046)
$TIME \times NS$	-0.015	0.020	-0.002	0.005	-0.436	-0.022
	(0.021)	(0.036)	(0.035)	(0.048)	(0.937)	(0.062)
$TRAINING$	0.057*	0.068	0.077*	0.108*	4.419***	0.143**
	(0.033)	(0.043)	(0.045)	(0.056)	(1.571)	(0.059)
$TRAINING \times NS$	-0.027	-0.061	-0.063	-0.095	-4.492**	-0.037
	(0.038)	(0.050)	(0.049)	(0.064)	(2.004)	(0.075)
Sample Size	1,008	1,008	1,008	1,008	1,008	1,008
Joint effect#	2.37	0.07	0.64	0.19	0.00	5.13**

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Joint Significance: $TRAINING + TRAINING \times NS = 0$

Table 12: Heterogeneity of Effects on Empowerment, Entrepreneurship and Happiness: Location of Residence

	Control over Resources (1)	Rosca Membership (2)	Personal Bank Account (3)	Operate Bank Account (4)	Purchased Sewing Machine (5)	Happy at Home (6)	Happy at Work (7)
Panel A: Baseline Characteristics Included							
$TREATMENT$	0.190***	0.034	-0.091	-0.047	0.086	-0.265***	-0.098
	(0.072)	(0.045)	(0.062)	(0.057)	(0.062)	(0.100)	(0.108)
$TREATMENT \times NS$	-0.250***	-0.015	0.108	0.072	-0.230***	0.435***	0.333**
	(0.089)	(0.057)	(0.068)	(0.065)	(0.080)	(0.135)	(0.140)
$TIME$	0.588***	0.031	-0.067	0.003	0.265***	-0.225*	-0.140
	(0.064)	(0.051)	(0.057)	(0.061)	(0.082)	(0.129)	(0.128)
$TIME \times NS$	0.103	-0.093	0.075	-0.014	-0.058	0.294*	0.235
	(0.075)	(0.059)	(0.061)	(0.066)	(0.100)	(0.152)	(0.159)
$TRAINING$	-0.193***	-0.019	0.087	0.032	0.075	0.113	-0.030
	(0.072)	(0.059)	(0.067)	(0.072)	(0.094)	(0.155)	(0.160)
$TRAINING \times NS$	0.251***	0.004	-0.109	-0.040	0.163	-0.320*	-0.164
	(0.089)	(0.070)	(0.077)	(0.082)	(0.118)	(0.191)	(0.200)
Sample Size	1,008	1,008	1,008	1,008	1,008	1,008	1,008
Joint effect$^{\#}$	1.19	0.14	0.37	0.04	10.92***	3.27*	2.67*

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Joint Significance: $TRAINING + TRAINING \times NS = 0$