

Capital, skills and the economic lives of the poor: recent evidence from field experiments.

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1. Introduction

Poor women throughout the developing world are typically engaged in low-return, irregular and insecure wage jobs or sluggish microenterprises, which yield low and unstable earnings. Poor women also typically have very low levels of physical and human capital. Taken together, these observations have led the design of many antipoverty programs based on the assumption that lack of capital and skills determines occupational choice, and that, therefore, transferring capital or skills will enable the poor to enter into more productive occupations and lead to sustainable improvements of their livelihoods.

The aim of this paper is to present evidence from a series of interventions that tackle the capital and skills constraints either separately or simultaneously, to understand whether relaxing these can indeed transform the economic lives of poor women. Throughout we focus on interventions that: (i) explicitly target capital and skill constraints either separately or simultaneously (ii) are evaluated through field experiments that compare outcomes of randomly chosen treatment and control groups.

The policy interventions we review in this paper can be usefully organized along two dimensions: the target population and, consequently their ultimate aim, and the type of transfer. On the first dimension, one group of interventions target the general population with the aim of transforming occupational choice on the extensive margin from wage labor to small entrepreneurship, while a second group targets existing micro-enterprises with the aim of increasing productivity and profit within the same occupation. On the second dimension, one group of interventions transfers capital –either in cash, through asset transfers, or through improved access to credit– another transfers skills through training programs and a third group does both.

The first part of this paper reviews interventions that target the general population with the aim of transforming occupational choice from low return occupations to small-scale entrepreneurship, therefore creating new businesses. We begin by reviewing evidence from our evaluation of BRAC's Ultra-Poor program, an intervention that provides both capital and skills training to 370,000 of the poorest women in rural Bangladesh (Bandiera et al 2012a). We then review evidence from two pilots of similar Ultra-Poor programs in West Bengal (Banerjee et al 2012) and Andhra Pradesh (Morduch et al 2012).

Next, we review interventions that target the general population and aim to transform occupational choices (of women) by providing either capital or skills separately. Here we present evidence on randomized evaluations of microfinance, which improves access to physical capital via credit, and cash and/or in-kind transfers. These include three field experiments on the introduction of microfinance – in urban slums of Hyderabad (Banerjee et al 2010), in Moroccan villages (Crepon et al 2011) and in Mongolian villages (Attanasio et al 2011b) – and the evaluation of Youth Opportunities Program (YOP) in Northern Uganda (Blattman et al 2011) – a program that provides cash grants to groups of young men and women who are interested in starting a small business. On the effectiveness of training programs, we review findings from the evaluations of two types of training programs for youth: one that provides vocational and on-the-job (internship) training on young men and

women in Dominican Republic (Card et al 2011) and in Colombia (Attanasio et al 2011a) and another program that combines in economic and livelihood skills training for adolescent girls in Uganda (Bandiera et al 2012a).

The main findings of note are (i) Ultra-Poor programs that provide a large asset transfer (relative to baseline levels) and intensive complementary training are effective in increasing earnings of very poor women. For example, our evaluation of BRAC's Ultra-Poor program show that two-years after the start of the program, beneficiaries have 34% higher earnings and they increase their per-capita consumption of non-food items by 17% and consumption of food items by 6%. (ii) Capital transfers alone, in particular through microfinance, fail to transform women's occupational choices (on the extensive margin) and earnings (iii) Providing skills to young women through intensive training programs that are comprised of a combination of different types of training (e.g. vocational skills and on-the-job training, or livelihood and life-skills training) may increase employment and earnings of young women.

Taken together, evidence we have so far on the impacts of providing capital and/or training to the general population suggests that a combination of very large asset transfer and intensive training (as in the ultra-poor program's model) leads to the creation of new small businesses and has a transformative impact on women's occupational choices and earnings. On the other hand, capital transfers alone seem to be less effective in doing so. Intensive vocational skills training combined with life skills or on-the-job training can have large impacts on employment and earnings of young women.

The second part of the paper reviews interventions that target existing microenterprises. Rather than aiming to transform occupational choice, these interventions are designed to identify the obstacles faced by small enterprises to foster their growth. Again, we review all studies that are based on RCTs and involve interventions that transfer capital and skills simultaneously or separately. First, we look at two field experiments that provide grants in cash or in kind to micro-enterprises in Sri Lanka De Mel et al (2008, 2009, 2012b) and in Ghana (Fafchamps et al 2011) and contrast their impacts on male versus female-owned businesses. Next, we review evidence from evaluations of business training or financial literacy programs provided to microfinance clients in India (Field et al 2010), Peru (Karlan and Valdivia 2011), Pakistan (Gine and Mansuri 2011) and the Dominican Republic (Drexler et al 2011) as well as the effectiveness of providing consulting services to owners of small and medium-sized enterprises (Bruhn et al 2012). Finally, we review evidence from two field experiments that provided business training along with capital grants (as well as training alone) to female-owned microenterprises in Tanzania (Berge et al 2011) and in Sri Lanka (De Mel et al 2012a).

The main findings of note are: (i) Grants in cash or in-kind often fail to generate growth in female-owned enterprises, except in businesses that were relatively large and successful (thus had more potential to grow) to start with. (ii) Business training alone is not sufficient to increase profits in female-owned businesses ¹. (iii) Business training, when combined with cash grants, may increase the profitability of female-owned businesses, but this effect may not be long-lasting.

¹ There is new evidence (Bruhn et al 2012) that consulting services can have large impacts on profits of small enterprises and earnings of their owners, but this study only reports average impacts on both male and female business-owners (due to small sample size), hence we need further evidence to see if these effects hold for female-owned businesses.

Taken together, evidence from capital transfer and/or business training interventions targeted to female-owned microenterprises suggests that only when combined together they may yield some short-run increase in the profitability of these businesses, but when provided alone and not very intensively, neither capital grants nor training is sufficient to get female-owned small businesses growing.

The paper is organized as follows. Section 2 reviews evidence from programs aimed at transforming the occupational choice of the general poor through capital and skill transfers. Section 3 reviews evidence from programs targeted at existing microenterprises, with the aim to improve productivity and profits. Section 4 draws conclusions and policy implications.

2. Creating new businesses through capital and skill transfers.

2.1 Simultaneous capital and skill transfers: evidence from BRAC's ultra-poor program in Bangladesh

The central idea behind BRAC's ultra-poor program is to target the many women who are too poor to benefit from mainstream microfinance programs, as they do not have any income generating activity that could be improved by the typical microfinance loan. In rural Bangladesh, such women are typified by working as unskilled laborers in wealthier households' farms or households. This often implies that they have very low as well as seasonal and irregular income, as demand for unskilled labor in agriculture is highly seasonal. As a result, the ultra-poor women are often faced with food insecurity and undernourishment, being dependent on assistance from wealthier households in their community.

Beneficiaries are selected in the poorest areas of the country through a combination of community wealth ranking and verification of the program's selection criteria by program officers. The community wealth ranking is carried out through a participatory rural appraisal (PRA) where all members of the community are invited to a meeting during which they allocate households in their community into different wealth bins. Women in the lowest wealth bins are visited by BRAC program officers in order to verify if they satisfy the program's pre-defined selection criteria². Those who satisfy these criteria are offered to participate in the ultra-poor program.

The program has two main components. First, targeted women are offered a menu of small businesses for them to run. These include various livestock rearing options, small retail outlets and small crafts such as basket weaving. Almost all beneficiaries in the communities we study chose livestock businesses. The average asset value is TK9,500 (USD 140)³.

² There are three exclusion criteria, all of which are binding: households where there is a member already borrowing from a microfinance institution, receiving benefits from a government anti-poverty program, or have no adult women amongst their members cannot participate in the program. Furthermore, to be selected a household has to satisfy three of the following five inclusion criteria: (i) total land owned including homestead is not more than 10 decimals; (ii) there is no adult male income earner in the household; (iii) adult women in the household work outside the homestead; (iv) school-going-aged children have to work; and (v) the household has no productive assets.

³ In principle, participants commit to retain the asset for two years with the exception that they are allowed to sell it or exchange it for another income generating asset within that period. In practice, however, the commitment cannot be enforced in a court of law, thus whether the asset is retained or liquidated is itself an

Second, the asset transfer is accompanied by skills training, specific to the type of asset provided⁴. The training component is very intensive and lasts for up to two years. Beneficiaries receive initial classroom training about the business they have chosen (e.g. livestock rearing) at BRAC regional headquarters. Following that, targeted households receive regular support by an asset specialist who visits them every 1-2 months for the first year of the program and by BRAC program officers who visit them weekly for the first two years⁵.

