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Entrepreneurship Programs in Developing Countries

A Meta Regression Analysis

Yoonyoung Cho
Maddalena Honorati

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Abstract

This paper provides a synthetic and systematic review on the effectiveness of various entrepreneurship programs in developing countries. It adopts a meta-regression analysis using 37 impact evaluation studies that were in the public domain by March 2012, and draws out several lessons on the design of the programs. The paper observes wide variation in program effectiveness across different interventions depending on outcomes, types of beneficiaries, and country context. Overall, entrepreneurship programs have a positive and large impact for youth and on business knowledge and practice, but no immediate translation into business set-up and expansion or increased income. At a disaggregate level by outcome groups, providing a package of training and financing is more effective for labor activities. In addition, financing support appears more effective for women and business training for existing entrepreneurs than other interventions to improve business performance.

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Entrepreneurship Programs in Developing Countries: A Meta Regression Analysis*

Yoonyoung Cho and Maddalena Honorati†

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† Yoonyoung Cho(Corresponding): The World Bank and IZA, email: ycho1@worldbank.org; Maddalena Honorati: The World Bank, email: mhonorati@worldbank.org

1. Introduction

Fostering entrepreneurship is widely perceived to be a critical policy agenda to expand employment and earning opportunities and to reduce poverty. Sound macroeconomic conditions and business environment including infrastructure, regulation, and legal environment have typically been emphasized to increase entrepreneurial activities and create jobs. While these remain relevant, in developing countries, increasing attention is being paid to the role of labor policies that aim to reduce constraints and enhance productivity among the self-employed and small-scale entrepreneurs.[1] This is particularly pressing in developing countries where wage and salary employment is limited and the majority of jobs are created and operated in self-employment (Haltiwanger et al., 2010; Ayyagari et al., 2011; Gindling and Newhouse, 2012). The demographic pressure, including youth bulge in many countries in Africa and South Asia, adds urgency to creating more jobs and provides a justification of entrepreneurship promotion to absorb the large inflow of workers.

In recognition of the importance of self-employment in job creation, interventions to promote entrepreneurial activities (hereafter "entrepreneurship program") are increasingly being implemented around the developing world. Such entrepreneurship promotion programs largely vary by objectives, target groups, and implementation arrangements, and often combine different types of interventions depending on the constraints to entrepreneurial activities that each program aims to address. Based on the evidence that some entrepreneurial traits and skills are strongly related to business set-up and success[2] and that access to finance is a dominating constraint to

[1]Note that the terms "self employed" and "entrepreneurs" are used interchangeably. Also, small-scale entrepreneurship is used instead of microenterprise or subsistence business.

[2]For example, Ciavarella et al. (2004) using data from the United States find a strong relationship between some attributes of personality (measured by the Big Five: conscientiousness, emotional stability, openness, agreeableness, and extroversion) and business survival. Crant (1996) also points to personality as a predictor of entrepreneurial intentions.

entrepreneurship, programs have provided individuals in the labor market with the opportunities of training, counseling, and access to finance. Frequently used interventions include technical (vocational), business (managerial), and financial skills training, financing support such as microcredit loans and grants, and counseling ranging from mentoring and advisory services to post-program consulting.[3] Outcomes of interest range from labor market performance such as employment, business creation, hours of work, earnings, and profits and business performance to supply side changes such as improved technical and non-cognitive skills, business knowledge and practice, attitudes, aspirations, and more active financial behavior (borrowing, saving). Target groups are also very diverse with different population groups facing different barriers to entrepreneurship and self-employment (women, youth, social assistance beneficiaries, etc.). Some programs target potential entrepreneurs (the unemployed, school drop-outs, or graduating individuals) to foster self-employment and new business creation; others target existing microentrepreneurs or microfinance clients to increase their productivity. Programs can be further modified according to the context of the policy environment, reflecting cultural factors (fear of failure or beliefs on gender roles), infrastructure (water and electricity), and legal and regulatory conditions (high entry barrier due to administrative hassles), among others, that can hinder individuals from starting and growing a business.[4]

Evidence on the effectiveness of entrepreneurship promotion programs is still scarce, and findings from existing impact evaluations are widely heterogeneous. Early evaluations from Latin America's *Jovenes* programs targeted to vulnerable youth, though not conventional entrepreneurship programs, suggested that vocational and life skills training combined with an

[3] In addition, microfranchising, value chain inclusion, small business networks, support for technology transfer, business incubation, and many others are being implemented.
[4] Microfinance programs, for instance, often target female entrepreneurs in order to address issues related to a cultural factor while relieving credit constraints.

internship in private firms could be potentially useful for self-employment promotion as well (Attanasio et al., 2011; Card et al., 2011). More recent impact evaluations of skills training for self-employment and business development targeted at vulnerable individuals in Malawi, Sierra Leone, and Uganda, for instance, found generally positive effects on psycho-social well-being but mixed results in labor market outcomes (Cho et al. 2012; Blattman et al., 2012; Casey et al., 2011, respectively). The complexity increases as the training programs combine other financial and advisory support especially for social assistance beneficiaries (Almeida and Galasso, 2009; Carneiro et al., 2009; Macours et al., 2012). And even the seemingly similar programs have heterogeneous results in different places (in Peru, business training programs from Karlan and Valdiva, 2011; in Tanzania, Berge et al. 2011; in Bosnia and Herzegovina, Bruhn and Zia, 2011). Likewise, the effects of financing through microcredit or grants vary widely across studies. A series of studies in Sri Lanka suggest that the returns to capital were large and grants significantly improved labor market (business) outcomes (De Mel et al., 2008a; 2008c; 2012). However, evaluations on the effects of expanding access to credit in Mongolia, Bosnia and Herzegovina, India, South Africa, Morocco, and Philippines (Attanasio et al., 2012; Augsburg et al., 2012; Banerjee et al., 2009; Karlan and Zinman, 2010; Crepon et al., 2011; Karlan and Zinman, 2011, respectively) suggest that access to credit did not automatically improve entrepreneurial activities.

In this paper, we exploit the heterogeneity of design and implementation features to shed light on the effectiveness of the programs. We synthesize the impacts of different entrepreneurship programs and disentangle the effects of design factors from those of context and study characteristics using a meta regression analysis. A meta analysis is a statistical procedure of combining the estimated impacts of multiple studies in order to draw more insights and greater

explanatory power in probing differential program effects.[5] Since a meta analysis examines the extent to which different program and study characteristics – design and implementation features, data sets, and methods of analysis – affect estimated results, it is particularly useful to synthesize the findings from various studies on a similar topic.