We collaborated with BRAC to randomize the roll-out of the program across 40 BRAC office branches selected by BRAC central offices in the poorest areas of the country. We treat, i.e. offer the program, to all communities in a randomly selected group of 20 branch offices in 2007, while keep all communities in the remaining 20 branch offices as controls until 2011. We report on results from this collaborative evaluation in Bandiera et al (2012a).

BRAC program officers carried out the selection process outlined above both in treatment and control communities, so that beneficiaries were identified in both but only treated in treatment communities. Beneficiaries in control communities are not informed of their status or told that they will be treated in 2011. This enables us to know who would have been the potential beneficiaries of the program in all (both treatment and control) communities in 2007. Given that we randomly chose some communities to be treated in 2007, those who were identified as potential beneficiaries but randomly chosen as controls should experience the same change in their outcomes of interest as the treated households would have in the absence of the program. Thus, comparing the change in the outcomes of interest in treated households to those who were selected by the program but randomly left as controls gives us the causal effect of the program. This way, we can difference out any baseline differences in outcomes between treatment and control communities, as well as the common time trends that are affecting the outcomes in all communities similarly.

We survey all beneficiaries (actual and potential) just before the intervention in 2007 and two years later in 2009. Our final sample covers a panel of 6,730 ultra-poor households in 1,039 communities.

In Bandiera et al (2012a) we show that the program successfully targeted the poorest and most vulnerable women in these communities. The ultra-poor women targeted by the program are mostly illiterate– only 7% can read and write, and likely to be the head of their households and the main income-earner. The percentage of households headed by a female is 37% and the share of households where the main female respondent is the sole income earner is 38%.

This is associated with considerable vulnerability, as measured, for instance, by food security. Households are defined to be food secure if members can afford two meals per day on most

outcome of interest that determines if the program has the intended long-run effect on the targeted poor by transforming their occupational choices.

⁴ To compensate for the short run fall in income due to the occupational change, a subsistence allowance is provided for the first 40 weeks or so, until the targeted women are able to manage their new assets well enough to generate a regular flow of income.

⁵ Between 18 and 24 months into the program, the targeted women receive training in microfinance and are enrolled in village-level microfinance organizations. Our followup survey in 2009 is fielded before the treated women have access to microfinance, hence we do not evaluate the effect of this component.

days⁶. Only 46% of targeted poor women report that their household could afford two meals a day during the past year. Targeted poor women are reliant on casual wage labor, and, as a consequence of this, have earnings which are seasonal in nature. Most of them do not own any productive assets, in particular 52% have no livestock, and over 90% have no land.

In Bandiera et al (2012a) we show that the program was successful at transforming the economic lives of the poor. Treated women increase their labor force participation by 14% and this is associated with a large increase in hours spent in self-employment and a fall in wage-labor hours: hours spent on self-employed activities increase by 113% and hours spent in wage labor fall by 13%. Two years after the asset transfer took place, targeted poor households are 79% more likely to own livestock relative to baseline.

These changes in the occupational choices and asset ownership have led to significant improvements in their earnings and consumption. Two years after the program's inception, targeted poor women have increased their earnings by TK 1548, that is by 34% relative to baseline. In line with this increase in household income, both food and non-food per capita expenditure in the targeted poor households is significantly higher. They spend TK 177 more on non-food items and TK 179 more on food per capita. These changes correspond to a 17% and a 6% rise in non-food and food expenditure in targeted households and a 9% increase in their total per capita expenditure. Finally, the food security of targeted poor households increases by 18 percentage points after two years, corresponding to a 39% increase from baseline.

2.2 Simultaneous capital and skill transfers: Evidence from Ultra-Poor pilots in India

Spearheaded by BRAC's Ultra-Poor program, there is a growing trend in antipoverty programs towards implementing the program's model of combining capital and training to help very poor women start up and grow their businesses⁷. So far, findings from two such pilot programs in India have emerged: Banerjee *et al* (2011) evaluate Bandhan's⁸ "Targeting the Hardcore Poor" (THP) program in West Bengal and Morduch *et al* (2012) evaluate the effects of an ultra-poor program replication ran by SKS⁹ in Andhra Pradesh (AP). Both pilots are implemented in rural villages and both operate in a similar fashion to the BRAC ultra-poor program, targeting poorest women in villages. They follow similar identification methods that involve combination of community wealth ranking and screening methods, and providing them with a large asset (often livestock) transfer, intensive training complementary with the asset(s) provided¹⁰.

In the case of the ultra-poor pilot evaluation in WB, Banerjee *et al* (2011) follow individual-level randomization. After the program selected the list of 991 potential beneficiaries, approximately half (512) of them were randomly selected to receive an offer to join the

⁶ This is a common programmatic measure of hunger in Bangladesh and a key welfare target of the ultra-poor program.

⁷ As of July 2012, ten different pilots were active around the world: India, Pakistan, Ghana, Ethiopia, Yemen, Haiti, Peru, and Honduras. For more details, see <http://graduation.cgap.org/pilots/>

⁸ Bandhan is a microfinance institution based in West Bengal.

⁹ SKS stands for Swayam Krishi Sangam. The program mentioned here was implemented by SKS NGO, an entity distinct from the SKS microfinance institution.

¹⁰ In addition, the THP program in WB provide a stipend for the first 13-40 weeks, support for basic enterprise inputs (e.g. fodder for livestock), saving accounts, life skills training on health and social issues; the ultra-poor program in AP includes stipend and input provision, primary health-care training and coverage, initiation of self-help groups.

program. Among those who received the offer, 12.5% were found to be ineligible ex-post (as it was found out after the offers that they had loans from MFIs or self-help-groups) and 35.6% of them refused to participate¹¹, which meant that 52% of those who were selected for program participation were actually treated. Nevertheless, comparing the change in the outcomes of those who received the offer to participate to those who did not (i.e. estimating ITT), they find that 18 months after the start of the program, adults in targeted poor households increased their labor supply by one additional hour per day (28%), coming from an increase in time spent tending to livestock. The program increased asset-base of the targeted households who after 18 months own not only more livestock but also more land and fruit trees. Corresponding to these changes, the average monthly per capita earnings of targeted households in a typical month is higher by 21%, their per capita monthly expenditure increased by 17% and their food security is improved by 14%¹². Overall, the findings on the impacts of the ultra-poor program pilot in WB are in line with our findings on the effects of BRAC's ultra-poor program, suggesting that the program worked in similar ways and had similar impacts on the targeted poor households in Bangladesh and West Bengal.

For the evaluation of the pilot ultra-poor program in AP, Morduch *et al* (2012) randomize the program at the village level. After the program selected 1,064 potential beneficiary households in 198 villages, 103 villages (576 households) were assigned to treatment and 95 (426 households) to the control group. Only those in treatment villages received offers to join the program in 2007. Of those who receive the offer, 74% accept and receive the asset transfer and the training. To identify the impacts, the authors compare outcomes of all targeted households in treatment communities to the selected households in control. In this case, the program coincided with the implementation of a generous government employment-guarantee scheme¹³ and a sharp increase in agricultural wages. As such, the self-employment opportunities provided by the program in treatment communities may have been substituted for the rising wages in the agricultural labor market, leaving the earnings of treated households unchanged relative to control households. In spite of this, the authors find that three years down the line, the program had a significant impact on the occupational choices of targeted poor households, as treated households spend significantly less time (about an hour per day, or 22% relative to baseline) in agricultural wage labor relative to controls and more time in self-employment (13 additional minutes per day, or 325% relative to baseline level of 4 minutes per day)¹⁴. Moreover, the treated households earn more of their income from livestock rearing and less from agricultural labor relative to controls. Despite these changes in their occupational choices, the authors find no significant impact on the earnings or consumption of treated households relative to the controls. This suggests that the increase in self-employment earnings provided by the program and the rise in agricultural wages during this period might have offset one another, leaving total earnings of the targeted households in

¹¹ Banerjee et al (2011) write that anecdotally one reason for the refusals was the spread of a rumor among Muslim households that Bandhan is a Christian organization (which it is not) seeking converts, which shows up in the data as those who participated in the program are 18pp more likely to be Hindu than Muslim.

¹² Food insecurity is captured by an index that averages the following indicator variables (where 1=food insecurity and 0 otherwise): any adult member skipped a meal, any adult members spent an entire day without eating, any child skipped a meal, all members of the household get enough food everyday, regularly eats two meals a day.

¹³ National Rural Employment Guarantee (NREG) Scheme, which officially guaranteed 100 days of employment per year per household, paid 115 Rupees per day on average.

¹⁴ The authors write that the impact on self-employment hours is large and significant at midline, but dissipates by the endline survey as some of the treated households sell their livestock. Nevertheless, they write that by the endline, treated households are 24 percentage points more likely to own livestock than controls. Moreover, results in Web Table 3 show that even at endline, adult members spend more 3.25 times more time tending to animals relative to baseline.

treatment communities on par with those in control. Indeed, the monthly earnings of both the treatment and the control groups increase by 66% in the course of the three years from the baseline survey to the endline. The findings of Morduch et al (2012) do not imply that the program failed in this context, rather the simultaneous implementation of a government program targeted to the same population confounds the identification of the effect of the program.

2.3 Capital transfers

2.3.1. Microfinance

Although microfinance is different from asset transfers, it tackles the same constraint by allowing poor women to borrow to relax their capital constraints. Despite their success on the field and rapid expansion, microfinance programs have been subject to randomized evaluations only recently. In this section, we review evidence from the recently available RCTs on microfinance.

Banerjee et al (2010) conduct a randomized evaluation of the impact of introducing microfinance in the slums of Hyderabad whereby half of 104 slums selected by the MFI (Spandana) were randomly selected for the opening of an MFI branch. As a result, 15 to 18 months later, average microfinance borrowing was 8.3 percentage points (nearly 50% relative to control mean) higher in treatment areas. Using data from a sample of 6,850 households collected 15 to 18 months after the randomized microfinance introduction, the authors compare the average outcomes of those who live in treatment slums to those from control (estimating ITT effects). On occupational choices, they find that relative to control, households in treated slums were 1.7 percentage points (32% relative to control) more likely to have started a new business during the past year¹⁵. The average per capita household expenditure is statistically not different between the treatment and control groups (although the composition of per capita expenditure is different as treatment group spends more on durables and less on temptation goods and festivals than control).

Crèpon et al (2011) randomize the introduction of microfinance by a local MFI (Al Amana) across 162 villages (81 pairs) in rural Morocco. A final sample of 5,551 households was collected at endline survey¹⁶. Households in treatment villages were 10 percentage points more likely to have microfinance borrowing (relative to about 4.5% in control). Two years after the introduction of microfinance in treatment villages, they find no significant differences in terms of new business creation, survival of existing businesses or labor supply for self-employment activities. They do find, however, that treatment group accrues more earnings from self-employment and less from wage-labor, but the two offset one another, leaving total earnings same as in control group. Therefore they find no impact on average levels of income or per capita expenditure.

Attanasio et al (2011b) randomly allocate 40 villages in Mongolia to receive microfinance (XacBank) with joint liability (15 villages), with individual liability contracts (15 villages) and to control (10 villages). Based on a sample of roughly 1,000 individuals across treatment and control villages, they find that under joint liability, women were 10% more likely to have a

¹⁵ They do not report effects on participation in wage-labor or total earnings.

¹⁶ Following the baseline survey, power calculations based on take up showed that it would be helpful to increase the sample size at endline in order to be able to identify statistically significant impacts. As such, 1,400 households among the final sample of 5,551 were newly sampled households not surveyed at baseline.

business while there was no impact on business ownership by women under individual liability loans. Under both contracts, there was no significant impact on earnings or consumption levels (there is a 10% insignificant impact on total per capita consumption under joint liability, coming from a 17% increase in food pce and a 10% decrease in durable pce).

The results from the three RCTs reviewed in this section imply that microfinance may yield to new business creation and higher profits for existing businesses, but its potential to transform the economic lives of the very poorest is limited.

2.3.2. Grants

A recent study by Blattman *et al* (2011) looks at the impacts of providing cash grants to groups of young men and women who express an interest to start small businesses in Northern Uganda. The program evaluated is called the Youth Opportunities Program (YOP) and its main goal was to create self-employment opportunities for youth by enabling them to acquire skills (by attending a technical or vocational training institute) and by obtaining capital to start their own businesses¹⁷. They were invited to submit applications as self-organized groups, outlining what they wanted to do with the grants. The average group had 22 members and the average group received a grant of USD 7100, corresponding to an average transfer size of USD 304 per group member, with a very large variation across groups. The evaluation strategy involved randomizing the program at the group level over 535 eligible groups, 265 of which (5,460 individual applicants) were assigned into treatment and 270 (5,828 individuals) into control¹⁸. The authors follow a sample of about 2,000 individual group members across two years. The findings show that 2 years after the program started, the targeted youth report large gains in human and physical capital – a one standard deviation increase in self-reported vocational skills (such as tailoring, carpentry, metal-working, hairdressing) and durable capital stock. In line with the program's goals, treated groups report that 61% of the transfer was invested in training and durable capital stock. Male and female beneficiaries report having invested equal amount in vocational skills, but women invest significantly less in capital. Both men and women increase their labor supply in response to the treatment and are more likely to be engaged in skilled jobs. In particular hours spent on income-generating activities increases by about 24% for women (the authors do not report the effects separately by self-employment and wage-work). However, even though there is a large and positive impact on earnings of beneficiaries on average (45%), the impact on women's earnings is much lower than men (18% vs. 52%) and statistically insignificant¹⁹. The reasons for why the effects are so different for males vs. female is unclear and further research is needed to shed light on them.

2.4. Skills transfers

¹⁷ An important distinction between the target populations of YOP and ultra-poor programs reviewed in sections 2.1 and 2.2 is that the beneficiaries of YOP were younger (aged 16 to 35) and coming from a better-off position in the wealth distribution within their communities. In fact on average, applicants for the YOP program were somewhat wealthier and more educated than the average Ugandan.

¹⁸ 30 of the groups assigned to treatment did not receive any grant, implying that the compliance to treatment was 89%.

¹⁹ The effects on capital (tools and machines) as well as housing quality, durable assets, cash savings and subjective wellbeing of male versus female beneficiaries show a similar pattern (where women experience a significantly lower and often insignificant increase). In particular, the program has no impact on wealth (asset-ownership) of women. Moreover, a striking finding is that while self-reported measures of interpersonal aggression falls by 50% for males, it increases by 50% for females.

We now review evidence from skills transfer interventions targeted to the general population (of women) with the ultimate aim of transforming occupational choices and livelihoods. There are few studies that evaluate such interventions using experimental methods, and most look at vocational training and internship programs that even though have the same ultimate goal as in the other programs reviewed in this paper (that is increasing labor supply and earnings of targeted women), their methods and expected effects on the occupational choices of the target population are rather different, as they are aimed mainly at increasing wage employment as opposed to self-employment among the beneficiaries (e.g. Card et al 2011, Attanasio et al 2011a). One exception is the Empowerment and Livelihoods for Adolescents (ELA) program that targets adolescent women in Uganda, providing life skills and livelihood training with a view towards increasing self-employment²⁰.

Card et al (2011) evaluate the impacts of a job training program in the Dominican Republic. The program's goal was to "raise participants' job skills and match them to suitable employers". It combined classroom training with a subsequent internship period. It was the latter component of on-the-job work experience and the heavy emphasis it placed on the private sector (both as a provider of training and as a demander of trainees) that deemed it unique from earlier vocational training programs in the region²¹. The program was targeted towards young men and women aged 16 to 29 with little education (less than high school diploma), currently not working or studying and willing to work. The baseline sample included 7,346 applicants, of which 5,801 were randomly assigned to treatment and 2,564 to control group. Unfortunately, due to a combination of no-shows in the treatment group being replaced (non-randomly) by some members of the control group and the no-shows in original treatment group not being surveyed in the followup, the evaluation design was partly compromised²². In the followup survey (which was conducted 10-14 months after the baseline), 1,345 individuals were re-surveyed – 35% of the realized control groups and 14% of the realized treatment group. With these caveats of the final evaluation design in mind, the authors find that the program had little or no impact on employment rates (point estimate suggests 2-3% effects, statistically insignificant) and no impact on hours of work, but a positive (about 10%) impact on their earnings (which seems to be coming from a 7-10% increase in hourly wages). These effects are similar across male and female samples, suggesting that the program had similar impact on men and women in this setting.

Evaluation of a similar vocational training and internship program in Colombia yields stronger impacts, especially on female participants. Attanasio et al (2011a) evaluate the "Jóvenes en Acción" (JA) program, which provided 3 months of in-classroom training (with on average 7.5 hours per day) and 3 months of on-the-job training to young people. The target

²⁰ Note that all of the interventions we review in this section are targeted towards young women and/or men. We are not aware of any experimental evaluations of skills transfers targeted towards the general population of older women.