An important contribution of this paper lies in the coverage of programs and methodology in the meta analysis. Although many entrepreneurship programs are being implemented and evaluated in developing countries, to our knowledge, few attempts have been made to review the impacts of such interventions in order to synthesize emerging lessons. David Roodman's open blog reviews existing microfinance and saving programs, and concludes that such programs do little to reduce poverty on average with large heterogeneity. McKenzie and Woodruff (2013) provide narrative reviews on business training programs and find that their overall impact is generally small and that a knowledge gap exists in understanding what programs work better and how. Karlan et al. (2012) also review microenterprise development programs that include business training and capital infusion, and highlight heterogeneity in results. Our paper, by cross-examining the effectiveness of diverse entrepreneurship programs and by disentangling the contribution of various factors in explaining success, provides a systematic review based on impact evaluation results that are available and draws synthetic lessons. In this sense, this paper is in line with recent studies such as Card et al. (2010) and Kluve (2010), which examine the effectiveness of various active labor market programs in developed countries based on meta analysis. However, unlike Card et al. (2010) and Kluve (2010), we move beyond positive significance in examining program effects. We indeed construct the effect size for each observation based on the coefficients, standard

[5] See Stanley (2001) for discussion on the methodology of meta analysis in synthesizing multiple studies. There has been useful synthetic research that employed this meta analysis method in the field of labor market analysis. For example, Jarrell and Stanley (1990) and Stanley and Jarrell (1998) examined the magnitude of wage gaps between union-nonunion and male-female workers, respectively, using multiple studies that estimated the gap.

errors, and sample size reported in each study. This allows us to discuss program success without confounding it with statistical power from sample size and obtain more robust measures to assess the effectiveness of the programs, which we will discuss below in more detail.

We find that the impacts of differential combinations of interventions vary depending on the outcomes of interest and target groups as well as the specific context. Overall, entrepreneurship programs have a positive and large impact for youth and on business knowledge and practice, but no immediate translation into business set-up and expansion or increased income. At a disaggregate level by outcome groups, providing a package of training and financing is more effective for labor activities. Additionally, financing support appears more effective for women and business training for existing entrepreneurs than other interventions to improve business performance. Our findings suggest that involving the private sector in program delivery can enhance the effectiveness.

The meta analysis, of course, is unable to completely resolve the technical issues that are embedded in the original studies.[6] It is unclear whether a program's performance is driven by its design or implementation from an individual study. By synthesizing multiple studies, we can infer which design and implementation features are more associated with positive impacts, on average. However, because available information differs across studies, it is possible that the meta analysis may omit important determinants of program performance. We undertake estimations based on different models to address unobservable variables. Another caveat of meta analysis is that the

[6] It may be the case that if the impact evaluation was not well powered against certain outcomes due to insufficient sample size, it will more likely yield insignificant impacts even when the true impact exists. Even if an overall impact is well examined for the general target group, heterogeneous impacts on subgroups may suffer more from insufficient power (Card and Krueger, 1995). Similarly, insignificant results are less likely to be written up and reported in a study. Since, in the meta regression, we use all significant and insignificant estimates in the study that are relevant in terms of outcome of interest (we report on average 25 estimated per study), we are automatically absorbing the methodological bias originally present in the study.

results may change if more impact evaluation studies are added.[7] Therefore, findings and conclusions of this meta analysis need to be interpreted with caution, keeping these limitations in mind.

The next section describes the procedure for constructing data and discusses main features of the entrepreneurship programs in our sample studies. Section 3 presents a standardization and estimation strategy using meta regressions and discusses methodology. Section 4 then discusses the main findings of the meta analysis. Finally, Section 5 concludes the study.

2. Constructing a Data Set for the Meta Analysis

2.1. Selection Criteria and Search Strategy

To comprehensively collect studies that evaluate entrepreneurship programs, we apply the following selection criteria. First, we include impact evaluations of interventions that aim at promoting entrepreneurial activities of potential or current entrepreneurs. These are interventions targeted to address various external and individual constraints to entrepreneurship, such as skills,

[7] There are quite a few studies in the pipeline that did not meet our March 2012 criteria, but are advanced in presenting results. Cho et al. (2012) examined the effects of vocational and business training through apprenticeship on vulnerable youth in Malawi, and found little impact on business set-up despite large positive impacts on intermediate outcomes such as business knowledge and psycho-social well-being; De Mel et al. (2012) investigated the impacts of business training and grants on the set-up and growth of female enterprises in Sri Lanka, and found that the training expedited business set-up for potential entrepreneurs and the package of training and grants improved the performance of the existing enterprises; Karlan et al. (2012) investigated the role of business and managerial skills improvement through business consulting in improving the performance of microenterprises in Ghana, and found little evidence of profit increases and the entrepreneurs revert back to their old practices after about a year; Abraham et al. (2011) investigated the access to savings on consumption smoothing and insurance against risks for micro-entrepreneurs in Chile and found positive impacts; Bandiera et al. (2012a) examined the effectiveness of the BRAC's ultrapoor entrepreneurship training and coaching intervention targeted to poor women in Bangladesh and found substantial increases in assets, savings and loans, and improved welfare. Similarly, Bandiera et al. (2012b) found that combining vocational training for business creation with information on risky behavior and health and providing a place to socialize increase the likelihood of engaging in income generating activities by 35 percent for adolescent girls in Uganda.

credit, information, cultural norm, and regulations,[8] including training related active labor market programs (ALMPs) designed to enhance technical skills for self-employment and small-scale entrepreneurship as well as financial support intervention. However, pre-employment technical and vocational education and training (TVET) and programs solely promoting wage employment or large-scale firms are not considered here.[9] Similarly, evaluations of interventions facilitating access to financial products including micro-insurance or saving are excluded unless they focus on the outcomes of entrepreneurial activities.[10]

Second, only impact evaluation studies that rigorously estimate the effects using a counterfactual based on experimental or quasi-experimental design are selected. Many programs whose evaluation is dependent on anecdotal evidence or tracer studies without appropriate comparison between treatment and control groups are not considered. Unfortunately, renowned programs such as Grameen Bank's microcredit program, large-scale programs such as Know About Business (KAB) that are being implemented in many countries by the International Labour Organization (ILO), and many programs by innovative non-governmental organizations (NGO), including Accion International, Ashoka, and Youth Business International, could not be considered.

Third, given that the main interest of this paper is to examine the effects of entrepreneurship interventions as a tool to reduce poverty and improve the livelihoods of individuals in developing countries, we focus only on the studies undertaken in developing

[8] See Banerjee and Newman (1993) for occupational choice model and its constraints.
[9] Examples include De Mel et al. (2010) impact evaluation of a wage subsidy program and Bloom et al. (2012) study on the effects of supporting a large firm in India.
[10] Among the programs to insure individuals against risks, they are included, for example, if they hedge the negative impacts of weather on their agri-business, but are excluded if they provide access to health insurance.

countries over the past ten years. Some well-documented studies on developed countries are excluded here.[11]

Finally, manuscripts are included in this analysis only when they are available in the public domain as a working paper or published paper by the end of March 2012. Ongoing studies, where project description, impact evaluation design, and some preliminary results are available but the draft paper is not, are excluded for now. Adding these studies in the future could change the overall findings from our analysis.