²¹ An important feature of the program is that the intern's wage costs were fully subsidized and the interns were allocated to firms on a rolling basis so that employers had a strong incentive to fill their slots with new trainees once the subsidy period came to an end. Perhaps as a consequence of this, few employers appear to have used the internships as a screening channel for recruiting new employees. Card et al (2011) write that the field team who assisted in implementing the program believes that nearly all interns were let go at the end of their internship.

²² There were 1,011 no-shows and 941 of the original controls were treated to make up for the no-shows, resulting in actual treatment and control groups of 5,723 and 1,623 respectively. In the followup survey (which was conducted 10-14 months after the baseline), 1,345 individuals were re-surveyed: 563 people who were originally assigned to the control group and not reassigned (i.e., realized controls); 648 people who were originally assigned to treatment and completed at least 2 weeks of the program; and 134 people who were reassigned from the control group to the treatment group.

population was young men and women between the ages of 18 and 25 from the lowest two deciles of the income distribution. Training was provided by private training institutions on a diverse set of vocational skills. The training institutions played a key role in determining the type and intensity of the courses provided²³. The internships were provided by private, registered companies and unpaid (unlike the program evaluated by Card et al 2011). The total costs of the training plus the internship was high, at USD 750 per beneficiary. The evaluation strategy was based on individual applicant-level randomization whereby every participating training institution randomly allocated 50% of participants into control group. A sample of about 2400 individuals is used to estimate the impacts of the program. The findings show that the training plus internship improved the probability of women participants being in paid employment by 11% and their average wage earnings by 18%. These impacts were lower for male participants. The impacts on women's labor supply into self-employment and total earnings are not reported, but the results on the entire sample (of men and women) show a negative (insignificant) effect on self-employment earnings on average, which suggests that the effect on women's total earnings is likely to be somewhat lower due to this substitution between wage-labor and self-employment. Nevertheless, the findings show that the intensive (and rather expensive) training and internship program in Colombia was effective in improving the employability and wages of female participants.

Finally, in Bandiera et al (2012b), we report midline findings from our evaluation of BRAC's Empowerment and Livelihood for Adolescents (ELA) program in Uganda. The program targets adolescent and young girls (aged 14 to 20), establishes clubs in villages to bring the girls together and provides them with two types of training: (i) life skills training – sessions conducted by one of the girls in the club (mentor) covering issues such as sexual and reproductive health, menstruation, pregnancy, STDs, HIV/AIDS awareness, family planning, rape²⁴; (ii) livelihood skills training – series of courses conducted by a professional on income-generating activities such as hairdressing, tailoring, computing, agriculture, poultry rearing and small trades operation. After the training, the girls are offered credit through BRAC's microfinance program. Our evaluation strategy was based on randomizing the roll-out of the program across 150 communities of which 100 were randomly selected to receive the clubs and the trainings and 50 as controls. We surveyed a panel of 4,800 girls living in these 150 communities at baseline and in two years time, after they had received the two trainings, but before they were offered microfinance. We find that two year down the line, girls who had received the livelihood and the life-skills trainings had 35% higher labor-force participation, coming mainly from an increase in self-employment activities (they were 76% more likely to be in self-employment and spent 46% more hours working in self-employment). Associated with this, their earnings from self-employment was higher. On the other hand, their labor supply into wage-labor and their earnings from wage work was not significantly affected (although the point estimates are negative). Finally, they had 42% higher personal monthly

²³ In 2005, there were a total of 114 training institutions offering 441 different types of courses with an average class size of 27 students. 43% of the participating training institutions were for profit and 57% were non-profit. Training institutions were compensated per beneficiary, conditional on completion of the training course. Courses included training for: taxi and bus drivers; office assistants; call center operators; nurses' and physicians' assistants; pharmacy assistants; hairdressing and cosmetology assistants; inventory assistants; archival assistants; pre-school teacher assistants; cashiers; payroll assistants; assistants for computer installation and maintenance; textile operators; wood-cutting machine operators; carpentry assistants, plumber assistants, and electricians' assistants. Finally, all participants were offered a small stipend to cover travel and lunch expenses during the training. Female participants who had children were offered extra stipend to cover daycare costs.

²⁴ Others sessions include management skills, negotiation and conflict resolution, leadership among adolescents, legal knowledge on women's issues such as bride price, child marriage and violence against women.

expenditures across eight goods that are popular among young adolescent girls in Uganda ²⁵. Overall, our findings show that combining life skills and livelihood skill training in a club environment with voluntary participation can be effective. In particular, our findings show that the impact of the ELA program on occupational choices are larger than those found by Card et al (2011) and comparable to those that Attanasio et al (2011a) find for the vocational training programs they evaluate, suggesting that the combined training approach of the ELA program does at least as well as providing livelihood skills training alone.

3. Improving existing businesses through capital and skill transfers.

We now review interventions that transfer capital and/or skills to the population of women who already own small businesses of their own. This literature has a stronger focus on outcomes related to the growth of targeted businesses (such as profits or employment) and less on the household-level outcomes (such as income or consumption). In order to maintain comparability between the studies reviewed in the two sections, we will mention the impacts on household-level outcomes where available, in addition to the business outcomes highlighted by the literature. We review all relevant studies that are based on RCTs and involve interventions that transfer capital and skills simultaneously or separately.

3.1 Capital Transfers

In a field experiment in Sri Lanka, De Mel *et al* (2008) provide unconditional grants in cash or in-kind to a sample of small enterprises. The data used in the study covers a panel of 385 firms that have a capital stock of less than USD 1000 other than land and buildings, randomly allocated to receive cash or in-kind grants (of two different sizes, designed to equal USD 150 on average) or nothing (controls). They find that on average the grants increased monthly profits of the business by 5.5% (of the grant size) in the first year and by 4.9% in the second year following the grant disbursement. It appears that the cash grants were somewhat less effective than the in-kind grants on average, although this difference is not statistically significant. There is, however, significant differences in the returns to the grant by the gender of the business-owner: female-owned enterprises do not experience any increase in their profits in response to the grant, while male-owned businesses realize a 9% return in their monthly profits. What's even more striking is that even five years after the grants were disbursed, male-owned enterprises realize large returns to the grant (12%) while the female-owned businesses continue having zero returns (De Mel et al 2012b). Associated with this increase in profits, total labor income of male entrepreneurs is higher by 14% five years after the grants were allocated, while for women there is no statistically significant impact on earnings (if anything, point estimate suggests a negative 4% effect on female business-owners' labor income). They do not report impact on labor supply, occupational choice or consumption by the gender of the entrepreneur. Nevertheless, the findings from this firm-level experiment are striking as they suggest that simply providing capital grants to small businesses may result in large, long run improvements in the profitability of male-owned enterprises, as well as their earnings while they may have absolutely no effect on profits or earnings of female micro-entrepreneurs.

In another experiment that involves providing unconditional capital grants to micro-enterprises, Fafchamps *et al* (2011) randomly allocate cash and in kind grants of equal size

²⁵ In particular, the goods categories are jewelry/ornaments, cosmetics/makeup, clothes, hairdressers, shoes/footwear, talk time on mobile phone, presents/gifts, going to restaurants/bars/cafes.

(USD 120) to male and female-owned businesses in Ghana. The data spans a panel of 730 firms across two years. In the Ghanaian setting, the cash and the in-kind grants have different effects on business profits, especially by the gender of the entrepreneur. For female-owned businesses, only the in-kind grants seem to have a positive impact on profits, while for the male owners the difference in cash and in-kind grants are less pronounced²⁶. Moreover, among female owners, the in-kind grants led to a rise in profits only for the top 40% of businesses in terms of initial size while the impact of the in-kind grant does not vary by size for male-owned businesses. There is no significant impact of the grant on household consumption²⁷. To reconcile the findings of this study with that of the Sri Lanka experiment, they write that these larger female-owned businesses in Ghana are similar or more profitable than the average male-owned firm, while in the Sri Lankan setting of the experiment in De Mel *et al* (2008, 2009, 2012b) such a large group of successful women entrepreneurs are missing. In fact, if one were to concentrate only on the smaller, subsistence-level female-owned businesses, the returns to grants of any type are close to zero, both in Ghana and in Sri Lanka. This begs the question “why are the returns to capital so low for small, female-owned businesses in these two settings?” Although both studies provide some evidence on this based on individual heterogeneity, it’s hard to say that we have conclusive evidence on this question²⁸.