Based on the above-mentioned criteria, we first collected papers from the literature review and references in early studies. We also used web-based search functions such as *Google Scholar* and *Ideas* to find recent working papers. In doing so, we relied on the major working paper domains such as the National Bureau of Economic Research, World Bank Policy Research Working Paper Series, and IZA Working Papers.

2.2. Coding and Sample Overview

Using the selected papers, we gather detailed information on outcomes of interest, and intervention and study characteristics. Intervention characteristics include intervention types (training or financing, for example), duration of intervention, location (country, urban/rural), and target group (youth, women, microcredit clients). Study characteristics include methodology (experimental vs. quasi-experimental), sample size used in the study, and publication format (peer reviewed journals vs. working papers). Other information we extract includes whether government agencies, international donor agencies, NGOs and community organizers, universities and researchers, or

[11] Examples include Cole and Shastry (2009) on the United States and Ooseterbeek et al. (2010) on the Netherlands.

microfinance institutes (MFI) and banks deliver the interventions. When the core information could not be obtained from the paper, we directly contacted authors to provide supplementary information.

And more importantly, we extract information on the effect of the program. The primary measures of the effect that are comparable across studies include: an indicator whether the program had a positive and significant effect and a 'standardized effect size' reflecting the size of effects on the treatment compared to the control group as a proportion of its standard deviation – whether it be probability difference, percentage growth, or changes in levels. An indicator of positively significant effect measures whether the program works, whereas the standardized effect size measures the extent to which the program affects the outcomes. We use both measures to conduct our meta regression analysis, as discussed in more detail in Section 4.

Most of the studies contribute multiple observations because they examine more than one outcome and different beneficiary groups. For example, when the impact of a particular intervention on business practice is examined and the business practice is reflected in two measures – indicators of book keeping and separation of personal and business account – both observations are counted for the outcomes of business practice. Whenever available, we record separate estimates for subgroups such as women and youth, which multiplies the number of observations. However, when multiple specifications are used to estimate a particular outcome, we use a weighted average of the estimates applying the number of observations as weights instead of counting them as separate observations.

The final data set includes 37 impact evaluation studies and 1,116 estimates for six different types of outcomes.[12] The number of estimates collected from each study is larger than

[12] See Table A1 in the Appendix for the complete list of studies that are used here.

Card et al. (2010), given a broader set of outcomes of interest and the diversity of programs considering the nature of labor markets in developing countries.[13] The studies are from 25 countries across all six regions – AFR, EAP, ECA, LAC, SAR, and MENA.[14] Most of the estimates are concentrated in LAC (28 percent), SAR (19 percent), and AFR (17 percent), and two thirds of the interventions come from low income or lower middle income countries (see Figure 1). Out of 37 studies, 16 are published in peer reviewed journals while the remaining 21 studies are working papers. About three quarters of the studies and 80 percent of the estimates are obtained from experimental interventions.

2.3. Constructing Key Variables

2.3.1. Outcomes of Interest

Table 1 presents a summary of the distribution and definitions of the main outcomes of interest. The most commonly measured outcomes are labor market income and profits (27.7 percent) followed by labor market activities (21.7 percent). Business start-up or expansion, increased employment and hours of work, and reduced inactivity are coded as positive outcomes for labor market activities. With respect to income and profits, a range of variables from individual salary to business profits and assets and to household consumption that captures broad welfare is included. Given that most small businesses operate at the household level and that individual earnings from self-employment are often indistinguishable from business profits, they are coded together as labor

[13] For comparison, Card et al. (2010) collected 197 estimates from 97 studies focusing only on labor market outcomes. In our study, we broaden our estimates of interest to other outcomes in addition to labor market ones; we collect 1,116 estimates from 37 studies out of which the number of estimates for labor market outcomes are about 530. On average, we collect 25 estimates per study.

[14] The regional category follows the classification of the World Bank. AFR presents Sub-Saharan Africa, EAP- East Asia and Pacific, ECA- Eastern Europe and Central Asia, LAC- Latin America and the Caribbean, SAR – South Asia, and MENA- Middle East and North Africa.

income. Business performance then includes measures to capture the size and revenue of business activities such as sales, number of employed workers, and size of inventories. Business knowledge and practice includes record keeping, registration, and separation of individual and business accounts that could potentially affect business performance. Acquisitions of business loans, saving accounts, and insurance plans that could affect the resource allocation of a business fall into the category of financial behavior (saving/borrowing). Finally, attitudes toward risk, confidence and optimism, and time preference that may be related to entrepreneurial traits are coded as attitudes.

2.3.2. Type of Intervention

The interventions analyzed in the sample of our studies can be broadly classified in the following types: training, financing, counseling, and the combinations of them. Training is disaggregated into three subcategories: technical and vocational, business and managerial, and financial skills training. Technical and vocational training includes basic skills that would be essential for self-employment in certain occupations – such as electricians, mechanics, tailors, bakers, plumbers, and handy men. The distinction between business and financial training is not always clear. Business training teaches general practice and business applications including, for example, book keeping, calculating profits, separating personal and business accounts, and managing inventory; financial training is usually more specifically tailored to managing profits, making inter-temporal decisions on investment and saving, and accounting.

With respect to financing, it is disaggregated into (micro)credit for business or consumer loans,[15] cash and in-kind grants, and access to financial products such as saving accounts and

[15] We code "microcredit" also as those interventions that test specific design features of a microcredit program. For example, when the "treatment" under evaluation is a change in the rule or structure of the loan repayment, bigger size loans or group liability versus individual liability, we consider them "microcredit" treatment for "microcredit clients."

micro-insurance. Counseling is seldom used as a stand-alone program; rather it usually is added to the main intervention. About 41 percent of estimates include training, 67 percent financing support, and 21 percent combine counseling (See Table 2). Among the different types of interventions, microcredit programs are by far the most common followed by business training (See Figure 2). Depending on the outcomes of interest, certain interventions are more frequently used than others: financial training seems more relevant for business outcomes, whereas technical and vocational training can be useful for labor market outcomes. (See Table A3 in the Appendix for the distribution of type of intervention by outcome groups.)

2.3.3. Beneficiaries

Programs are often targeted to women, youth, microcredit clients, social assistance beneficiaries, and existing business owners. (See Table A1 in the Appendix for the target group of each paper used here.) In cases where programs are not targeted to a certain group, studies report outcomes by gender, region, or education, and it is not uncommon that the effectiveness of programs is heterogeneous across different groups. For example, studies that examine the returns to financing support for microenterprise owners in Sri Lanka (De Mel et al., 2008a; 2008b) found that the impacts were not as strong for women. Such gender disparity in program effects is also found in training programs (Cho et al., 2012; Berge et al., 2011). In order to capture the heterogeneous effectiveness by types of beneficiaries, we construct mutually non-exclusive indicators for female, youth, microcredit clients, social assistance beneficiaries, business owners, individuals with primary or higher education, and individuals in urban areas, using information on target population and the subgroup of estimation. Therefore, the dummy variable “female” is equal to one either

when the outcome has been estimated for the subsample of female or, by definition, when the program is targeted to women.

2.3.4. Service Providers and Delivery Mode

Whether different delivery modes of service make a difference is of interest, as implementation quality is deemed as important as the design of programs. Bali Swain and Varghese (2011) examine the effects of business training for microcredit clients and compare the effectiveness by delivery modes. Their findings suggest that an NGO linkage model seems to yield better results than programs organized and delivered by the banks. In line with this, we group service providers into government agencies, international donor agencies, NGOs and community organizers, universities and researchers, and microfinance institutes (MFI) and banks. It is noted that programs often rely on multiple service providers, and the indicators of service providers are not mutually exclusive (See Table 3).[16] In addition, we construct an indicator to identify whether the main program is delivered by the private sector.

3. Standardization and Estimation Strategy

3.1 Standardization

The effects of the particular interventions that we measure differ across indicators and studies, and need to be standardized for comparability. Given that the sign and significance are neutral to the unit of measurement yet indicate whether the program worked, one simple way of standardization

[16] When multiple agencies are involved, it is usually the case where government agencies are working with NGOs or researchers are collaborating with government agencies or NGOs.

is to focus on the sign and significance of the outcomes. As used in Card et al. (2010) and Kluve (2010), ordinal indicators of positively significant, insignificant, and negatively significant effects can be compared across different variables and studies. Noting that relatively few observations have negatively significant effects (about 4 percent of the entire sample), we focus on the indicator of positively significant outcomes versus non-positive outcomes.

The second measure to synthesize the findings across studies is to use a standardized effect size, thereby allowing diverse studies and outcomes to be directly comparable on the same dimensionless scale. While the statistical significance provides an answer for the "whether the program worked or not" question, the effect size provides a measure of "how well did it work" without confounding the effectiveness of a program with the sample size used in a study. Given that there is a large variation in the sample size of studies used here, the standardized effect sizes would provide a more reliable, comparable measure of program success.

The true effect size (θ) is the mean difference between the treatment (μ_T) and control groups (μ_C) as a proportion of the standard deviation(σ):

(1) $$\theta = \frac{\mu_T - \mu_C}{\sigma}$$

The simplest and most intuitive form of its measurement would be based on mean differences in data called Cohen's *g* (Cohen, 1988), defined as:

(2) $$g = \frac{\overline{Y}_T - \overline{Y}_C}{s_p}$$

where $\overline{Y_T}$ is the mean of the experimental group, $\overline{Y_C}$ is the mean of the control group, and s_P is the pooled sample standard deviation using each group's number of observations (n_T for treatment and n_C for control group) and standard deviations (s_T for treatment and s_C for control group):

(3) $$s_p = \sqrt{\frac{(n_T - 1){s_T}^2 + (n_C - 1){s_C}^2}{(n_T - 1) + (n_C - 1)}}$$

The effect size then captures the magnitude of an impact of treatment compared to the reference group regardless of the unit of measurement. Though intuitively simple, Cohen's *g* is a biased estimator, because the pooled standard deviations of the two groups may not capture the true population value and may produce estimates that are too large especially when the sample size is small. We use the following Hedge's *d* to correct the upward bias:[17]

(4) $$d = g(1 - \frac{3}{4(n_T + n_C) - 9})$$

Note that *d* is the "effect size" of the intervention that we use throughout the paper.

3.2 Distribution of Program Effectiveness

As mentioned above, the positive significance and effect size of interventions are the two statistics that we focus. Table 4 presents summary of the estimated impacts by outcome groups.[18] A few stylized facts are observed. First, the proportion of insignificant estimates is quite high. In particular, about 28 percent of the estimates are positively significant while 68 percent insignificant,[19] and the average effect size for positively significant outcomes is 0.183. Looking only at estimates on the outcome of labor market activities, the average effect size for positively

[17] See Cooper and Hedges (1994) for detailed discussion and derivation of Hedge's d.
[18] See Table A2 in Appendix for average effect sizes by intervention types, population groups, providers, regions and country income levels.
[19] These numbers are calculated at 10 percent statistical significance level, which will be our measure of statistical significance from here.

significant impacts is 0.192. Compared to the effects of ALMPs on labor market activities in OECD countries summarized in Card et al. (2010), where 39 percent are positively significant, 36 percent are insignificant, and the average effect size for positively significant outcomes is about 0.21, the estimates in our study show greater prevalence of insignificant outcomes and slightly lower effect size among the programs with better results. While highlighting the overall difficulty of promoting entrepreneurship in developing countries, this reality again emphasizes the importance of learning what types of programs work for whom and in which context.

Second, the success rates (proportion of estimates that is positively significant and whose effect size is greater than 0.1) as well as the dominant type of intervention largely vary with the outcomes of interest. We plot our two measures of program success – significance and effect size – by types of interventions and outcomes of interest (See Figure 3). The type of intervention, based on its main component, is broadly categorized as training, financing, and combinations of the two. We observe that training is more common than financing in promoting good business practice, which tends to show more successful results, but less common in changing attitudes, which shows a lower success rate. Obviously, these are stylized facts from which it is unclear whether the differences in performance are due to the different type of intervention or the nature of outcomes.

Third, stand-alone financing programs are associated with poorer results compared to the programs with a training component. However, this may mask heterogeneity among the large number of microcredit interventions. Some programs merely estimate the effects of change in the rule of the loan, including the repayment structure and unit of clients, rather than that of the loan provision.[20] In such cases, the effects can be smaller than other programs comparing the outcomes

[20] Such studies include those investigating group versus individual loans or ordinary versus commitment group without a control group that does not have any access to loans (Gine and Karlan, 2009; Brune et al., 2011), and those evaluating the changes of the rule of the loan (Field et al., 2010b; Gine and Yang, 2009).

with and without the loan, and therefore, whether the program is provided to already existing microcredit clients needs to be considered.