3.2 Skill Transfers (without capital transfers)

A second line of research documents the impact of training and skill transfer programs on improving the productivity of female-owned businesses. Examples include²⁹ Field *et al* 2010 in India, Karlan and Valdivia 2011 in Peru and Drexler *et al* 2011 in the Dominican Republic. The stylized fact emerging from these studies is that standard business training programs have little or no impact on profitability of women’s enterprises. A recent evaluation by Bruhn *et al* (2012) on consulting services – which are much more intensive, personalized and costly than the standardized business training courses – finds very large impacts of consulting on firm’s profits on average, but unfortunately the sample is not large enough to report on impacts on female-owned enterprises.

Field *et al* (2010) report on the impacts of a financial and basic business skills training course (2-day course) on the business outcomes of female borrowers of a bank in India (SEWA

²⁶ The differences in average return to the in-kind grant between men and women is not statistically significant, while for the cash grant the evidence is less clear. The average return to the in-kind grant is around 25% in terms of monthly profits, for both male and female-owned businesses. The average return to the cash grant is zero for females and, although sensitive to the estimation specification adopted, higher for males.

²⁷ There is a significant increase in consumption for women, only in the cash grant where there is no impact on profits, suggesting that women spent the grant on consumption instead of investing in their business

²⁸ In a companion paper on their Sri Lanka experiment, De Mel *et al* (2009) report that the difference between men and women is not driven by differences in household wealth, ability, risk preferences, attitudes or reporting behavior. On the other hand, they find that the gap between the returns to male versus female-owned businesses is smaller in households where women have more decision-making power and their spouse is more cooperative with regard to the management of the enterprise. This suggests that one reason why the grants did not result in significant returns to most female-owned enterprises may be due to inefficiencies in intra-household resource allocation. In contrast, Fafchamps *et al* (2011) find little or no evidence for the role of intra-household bargaining or external pressures in explaining the differences in the impact of cash versus in-kind grants. They find, however, that the differences may be due to lack of self-control as business-owners with lower self-control measures experience lower profit rise from the cash grants, while the in-kind grants yield to similar impacts for all, potentially as they help solve self-control issues.

²⁹ Bruhn and Zia (2011) evaluate a business training program on male and female business-owners in Bosnia-Herzegovina, but they don’t report heterogeneous effects by the gender of the borrowers and given that this review is focused on impacts on female-owned enterprises, we do not review their findings here.

Bank). The evaluation sample consists of 597 women working mainly in self-employment in the informal sector, of whom two thirds were randomly assigned to receive the course (take-up was 70%). Evaluating the impacts on three different social groups (upper caste, scheduled caste and Muslim women), they find that the program had a positive impact only on the UC women who are socially the most restricted among Hindu women. The training increased the likelihood that they reported positive earnings by 24% and their weekly earnings by 30% (the latter effect is imprecisely estimated).

Karlan and Valdivia (2011) conduct a randomized evaluation of a business-training program offered to clients (all female) of a Peruvian microfinance institution (FINCA – Peru). Out of 239 village banks, 168 were assigned to treatment group where clients were offered the training after their weekly meetings³⁰ and 101 to control (where no training was offered). The sample includes roughly 3,000 clients surveyed in these villages. The training program consisted of up to one-hour long classes for 22 weekly sessions during which standard business skills and strategy training was covered, but client-specific problem solving or consulting services were not provided. The results show that the program did have impacts on some of the self-reported business practices³¹, however it had no significant robust impact on business profits. There is some evidence that the training may have enabled the entrepreneurs to reduce fluctuations in their revenues, as revenues in “bad months” are slightly higher than the control group. Effects on total earnings or occupational choices are not reported.

Drexler *et al* (2011) analyze the effects of two different types of financial training on business practices and outcomes of micro-entrepreneurs in the Dominican Republic: once teaching the accounting principles and the other a simple financial literacy training based on basic rules (‘rules of thumb’). From a sample of 1,193 clients (90% of which were female) of a savings and credit bank (ADOPEM), they randomly assign 402 to the Accounting treatment, 404 to the Rule-of-Thumb treatment, and 387 to a control group. The results show that the simple, rules of thumb training improved business practices³², on average, while the standard financial training was not effective in doing so. Corresponding to this effect on business practices, individuals assigned to the rule-of-thumb treatment report higher revenues in bad (low-business) weeks, while those assigned to the accounting training do not. They do not find statistically significant impacts on business profits and do not report impacts on labor supply, occupational choice, earnings or household consumption. The findings imply that the type, as well as the content of the training offered may play a key role in determining its effects on business outcomes.

Gine and Mansuri (2011) report the impacts of a business training program in Pakistan targeted to male and female microfinance clients. The training was based on ILO’s “Know About Your Business” training and lasted for eight days³³. The program was evaluated based

³⁰ Among the treatment banks, 104 were assigned to a mandatory treatment group where clients had to stay for the training after their weekly meetings, 34 to a voluntary treatment group where they had the option to stay or leave before the training.

³¹ In particular, they find that the program led to an increase in record keeping, using profits for business growth, implementation of innovations and business knowledge. On the other hand, there is no impact on many other business practices that were part of the training, such as tax formality, allowing sales on credit, and proportion of clients who planned innovations in their businesses.

³² In particular, individuals assigned to the treatment groups were more likely to report separating business and personal cash and accounts, keeping record and calculating revenues formally.

³³ The training was followed by a lottery that gave some training participants eligibility to apply for a loan up to 7 times larger than the average loan size. Although this lottery was intended to vary access to capital among the

on a randomized control trial over roughly 4,000 microfinance clients, half of whom were men and half were women. They find that although the training increased labor supply and household consumption, as well as improved business practices among men, it had no impact on women. They write that this is likely to be due to the fact that women are excluded from many occupations in Pakistan and their market wage rates are lower compared to men. As such, businesses run by women are also less profitable on the margin. Moreover, they devote fewer hours to the business relative to men, and more hours to household chores and as a result their businesses are often small, home-based businesses.

Finally, Bruhn et al (2012) carry out a field experiment in Puebla, Mexico where they randomly provide consulting services to 150 out of 432 small and medium size enterprises. Of the total sample of firms, 28% had a female 'principal-decision-maker'. The consulting services and the associated skills transfer was intensive and long-lived: business-owners met with their consultants individually and spent on average 4 hours a week for one year. During this time, consultants were asked to diagnose the problems that prevented the enterprises from growing, suggest solutions that would help to solve the problems and assist enterprises in implementing the solutions. The actual participation in the consulting services (take-up) among the treatment group was 53%. Despite this average take-up rate, the authors find large impact of the consulting services on business outcomes 1-3 months after the intervention was over (12-15 months after it started). In particular, monthly sales went up by about 80 percent, profits and productivity increased by 120 percent relative to the control group. They find that the treatment also changed certain business practices such as increasing likelihood to have made a new marketing effort (30%), improved entrepreneurial spirit index (17 percent of a standard deviation increase), and increase in the percent of enterprises that keep formal accounts (8%). Unfortunately, they do not have a large enough sample to analyze the heterogeneity of the impact by gender, so we cannot know if the consulting services were equally effective for female-owned enterprises. Nevertheless, their findings suggest that there might be room for interventions that provide consulting services for female-owned businesses to improve entrepreneurial skills and practices of their owners.

3.3 Combining Capital and Skill Transfers

Berge et al (2011) report the effects of a field experiment where they randomly offered business training to clients of an MFI (PRIDE) in Tanzania, and subsequently, a subset of clients, trained and untrained, were offered a business grant. The training course consisted of 21 45-minute sessions following the clients' weekly meetings, covering topics in entrepreneurship and management³⁴ through case studies and role-play. Following the training, a graduation session was held where clients who had attended 10 sessions or more were awarded a diploma in front of all the clients. Subsequently, business grants were randomly offered to a subset of clients who had participated and a subset that had not. The cost of the grant was chosen to equal the average cost of the training per client (TZS 100,000). The final sample (after attrition and trimming) includes about 500 businesses (about two thirds of whom are female), divided roughly equally among the four treatment and control arms. Evaluating the impact of the capital and skills transfers 12-14 months after baseline (6-8 months after training was over and grants were disbursed), they find positive impact of the training on male entrepreneurs' profits (20-30%) but none on the female business-owners,

training participants, in practice it had no impact on borrowing, suggesting that existing loan size limits already met the demand from the clients.