Finally, the effect size and t-statistics do not always yield the same conclusion about the effectiveness of a program as mentioned above, although they are highly correlated in all the six plots. We observe some estimates whose effect sizes are large but not significant probably due to low statistical power and vice versa.

3.3 Estimation Strategy

We now turn to a regression analysis to examine the relationship between program effectiveness – measured by the significance and effect size – and characteristics. The observable characteristics of programs are broadly categorized as outcome groups such as labor market activities and financial behavior; design factors such as the types of interventions, beneficiaries, and service providers; and study characteristics such as an indicator of journal publication. The outcome groups and design factors vary across and within studies whereas study characteristics remain constant within studies. Our main interest would be to infer the impact of design factors on program effectiveness.

Assuming that the program effectiveness (E) is, on average, explained by exogenous, observable characteristics, the measure E of an individual outcome i of a study j is written as a linear form as:

(5) $$E_{ij} = \alpha + X_{ij}^{o}\beta_o + X_{ij}^{d}\beta_d + X_{j}^{s}\beta_s + \varepsilon_{ij}$$

where X^o, X^d, and X^scontain observable characteristics of outcome groups, design features, and study characteristics, respectively; and ε_{ij} denotes an error term that is assumed to be independent from the vector $X = \{1, X^o, X^d, X^s\}$. We use the standard probit and Ordinary Least Squares (OLS) model to estimate the positive significance and effect size based on equation (5).

However, assuming that some study/program heterogeneity cannot readily be modelled by the observable variables, we also incorporate the unobservables into our estimation. Unobservable characteristics such as implementation quality (θ_j) – how well the service is delivered to the beneficiaries – may affect program effectiveness even after controlling for the observable duration and service providers of training, for instance. Then equation (5) is modified as the following:

$$E_{ij} = \alpha + X_{ij}^o \beta_o + X_{ij}^d \beta_d + X_j^s \beta_s + \theta_j + u_{ij} \quad (6)$$

where u_{ij} is a white noise independent of X and θ_j.

If unobserved characteristics are deemed to be invariant within each study regardless of the outcomes, a study fixed effect model can be used to estimate the equation (6). For example, if the implementation quality affects all beneficiaries in the same way within the program, the study fixed effect model would remove the effects of unobservable implementation quality, capturing only the differential effects of observable characteristics. Meanwhile, if θ_j varies even within a study as well as across studies and is assumed to be taken by a random draw, the effect of θ_j also needs to be measured and a random effect model can be used. Whether the unobserved part of the study is fixed or variant is not straightforward *a priori*. We examine the robustness of the results based on the different models described here.

4. Results of the Meta Regression Analysis

As discussed in the previous section there are considerable variations in effect sizes across outcome indicators, types of programs, and beneficiaries. Now we move on to a meta-regression framework to analyze how differences in the magnitude and significance of estimated impacts are associated with differences in outcomes variables, intervention design and implementation features, country and study characteristics. The richness of our database allows us to include in the model specification many potential determinants of program success apart from outcome category. At the program level, covariates include the key variables discussed above such as types of interventions and beneficiaries, and service providers. At the study level, we look at variables including the impact evaluation design, publication format, study sample size, and the time interval between program completion and end-line data collection. We begin with a pooled regression that allows statistical power with a large number of observations, and move on to a more disaggregated analysis that provides more detailed information with reduced statistical power.

4.1 Pooled Regressions

We analyze how the likelihood of yielding positive and significant effects is associated with the potential determinants of program success. The probability of observing significant positive outcomes can be described by a probit model for the event of a positive significant impact. Table 5 presents a series of probit models results to fit the likelihood of a significantly positive program estimate. We examine the main dimensions of program heterogeneity separately (first 4 columns)

and simultaneously (5th column) controlling for region, country income, and study characteristics throughout all specifications. [21]

We find that business practice and labor market activity outcomes are more associated with positively significant impacts than labor income outcomes (omitted category) by 46.7 and 35.4 percentage points respectively (column 1). On the other hand, the likelihood of yielding a positive and significant impact is not statistically different among labor income, business performance, financial behavior, and attitudes outcomes, which is consistent with Figure 3 shown above. This suggests that changing business knowledge and practice may be relatively easier than changing behavior and increasing income, at least for the short term.[22] This finding may be different if the long term impacts are estimated as knowledge fades away and impacts on labor market outcomes are materialized.

The model in column 2 examines the probability of program success by intervention types.[23] We classify programs into 'Training Only', 'Training + Counseling', 'Financing Only', 'Financing + Counseling' and 'Financing + Training" (omitted group).[24] Results show that differences across interventions in the chances of success are not significant on average, although the sign and magnitude of the coefficients suggest that training combined with counseling is more promising than the others.

A clear pattern emerges when comparing program estimates by population groups (column 3). Program impacts estimated for youth and the urban population are more likely to be positive and significant than estimates for the general population. To the contrary, programs for

[21] Given the large variation in the number of estimates coded per study (from 2 to 70), we weigh regressions by the inverse of the number of observations/estimates per study in all models to increase the relative weight of under-represented studies.
[22] End-line surveys for our sample of impact evaluations take place, on average, 18 months after the completion of the program, and about three quarters of estimates are measured within two years.
[23] Note that we are using "program success" for having positively significant impacts at 10 percent level.
[24] See Appendix Table A3 for the distribution of estimates by types of intervention and outcomes of interest.

microfinance clients are less likely to yield positive impacts. Differences in program results by gender, education, enterprise ownership, and social assistance dependency are statistically insignificant. It is worth clarifying that the model includes dummy variables for the population group for which the effect has been estimated; it does not necessarily capture whether the program is targeted to that particular group.

Compared to the case of having multiple agencies involved in program delivery (omitted category), the programs delivered solely by banks or MFIs are less likely to be associated with program success (column 4). NGOs are associated, though weakly, with better performance. This finding suggests that programs could work better when delivered by providers that have strong connections with the beneficiaries and are familiar with local contexts.

Column 5 presents a model including all four dimensions of the covariates analyzed in columns 1-4. That the intermediate outcomes such as business practice are more associated with program success than the final outcome is actually reinforced in this full model. Consistent with the simpler models, youth, the higher education group, and urban beneficiaries seem to benefit most from programs supporting entrepreneurship, while microcredit clients experience smaller impacts compared to the general population. In addition, when controlling for all other characteristics, private sector delivery appears to make a difference in improving programs. Again, the differences in the likelihood of positive significance across interventions are not significant on average. This may be because heterogeneous programs are lumped into broad categories. When we regroup intervention type in a more disaggregated manner and repeat the analysis, financial training seems to perform poorly compared to other types of programs.[25] We will discuss heterogeneous program effects in more detail in subsequent sections.

[25] We disaggregate programs as in Table A3 in the Appendix.

Although not presented in the table, basic characteristics, including region and study features, are also associated with program success. In fact, experimental results are generally more robust than quasi-experimental ones. Interestingly, whether the study has been published in a journal is statistically insignificant in explaining program success, suggesting that little publication bias is observed in our sample of studies. Programs seem to work better in the longer term: The period between the completion of the program and the end-line survey is positively related to finding positively significant impacts. In general, the effectiveness of programs across country income groups, when controlling for the region, reveals no statistical differences.

Next, we examine how well the program works by also looking at the magnitude of estimated program impacts and investigate whether the results from effect size are consistent with those of significance (See Table 6). We use linear regression models to fit standardized effect sizes: the OLS, random effects (RE), and study fixed effects (FE) model. The first and second columns replicate column 5 in Table 5 at the10 and 5 percent significance level, respectively. Columns 3 through 5 present the results from the OLS, RE model, and study FE model.

The results across different models are quite consistent. Coefficients from the probit models seem proportional to those from the linear RE model although significance slightly differs across specifications (See Figure 4). In terms of FE and RE models, it is useful to recall the assumptions based on which each model is identified. Given that the study FE model drops observations that do not vary within studies and relies on within-study variations for identification, it would be indeed useful in identifying the impacts of design features without compounding factors if one program has many subcomponents with variations in design features. However, if design features do not greatly vary within studies, caution is needed in interpreting the FE model because the results may be drawn from very few estimates. Studies tend to measure the effects of

an intervention on different subpopulations regarding a series of outcomes. Therefore, the types of outcomes and beneficiaries have sufficient within-study variations for identification, and the results are encouragingly consistent with other models. However, the type of intervention or service provider tends to be constant within a program except when the study examines the impacts of differential intervention type or mode of delivery. For example, the FE result on service delivered by "government" solely relies on the within-study variation of Bali Swain and Varghesse (2011), which evaluates different modes of service delivery. With this in mind, we discuss the RE linear regression model in further detail using the effect size as the dependent variable in the following sections.

4.2 Delving Deeper into Training and Financing Programs

In order to better understand which program or program component is associated to greater success, we disaggregate programs into training and financing. Table 7 presents results from an RE model for effect sizes, restricting the sample to programs with at least one training component. The three main training components include vocational, business, and financial training.[26] Among these, business training is most common and often is provided with vocational or financial training. Counseling services are often added for further guidance and may vary, ranging from job search or business set-up assistance to business consulting, and to psycho-social support. Of course, financing support is frequently combined with training and provided as a package.

[26] Different types of training and combinations of interventions are used for different outcomes of interest (See Appendix Table A3). Vocational training such as in *Jovenes* programs and Uganda NUSAF are used almost exclusively to improve labor market activities and incomes unless combined with financing. Business and financial training tend to aim to improve business practices and knowledge as well as business performance. When business training is combined with counseling, it addresses labor market activities to set up a new business; however financial training combined with counseling tends to focus more on business practice and knowledge, and performance.

The duration of training varies widely. In general, vocational training programs have a longer span (about 5-6 months) as they cover skills training for certain occupations, while business training shows the shortest duration. Although duration is an important dimension of characterizing the training program, it is not always comparable across studies.[27] Some training lasts for a longer period with shorter sessions (22 weeks of training for microcredit clients meeting one time per week for one hour, Karlan and Valdiva, 2010); others last similar lengths with greater intensity (6-8 hours of training at a weekly meeting for six months, Attanasio et al. 2011 and Almeida and Galasso, 2009); and still others consist of a very short session for a shorter period (two four-hour meetings per week for six weeks, Calderon et al., 2011).

The first column of Table 7 includes dummies for the different training components and their combinations with counseling and financial services; the second and third add the outcomes of interest and types of beneficiaries, respectively; and the fourth model includes all covariates. As in the previous specifications, we include study characteristics, region, and country income classification dummies in all specifications. The combination of business and financial training is used for the omitted category. First, results consistently show that vocational training has the best chance of program success, especially when it is complemented with either counseling or financing services. This is consistent with evidence that "comprehensive" models work better (Fares and Puerto, 2009). Second, general business training, provided as a stand-alone intervention or in combination with mentoring/counseling, seems more effective than financial training.[28] However, adding financing support to business training seems to do little.

[27] Not all the studies provide information on the duration of training. For such cases, we contacted authors for data.

[28] This implication is consistent with the finding from Drexler et al. (2011) that a simplified version of training works better than full technical training.

Duration of training program, when considered with the quadratic form, shows that the relationship between the likelihood of success and duration of training is a flat U-shape. This suggests that either intensive, short training or substantially extended training would be appropriate, although the optimal length of training may vary by the outcomes of interest and goal of the programs. It is worth noting that regardless of specifications, private sector delivery seems highly correlated with program success. Finally, the effects of training generally tend to fade as the period between completion of intervention and end-line survey becomes longer.

Now, we turn to programs with a financing component (See Table 8). We disaggregate estimates from financing programs into microcredit and grants as stand-alone programs, grants combined with training, microcredit combined with training, and financing (either microcredit or grants) combined with counseling.[29] The impacts of financing programs seem less heterogeneous than those of training intervention. Cash and in-kind transfers combined with training seem to yield larger impacts than microcredit. No statistical differences are observed comparing microcredit programs with microcredit combined with training or counseling (omitted category). Like the case of training, private sector delivery has a strong positive association with program success. The interval between the intervention and the end-line survey is much longer for financing than training, and unlike training, a longer interval is more associated with higher chances of success, suggesting that it takes time for the use of a loan or grant to emerge as changed outcomes.

4.3 Regressions on Subsample by Outcome Groups

[29] Given that only four observations from one study combine microcredit with counseling (information session) without training (De Mel et al., 2011), we merge microcredit and grants when combined with counseling.

Pooling all estimates, though providing sufficient power for identification, does not allow us to examine the determinants of program success for each particular outcome of interest, if the determinants differ by the outcomes. A particular intervention may be more frequently used and relevant for one outcome than the other, and its effectiveness can also vary by the outcome measures.[30] Moreover, the effects of covariates on the effect size may be specific to the outcome of interest. For instance, youth may benefit more from interventions in improving labor market outcomes than changing saving behavior. Examining the sample according to the six outcome groups separately would reduce heterogeneity across outcome types and provide specific information on the outcome of interest. With respect to the type of intervention, however, we focus on broader grouping to accommodate the reduced number of observations.