³⁴ Main topics covered were "Entrepreneurship and Entrepreneurial character", "Improving customer service", "Managing people in your business" and "Marketing strategies".

and no impact of the cash grants on neither men nor women³⁵.

A recent study by Suresh De Mel, David McKenzie and Chris Woodruff also combines capital transfers with business training, but provides relatively larger grants than in Berge et al (2011). In particular, they write that while the grants provided by Berge et al (2011) are on average about 20% of monthly profits, they provide grants corresponding to 375% of mean monthly profits. The experiment in De Mel et al (2012a) is carried out in Sri Lanka where they provide ILO's standardized Start-and-Improve Your Business (SIYB) business training program to two different groups of women: one group consisting of women who already have small-scale businesses and another group of women who are currently out of the labor force but are considering re-entry. Each group is randomly divided into three subcategories: some are kept as controls, some offered to participate in the SIYB training, and among those who complete the training, some are randomly offered cash grants of size USD 130. They are then tracked up to 2 years after the training. Four types of findings are of note: First, among the existing business-owners, there is a significant positive impact on business practices and this effects is in the long run larger among those who received the grant. Second, only when the training is accompanied with a grant it has a positive impact on profits of existing business, and even for this group the effect is not long lasting (profits are back to normal 2 years after the training). Third, among the potential entrants into the labor force, there is a positive short-run impact in the propensity to own a business and a negative impact on the propensity to be in wage-labor. These effects are observed both for those who receive only the training and those who received the training and the grant, but it wears off for both groups in the medium to long run. Fourth, despite the fact that the treatments increased propensity of potential entrants to enter into self-employment (at least in the short run), there is no impact on their earnings.

Taken together, the findings of Berge et al (2011) and De Mel *et al* (2012a) imply that combining business training with capital transfers (in this case in the form of cash grants) may yield to an increase in profitability of female-owned businesses, over and above any effect of the training on its own, but, at least for the size and intensity of capital and/or skills transfers featured in these studies, these effects may not be everlasting. Future research may shed light on whether transfers of larger sums of capital along with longer and more intensive trainings programs can facilitate growth in female-owned businesses.

4. Policy lessons

We reviewed experimental evidence on interventions that provide capital and/or skill transfers to (i) the general population (ii) women who own microenterprises. Table 1 provides a summary of all the studies reviewed in this paper, the interventions evaluated, evaluation strategies and main findings on labor supply (including occupational choices), earnings and consumption of targeted women. Two main findings emerge:

- (i) *Creating new enterprises*: Capital transfers work when (i) large and (ii) combined with intensive training. Small liquidity injections (eg microloans) only make a difference for those who are already sufficiently well-off (e.g. have a business of their own). Similarly, training programs work when (i) intensive, long-lived, and comprised of combination of different types of training (such as

³⁵ They don't report impact on occupational choices, earnings or consumption but the lack of a significant impact on profits of female owners suggests that the intervention had little or no effect on these outcomes.

- on-the-job training or life skills training) and (ii) when combined with large capital transfers
- (ii) *Helping existing enterprises*: similarly – small injections are ineffective for all except the most profitable businesses. Short trainings are largely ineffective.

A key implication emerging from this literature is that capital and skills constraints seem to be binding both for the creation of new enterprises and the expansion of existing enterprises, but the magnitude of transfers required is very large. A key question for policy is whether the benefits of undertaking such programs involving large and intensive transfers of capital and/or skills are worth the costs. Unfortunately, only 5 of the 19 studies we review report a cost-benefit analysis, and the details of these are reported in Table 2.

On balance, the Ultra-Poor programs (both BRAC and Bandhan) fare rather well. BRAC's program (including asset transfer and training) costs on average TK 20,700 per household (approximately USD 300). Our evaluation shows that two years following the asset transfer, beneficiaries have increased their annual earnings by TK 1548 on average, corresponding to an annual return of 7.5%. A key question is whether the program is more effective in increasing the earnings of targeted women relative to an unconditional cash transfer. This comparison requires us to make an assumption regarding the counterfactual, namely on how the targeted women would have spent the cash transfer. On one hand they may have invested the cash in an alternative investment that was more suitable for them, yet on the other hand they may have consumed it or transferred it all to family members. As reviewed above, Fafchamps et al (2011) find that unconditional cash transfers are less effective than transfers in-kind in increasing the earning of self-employed women in Ghana, due to self-control issues. Nevertheless, if we assume the beneficiaries were able to deposit the cash transfer in a savings account, at the going interest rate of 4.5 % in our setting, it would yield 932 TKs per year³⁶. This is significantly lower than the average program effect of TK 1548 (p-value 0.014).

Banerjee et al (2012) perform a similar exercise to show that the annual return of Bandhan's ultrapoor program (27%) is higher than the available interest rate (10% in their case). Since the methodologies are somewhat different- we compute returns based on the earnings of the treated woman, they use household earnings- the message is similar: these programs are worth it.

Despite the sizable number of experimental studies emerging in recent years on the effectiveness of capital and/or skills transfers to women, the literature is still in its infancy and many open questions remain for policy-research. First, evidence we have so far is based on evaluations of either single or multi-component programs that provide either capital or skills or both. Only the recent Berge et al (2011) and De Mel et al (2012) studies are exceptions, as they provide different variants (training vs. training with capital). Future work that tests effectiveness of different combinations and intensity of capital and/or skills transfers is needed. Second, a set of open questions is with respect to the general equilibrium and spillover effects of the interventions studied. Large capital and/or skills transfers that lead to large occupational and income changes are likely to have impacts that go beyond the targeted households and, through markets and transfers, effect prices, wages and other households in the targeted communities. Community-level randomization and large samples covering sufficient number of communities (to have enough statistical power to identify such

³⁶ In our setting of rural Bangladesh, bank accounts are rare and most savings accounts are offered by MFIs, which typically pay 4% to 5% interest per annum (Moulick et al 2011).

community-level effects) are ways in which future research can shed light on these open questions. Third, most studies (with the exception of De Mel et al 2012b) are based on short or medium-run impact evaluations. We need further evidence on the long-run impacts of interventions that involve transfer of capital and/or skills. Finally, recent evidence (Bruhn et al 2012) suggests consulting services, though more expensive than standard training, can have large impact on business practices and profits of small and medium enterprises on average. We have yet to test if these effects are similar across male and female-owned enterprises. Future research is needed to shed light on these open questions that are important for policy.

References:

- [1] Attanasio, O., A. Kugler and C. Meghir (2011), "Subsidizing Vocational Training for Disadvantaged Youth in Developing Countries: Evidence from a Randomized Trial", *American Economic Journal: Applied Economics* 3: 188-220.
- [2] Attanasio, O., B. Augsburg, R. De Haas, E. Fitzsimons, H. Harmgart (2011), "Group Lending or Individual Lending? Evidence from a Randomised Field Experiment in Mongolia", mimeo, UCL.
- [3] Bandiera, O., R. Burgess, S. Gulesci, I. Rasul, M. Sulaiman (2012a) "Can Basic Entrepreneurship Transform the Economic Lives of the Poor?" mimeo, LSE
- [4] Bandiera, O., N. Buehren, R. Burgess, M. Goldstein, S. Gulesci, I. Rasul and M. Sulaiman (2012b) "Empowering Adolescent Girls: Evidence from a Randomized Control Trial in Uganda", mimeo, LSE
- [5] Banerjee, A. V., R. Chattopadhyay, E. Duflo and J. Shapiro (2011) "Targeting the Hardcore Poor: An Impact Assessment", mimeo, CGAP.
- [6] Banerjee, A. V. and E. Duflo (2007) "The Economic Lives of the Poor", *Journal of Economic Perspectives*, 21(1): 141-167, Winter 2007.
- [7] Banerjee, A. V., E. Duflo, R. Glennerster and C. Kinnan (2010) "The Miracle of Microfinance? Evidence from a Randomized Evaluation", mimeo, MIT and Northwestern.
- [8] Berge, L.I.O., K. Bjorvatn and B. Tungodden (2011) "Human and financial capital for microenterprise development: Evidence from a field and lab experiment", mimeo.
- [9] Blattman, C., N. Fiala and S. Martinez (2011) "Employment Generation in Rural Africa: Mid-term Results from an Experimental Evaluation of the Youth Opportunities Program in Northern Uganda", mimeo, IPA.
- [10] Bruhn, M., D. Karlan and A. Schoar (2012) "The Impact of Consulting Services on Small and Medium Enterprises: Evidence from a Randomized Trial in Mexico", mimeo, Yale.
- [11] Bruhn, M. and B. Zia (2011) "Business and Financial Literacy for Young Entrepreneurs: Evidence from Bosnia-Herzegovina", mimeo, World Bank.
- [12] Card, D., P. Ibarra, F. Regalia, D. Rosas-Shady and Y. Soares (2011) "The Labor Market Impacts of Youth Training in the Dominican Republic", *Journal of Labor Economics* 29: 267-300.