The overall findings are as follows (See Table A4-A6 in the Appendix). For nearly all outcomes, particularly labor market activities and business performance, youth is highly associated with program success. This is largely driven by youth-targeted programs that present strong impacts, such as Uganda's vocational training program (Blattman et al., 2012) and Tunisia's business training for college graduates (Premand et al., 2011). To the contrary, women are not associated with any large and significant impacts other than the outcome of attitudes, indicating that entrepreneurship programs seem useful for female empowerment but may not be sufficient to address various barriers faced by women. Existing entrepreneurs also seem to benefit from the programs in improving their business knowledge and practice, but this is indeed negatively associated with business performance. This is in line with the finding from a recent study, Karlan

[30] Recall the distribution of intervention type by outcome classification (See Appendix Table A3). Vocational training is commonly used to improve labor market activities and income but rarely for business outcomes unless combined with financing. Business and financial training tend to focus more on financial behavior and business outcomes but often are addressed to labor market activities combined with counseling. While microfinance is widely used to improve all the outcomes considered here, it is more directed to labor market outcomes when combined with counseling.

et al. (2012), that microenterprise development intervention acted as a catalyzer to adopt good business practice in the short run but led to little changes in performance.

When it comes to intervention type, as discussed above, a package providing both training and financing seems to perform better in promoting labor market activities. However, training alone can be quite useful to improve business knowledge and practice, and financing alone does well in enhancing business performance by releasing credit constraints. This suggests that more customized interventions can enhance cost effectiveness depending on the outcomes of interest and the constraints. In the next two sections, we investigate the heterogeneous effects of each intervention by target group for different outcomes, focusing on labor and business outcomes.

4.3.1 Labor Market Outcomes

Table 9 presents the results from random effects models of effect sizes estimated on the labor market activities and income in Panel A and B, respectively. In each panel, the first row shows the overall effects of each intervention that is relevant for labor market outcomes: training, combination of training and financing, and financing. The subsequent rows present the heterogeneous impacts of each intervention along the types of beneficiaries obtained from regressions that include interactions between intervention and each variable in the first column.

As mentioned, a package approach is found to be more effective to improve labor market activities on average, but the extent varies by the type of beneficiary. This finding is strongest for youth and social assistance beneficiaries but does not hold among women. For women, the impacts from microcredit interventions, such as the expansion of access to loans for rural households in Mongolia (Attanasio et al., 2012), seem higher than training programs. Women are generally more severely credit constrained, and this in turn can hamper their potential gains from skills training as

observed in Malawi's apprenticeship training program.[31] Financing support indeed performs better for women throughout all outcomes. Meanwhile, for business owners, gaining access to finance does little to increase their activities than receiving business training.

Panel B presents the results of heterogeneity analysis on labor market income. Unlike labor market activities, with respect to improving labor earnings and profits, there are no significant differences across intervention types. Training seems to have greater impacts, especially for the higher education group in increasing their income, although this was less evident in the case for labor market activities. Examples of business training interventions that work well for educated group are in Tunisia and Bosnia and Herzegovina (Premand et al., 2011; Bruhn and Zia, 2011). A package approach to provide both training and financing seems to be a promising graduation strategy for social assistance beneficiaries as it increases both labor market activities and income.

Finally, we now consider both significance and effect size to learn from the characteristics of successful and unsuccessful programs. As seen in Figure 3, we focus on successful programs that yield outcomes with positive significance at 10 percent statistical level and effect size greater than 0.1, and unsuccessful ones with t-statistics and effect size smaller than 0. It is noticed that vocational training in Colombia, Nicaragua, and Uganda consistently yields more successful outcomes than unsuccessful ones. All three of these programs target disadvantaged populations to promote employment through skills development. To the contrary, the outcomes from microcredit are more heterogeneous. Expansion of access to credit in Bosnia and Herzegovina and the Philippines presents modest performance with more of their estimates positioning in the successful category, while experiences in India and Mongolia do not appear to be as strong. Programs targeting social assistance beneficiaries from Argentina's *Jefes* and Chile's *Solidario* contribute

[31] See Cho et al. (2012) that find a large gender disparity in participation, experiences, and outcomes from an apprenticeship training program.

more to unsuccessful outcomes than successful ones, suggesting that helping the poor exit from social assistance programs by promoting self-employment is a challenging task.

4.3.2 Business and Behavioral Outcomes

We now move onto business outcomes such as business knowledge and practice and business performance, which are important intermediate outcomes that may lead to successful business and increased income (See Table 9).[32] We again look into training, financing, and the combination of the two.[33] Panel A suggests that business training alone can be quite effective in improving business knowledge and practice. This is particularly true for those who already have their own businesses. For women, however, training does little but financing matters in changing their business practice, suggesting that women may not be the decision maker in business practice unless they have capital under their control.

With respect to business performance (Panel B), financing seems to be the most relevant and effective intervention. Recall that business performance is captured by measures such as sales, inventories, number of paid employees, and business expenses. Thus access to credit probably plays a greater role in improving business performance than training. That being said, training alone is strongly associated with business performance of youth and higher education individuals, especially in the studies where business training was provided for these entrepreneurs (Bruhn and Zia, 2011 for business training targeted to young entrepreneurs in Bosnia and Herzegovina; Drexler et al., 2011 for business training for microenterprise owners in Dominican Republic),

[32] Full results of regression are presented in Table A5 in the Appendix.
[33] Unlike the above case of labor outcomes, when it comes to business outcomes, most of training observations are from business training intervention.

suggesting that a more efficient use of resources can achieve outcomes as effectively when targeted to these groups of entrepreneurs.

In the same manner as above, we consider which programs yield successful and unsuccessful outcomes. As discussed above, many training programs result in improved business knowledge and practice but are unsuccessful when it comes to business performance. Such examples include business training with the lottery of winning larger amount of loans provided to microcredit clients in Pakistan (Gine and Mansuri, 2011) and training for microenterprise owners in the Dominican Republic (Drexler et al. 2011).

5. Conclusion and Discussion

Entrepreneurship programs will continue to constitute an important policy tool in the developing world as long as self-employment exists as a critical alternative for rationed wage employment. A fundamental question is then which interventions and combinations of programs are more effective in enabling the poor to start up and grow their own business. As this will depend on the types of skills (business, technical, "soft skills") and capital (cash, in-kind, credit) constraints, which vary by individuals, we began this study by asking "which type of intervention is more effective for whom and for which outcomes?" In order to answer this, we collected information on program effects from rigorously evaluated studies around developing countries and compiled a large and rich data set with program details. We examined the impact of interventions promoting entrepreneurial activities on a variety of outcomes, such as labor market activities and income, as well as on business practice and performance. We also examined attitudes and financial behavior outcomes. Given the specificity of each program, we considered the design and implementation

features of each program, the context and policy environment of each country, and finally, the study characteristics potentially affecting the estimates of outcomes.