- [13] Crèpon B., F. Devoto, E. Duflo and W. Parientè (2011) "Impact of Microcredit in Rural Areas of Morocco: Evidence from a Randomized Evaluation", mimeo, MIT
- [14] De Mel, S., D. McKenzie and C. Woodruff (2008) "Returns to Capital: Results from a Randomized Experiment." *Quarterly Journal of Economics* 123(4): 1329-72.
- [15] De Mel, S., D. McKenzie and C. Woodruff (2009) "Are Women more Credit Constrained? Experimental Evidence on Gender and Microenterprise Returns." *American Economic Journal: Applied Economics* 1(3): 1-32.
- [16] De Mel, S., D. McKenzie and C. Woodruff (2012a) "Business Training and Female Enterprise Start-up, Growth, and Dynamics: Experimental Evidence from Sri Lanka", mimeo, Warwick.
- [17] De Mel, S., D. McKenzie and C. Woodruff (2012b) "One time Transfers of Cash and Capital Have Long-lasting Effects on Microenterprises in Sri Lanka", *Science*.
- [18] Drexler, A., G. Fischer and A. Schoar (2011) "Keeping it Simple: Financial Literacy and Rules of Thumb", mimeo, LSE.
- [19] Fafchamps, M., D. McKenzie, S. Quinn and C. Woodruff (2011) "When is Capital Enough to Get Microenterprises Growing? Evidence from a Randomized Experiment in Ghana", mimeo, Warwick.
- [20] Field, E., S. Jayachandran and R. Pande (2010) "Do Traditional Institutions Constrain Female Entrepreneurship? A Field Experiment on Business Training in India", *American Economic Review Papers and Proceedings* 100: 125-9.
- [21] Gine, X. and G. Mansuri (2011) "Money or ideas? A field experiment on constraints to entrepreneurship in Pakistan", mimeo.
- [22] Jensen, R. (2010) "The (Perceived) Returns to Education and the Demand for Schooling", *Quarterly Journal of Economics*.
- [23] Karlan, D. and M. Valdivia (2011) "Teaching Entrepreneurship: Impact of Business training on Microfinance Clients and Institutions", *Review of Economics and Statistics*.
- [24] Morduch, J., S. Ravi and J. Bauchet (2012) "Failure vs. Displacement: Why an Innovative Anti-Poverty Program Showed No Impact", mimeo, CGAP.

Table 1: Summary of RCTs on Capital and/or Skill Transfers for New Business Creation or Growth of Existing Businesses

Study	Target Population	Setting	Sample Size	Unit of Randomization	Capital Transfer	Skill Transfer	Time Horizon	Impacts on targeted women and their households		
								Occupational Choice	Earnings	Per Capita Expenditure
Attanasio et al (2011a) "Subsidizing Vocational Training for Disadvantaged Youth in Developing Countries: Evidence from a Randomized Trial"	Young men and women (aged 18 to 25)	Colombia	2,400	Individual	-	In-classroom vocational training (3 months) and on-the-job training (3-months)	13-15 months	labor-force participation: N/A self-employment: N/A wage labor: 11% increase in likelihood to be in paid-employment	impact on total labor income not reported, wage and salary earnings increase by 18%	N/A
Attanasio et al (2011b) "Group Lending or Individual Lending? Evidence from a Randomised Field Experiment in Mongolia"	Adult poor women	Mongolia	~1,000	Community	Microfinance	-	18 months	labor-force participation: N/A self-employment: no significant impact wage labor: no significant impact	no significant impact on total earnings	11% statistically insignificant increase in total pce
Bandiera et al (2012a) "Empowering Adolescent Girls: Evidence from a Randomized Control Trial in Uganda"	Young women (aged 14 to 20)	Uganda, rural and peri-urban	4,800	Community	-	Livelihood (vocational) and Life Skills Training	2 years	labor-force participation: 35% increase in likelihood to be engaged in an income-generating activity self-employment: 76% increase in likelihood to be self-employed, 46% increase in hours spent in self-employment on a typical day wage labor: 17% decrease in likelihood to be in wage-labor and 31% decrease in hours spent in wage-labor on a typical day, both effects imprecisely estimated	income from self-employment higher, wage-labor lower.	personal monthly expenditure on goods specific to young females higher by 33%
Bandiera et al (2012b) "Can Basic Entrepreneurship Transform the Economic Lives of the Poor?"	Adult very poor women	Bangladesh, rural	6,730	Community	Livestock asset (\$130)	Asset specific training	2 years (25 months)	labor-force participation: 14% increase self-employment: 113% more hours per year wage labor: 13% fewer hours per year	34% increase in annual earnings of targeted poor women	9% increase in total pce
Banerjee et al (2010) "The Miracle of Microfinance? Evidence from a Randomized Evaluation"	Adult poor women	India (Hyderabad), urban	~6,850	Community	Microfinance	-	15 to 18 months	labor-force participation: N/A self-employment: 32% higher new business creation wage labor: N/A	N/A	no significant impact on average total pce
Banerjee et al (2011) "Targeting the Hard-Core Poor: An Impact Assessment"	Adult very poor women	West Bengal (India), rural	814	Household	Livestock asset (\$100)	Asset specific training	18 months	labor-force participation: N/A self-employment: 28% increase indaily time spent working, which authors write are coming from tending to livestock wage labor: no impact	21% increase in monthly earnings	17% increase in per capita monthly expenditure
Blattman et al (2011) "Employment Generation in Rural Africa: Mid-term Results from an Experimental Evaluation of the Youth Opportunities Program in Northern Uganda"	Young men and women (aged 16 to 35)	Uganda, urban and rural	~2,000	Group (grants were allocated to groups instead of individuals)	Cash grant of \$304 per average beneficiary,	-		labor-force participation: hours spent on income-generating activities increases by 24% self-employment: N/A wage labor: N/A	18% but statistically insignificant (linear estimate).	N/A
Berge et al (2011) "Human and financial capital for microenterprise development: Evidence from a field and lab experiment"	Male and female-owned micro-enterprises	Tanzania	~500	Individual	cash grants (~\$60)	Business training	12-14 months	labor-force participation: N/A self-employment: N/A wage labor: N/A	N/A	N/A
Bruhn et al (2012) "The Impact of Consulting Services on Small and Medium Enterprises: Evidence from a Randomized Trial in Mexico"	Male and female-owned micro-enterprises	Mexico	~400	Individual firm-level	-	Consulting services	12-14 months	labor-force participation: N/A self-employment: N/A wage labor: N/A	N/A	N/A
Card et al (2011) "The Labor Market Impacts of Youth Training in the Dominican Republic"	Young men and women (aged 16 to 29)	Dominican Republic	1,345	Individual	-	Basic skills and technical/vocational training (350 hours max.) and Internship (2 months)	10-14 months	labor-force participation: no impact self-employment: no impact wage labor: no impact	10% increase in monthly earnings coming from an increase in hourly wages, imprecisely estimated	N/A
Crèpon et al (2011) "Impact of Microcredit in Rural Areas of Morocco: Evidence from a Randomized Evaluation"	Adult poor women	Morocco	5,551	Community	Microfinance	-	2 years	labor-force participation: N/A self-employment: no impact on new business creation or hours spent in self-employment wage labor: lower earnings from wage labor, suggesting lower labor supply into wage-work?	no significant impact on average, higher earnings from business offset by lower income from wage-labor	no significant impact on total pce (point estimate negative)
De Mel et al (2008, 2009, 2012b) "Returns to Capital: Results from a Randomized Experiment." **	Male and female-owned micro-enterprises	Sri Lanka, urban?	385	Individual firm-level	Capital grants in cash or in kind (\$100 or \$200)	-	5 years	labor-force participation: N/A self-employment: N/A wage labor: N/A	no significant impact	N/A
De Mel et al (2012a) "Business Training and Female Enterprise Start-up, Growth, and Dynamics"	Female-owned micro-enterprises	Sri Lanka,	573	Individual firm-level	Capital grants	Business Training: ILO's Generate Your Business (GYB) and Start Your Business (SYB) modules	24-25	labor-force participation: N/A self-employment: for both treatments, initial increase in hours worked (8-10%), falls to no impact by month 24-25 wage labor: N/A	N/A	N/A
								labor-force participation: N/A	total earnings higher by	N/A

Author(s) and Title	Country	Urban/Rural	Sample Size	Level	Grant/Asset	Training Module	Time Horizon	Outcomes	Notes
Experimental Evidence from Sri Lanka"		urban			(\$129)		months	self-employment: for the training + grant treatment, likelihood to own a business higher in short-run, but no impact in medium run (ITT: 30% increase by month 7-8, drops to 4% and insignificant by month 24-25); for training only treatment, there is a smaller effect in short-run, drops to zero (no impact) in months 24-25. wage labor: for training + grant treatment, 12% fall in likelihood to be a wage-worker by month 7-8, drops to no impact by month 24-25; for training only treatment, similarly (initial fall is 16%, drops to zero in 24-25 month).	14% for training + grant, 30% for training only treatment in the medium-run (only the latter impact is statistically significant, but the two effects are statistically not different)
Drexler et al (2011) "Keeping it Simple: Financial Literacy and Rules of Thumb"	Dominican Republic		1,193	Individual	-	(i) Account principles training (ii) Simple, rules-of-thumb financial literacy training	12 months	labor-force participation: N/A self-employment: N/A wage labor: N/A	N/A N/A
Fafchamps et al (2011) "When is Capital Enough to Get Microenterprises Growing? Evidence from a Randomized Experiment in Ghana"	Ghana, urban		730	Individual firm-level	Capital grants in cash or in kind (\$120)	-	2 years	labor-force participation: N/A self-employment: N/A wage labor: N/A	N/A no significant impact on pce*
Field et al (2010) "Do Traditional Institutions Constrain Female Entrepreneurship? A Field Experiment on Business Training in India"	India	Women employed in self-employment, borrowing from a bank	597	individual level	-	Business training		labor-force participation: N/A self-employment: N/A wage labor: N/A	Upper caste women 24% more likely to report earnings and have 30% higher weekly earnings, N/A
Gine and Mansuri (2011) "Money or Ideas? A Field Experiment on Constraints to Entrepreneurship in Rural Pakistan"	Pakistan	Male and female microfinance clients	~4,000	individual level	invitation to apply for a large loan (three times the ceiling)	Business training		labor-force participation: N/A self-employment: no significant impact wage labor: no significant impact	no significant impact no significant impact
Karlan and Valdivia (2011) "Teaching Entrepreneurship: Impact of Business training on Microfinance Clients and Institutions"	Peru	Female-owned micro-enterprises	~3,000	Community (Village Bank)	-	Basic entrepreneurship training	2 years	labor-force participation: N/A self-employment: N/A wage labor: N/A	N/A N/A
Morduch et al (2012) "Failure vs. Displacement: Why an innovative anti-poverty program showed no net impact"	Andra Pradesh (India), rural	Adult very poor women	1,011	Community	Livestock asset (\$140)	Asset specific training	3 years	labor-force participation: N/A self-employment: 325% more time spent tending to animals relative to baseline wage labor: 22% less time in wage labor (1 hours per day)	no impact no impact

Notes: Sample size is the final sample size in the panel data, net of attrition. Time horizon refers to the time elapsed from the baseline survey until the followup survey used in the paper (midline or endline, depending on the study). ** Only the title for De Mel et al (2008) provided for brevity, for titles of De Mel et al (2009) and De Mel et al (2012b) see References. In Bandiera et al (2012), Life skills training covers sexual and reproductive health, menstruation, pregnancy, STDs, HIV/AIDS awareness, family planning, rape, leadership and conflict resolution, legal knowledge on women's issues such as bride price, child marriage, violence against women. Livelihood skills training included hairdressing, tailoring, computing, agriculture, poultry-rearing and small trades operation. In Blattman et al (2011) Although the program design did not involve any skill transfer or training, a large portion of beneficiaries endogenously chose to invest their grant in attending vocational training courses (3-fold increase in self-reported enrolment rate, 10-fold increase in self-reported hours of training received). In Berge et al (2011), there are 3 treatment arms in the experiment: training alone, training with grant, grant alone. In Bruhn et al (2012) due to small sample size, only average effects are reported, i.e. impact on women is not reported separately.

In Card et al (2011) basic skills training was meant to strengthen trainees' self-esteem and work habits, while vocational training was customized to the needs of local employers. In De Mel et al (2008, 2009, 2012b), no impact on profits or total labor income of female business-owners, while there are long-lasting (5 years later) impacts on both outcomes for male business-owners. In De Mel et al (2012), there are 3 treatment arms in the experiment: training alone, training with grant, grant alone. For the potential business owners sample, training is based on ILO's SYB, with the following modules: (i) GYB: 3-day training to help potential entrepreneurs decide if they should start a business. Generate feasible business ideas; (ii) SYB: 5-day training covering selection of products and pricing, organization of staff, purchasing of equipment and inputs, financial planning, generating of a business plan. For the current business-owners sample, training includes the module IYB: 5-day training for existing business owners to develop their business through marketing, buying, costing, stock control, record keeping, financial planning. In Fafchamps et al (2011), there is a significant increase in consumption for women, only in the cash grant where there is no impact on profits, suggesting that women spent the grant on consumption instead of investing in their business. In Karlan and Valdivia (2011), they find no significant impact on business profits while revenues in bad months seems to be higher suggesting that training enables the business-owners to smooth the fluctuations in their revenues better.

Table 2: Summary of Cost-Benefit Analyses from RCTs on Capital and/or Skill Transfers to Women (for New Business Creation or Growth of Existing Businesses)

Study	Cost per Beneficiary	Estimated Returns	Methodology Used to Estimate Returns	Bottom line
Attanasio et al (2011a) "Subsidizing Vocational Training for Disadvantaged Youth in Developing Countries: Evidence from a Randomized Trial"	USD 750	12% - 20.5%	Impact on wage and salary earnings (not total labor income) used for the cost-benefit analysis. Returns throughout the lifetime of the individual is calculated (assuming returns persist over the lifetime and assuming a 40-year working lifetime). General equilibrium effects and displacement of non-participants from jobs not taken into account.	The program yields higher returns relative to the real interest rates in Colombia at the time, which were in the range of 6% to 7%.
Bandiera et al (2012b) "Can Basic Entrepreneurship Transform the Economic Lives of the Poor?"	TK 20,700 (~ USD 300)	7.5% annual	Earnings from all business activities during the past year aggregated to yield annual earnings. The estimated return corresponds to the increase in average earnings per beneficiary. Furthermore, quantile treatment effects are used to benchmark the utility loss due to increased labor hours.	The program is preferred to an unconditional cash transfer of similar size invested in a savings account (typical annual return available to these households 4.5%)
Banerjee et al (2011) "Targeting the Hard-Core Poor: An Impact Assessment"	USD 331	27% annual	Earnings corresponds to income of the household in a typical month. The estimated return corresponds to the increase in average monthly earnings per beneficiary household, aggregated to yield the annual return rate.	The program is preferred to an unconditional cash transfer of similar size invested in an Indian fixed deposit account (with typical annual return of 10%).
De Mel et al (2008, 2009, 2012b) "Returns to Capital: Results from a Randomized Experiment." **	USD 100 - USD 200	0%	Returns to capital are estimated by instrumenting for capital in a regression of monthly business profits with the transfer size.	Transferring capital alone to small female-owned businesses fails to generate returns in terms of business profits.
De Mel et al (2012a) "Business Training and Female Enterprise Start-up, Growth, and Dynamics: Experimental Evidence from Sri Lanka"	Training cost: Rupees 18,600; USD 126-USD 140. Capital Transfer: USD 129	Return to training among the potential business owners was 8%.	The authors don't carry out a detailed cost-benefit analyses for all the treatment types and samples, however only for the potential business owners sample (those who were out of the labor force at baseline), they report the amount of time it would take for the returns to be sufficient to cover the costs of the two treatment types respectively.	The estimates suggest that, for the potential business-owners sample, the training-only treatment costs would be repaid after 12 months (if the medium-term treatment effect was sustained), but the training plus cash cost would take 48 months of the medium-term treatment effect to be repaid.

Notes: In interventions that were targeted to both men and women, the return for women are reported. In Blattman et al (2011) and Bruhn et al (2012) although average returns are reported, returns for women are not reported separately.