Our meta analysis suggests a number of important implications. Combinations of different intervention types matter for different beneficiaries under different contexts. With respect to training programs, it seems that vocational and business training work better than financial training, and can be further improved by combining financing support or counseling. Business training for entrepreneurs, in particular, appears to be a relatively cost-effective way of promoting business performance and growth with a short intervention period, although improved knowledge and practice through training does not always materialize as increased income. In terms of financing, there are little variations in effectiveness of cash, in-kind grants, and microcredit.

Investigating the effects of programs separately by outcome group suggests that programs need to be customized for each outcome of interest addressing the specific constraints relevant for the outcome. We find that a package promoting skills with financing support seems to have larger impacts on labor market activity. However, training alone can be quite useful to improve business knowledge and practice, and financing alone does well in enhancing business performance by releasing credit constraints. For women, the largest effects come from providing access to credit, suggesting that access to credit may have been the largest constraint to women in their earning opportunities. Overall, involving the private sector for the delivery of programs and evaluating the program in the longer term appear to be more closely associated with improved effects of programs.

Our results have important policy implications. First, programs promoting self-employment opportunities and small-scale entrepreneurship can lead to increases in labor market outcomes with important welfare gains. Second, providing relevant combinations of skills, capital, and counseling

support based on the target group's main constraints is important to achieve better results. Third, among widely heterogeneous effects, it is noteworthy that the impacts on both labor market and business outcomes are significantly higher for youth. This is especially relevant in many parts of the developing world that are facing the 'youth bulge' and aspiring to provide meaningful opportunities to their young populations.

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Table 1. Distribution and Definitions of the Outcomes of Interest

Outcomes of interest	Definitions	Frequency
1. Labor market activities		242 [21.7%]
Business set up and expansion	Binary indicator of business setup or exansion	
Employment (self employment)	Binary indicator of employment status or employment rates	
Hours of work	Hours of work in labor market or business	
Unemployment	Binary indicator of unemployment status	
Business closing	Binary indicator of business closing	
2. Labor market income		309 [27.7%]
Household income	Household income from various sources	
Household assets	Household assets (durable and nondurable)	
Profits (from household business)	Profits from business	
Earnings	Salary and payment for labor	
Consumptions	Household expenditure/consumption on durable/non-durable goods	
3. Financial behavior		126 [11.3%]
Having a loan (formal, informal)	Binary indicator of having a (formal/informal) loan	
Having an insurance or savings	Binary indicator of having insurance scheme or saving	
Amount of loan/saving changed	Amount of loan/savings	
4. Business knowledge and practice		155 [13.9%]
Business knowledge	General business knowledge including the abilities to calculate profits, manage stocks, and make investment	
Innovation	Binary indicator of adopting new technology or developing new product	
Access to network	Binary indicator of having an access to the network of individuals with businesses or market	
Accounting practice	Binary indicator of book and record keeping, and separation of individual and business accounts.	
5. Business performance		184 [16.5%]
Business expenses	Amount of business expenses (inventory, salary, etc)	
Sales from the business	Size of the sales	
Number of employees	The number of (paid/unpaid) employees	
Capital and investment	Size of stocks, investment, and inventories	
6. Attitudes		100 [9.0%]
Attitude torward business	Attitude toward entrepreneurial activities and traits	
Confidence and optimism	Changes in confidence or positivity toward labor market prospect and future	
Risk and time preference	Risk taking attitude and discount rate of future benefits	
Decision making and reservation wage	Changes in decision making process and reservation wage	

Notes: The frequency indicates the number of observations of each outcome category. The proportions of each category are specified in the brackets.

Table 2. Distribution and Definitions of the Interventions of Interest

Outcomes of Interventions	Definitions	Frequency
1. Training		458 [41.0%]
Vocational training	(In-class or apprenticeship) training on various professions	
Lifeskills training	Usually in-class training for problem solving and critical thinking	
Business training	General knowledge on business management including customer relations, inventory and financial management, and marketing	
Financial training	Specific knowledge on accounting and inter-temporal decision making on investment	
2. Financing		742 [66.5%]
Cash grant	Cash transfer for business	
In-kind grant	Transfer in the form of tools, goods, and equipment	
Microcredit	Loan for business for future repayment	
Savings	Access to saving arrangement	
3. Counseling		238 [21.3%]
Mentoring in business	Follow up advice in the process of business operation	
Arrangements for on-the-job advice	Guidance provided on-the-job	

Notes: Counseling is added to either training or financing, it is never a stand-alone intervention. In many cases, training and financing are provided in combination. The "frequency" column specifies the number and proportion of observations that estimate the effect of each intervention. Due to the combinations of interventions, the proportions do not sum up to 100%.

Table 3. Sample Characteristics by Region

	All sample	AFR	EAP	ECA	LAC	MENA	SAR
Total number of estimates	1,116	185	119	180	318	96	218
Type of intervention (%)							
Training only	22.3%	21.6%	6.7%	21.1%	37.7%	-	19.7%
Training+Counseling	11.2%	-	-	-	20.8%	61.5%	-
Financing only	50.1%	58.4%	93.3%	78.9%	9.1%	38.5%	60.6%
Financing+Counseling	8.9%	-	-	-	29.9%	-	1.8%
Training+Financing	6.3%	16.8%	-	-	-	-	17.9%
Outcome Groups (%)							
LM Activity	21.7%	10.3%	20.2%	36.7%	29.2%	31.3%	4.6%
LM Income	27.7%	22.7%	35.3%	21.7%	31.8%	19.8%	30.3%
Financial Behavior	11.5%	20.5%	29.4%	10.0%	2.8%	4.2%	11.0%
Business Knowledge and Practice	13.9%	10.8%	-	11.1%	16.4%	16.7%	21.6%
Business Performance	16.5%	20.0%	10.1%	16.7%	16.7%	11.5%	18.8%
Attitudes	9.0%	15.7%	6.7%	3.9%	3.1%	16.7%	13.8%
Population Groups (%)							
Female	26.3%	27.0%	74.8%	6.7%	15.7%	11.5%	37.2%
Youth	14.6%	11.4%	-	27.8%	10.4%	61.5%	-
High Education	16.8%	8.6%	21.8%	20.0%	12.9%	61.5%	4.1%
SA beneficiaries	14.3%	11.4%	-	-	43.7%	-	-
Entrepreneurs	34.6%	50.3%	26.1%	26.7%	45.3%	8.3%	28.4%
Microcredit clients	27.3%	24.3%	3.4%	21.1%	34.9%	-	49.1%
Urban	43.9%	76.8%	17.6%	21.1%	52.5%	61.5%	28.9%
Providers (%)							
Government agencies	21.4%	11.9%	-	-	49.1%	61.5%	0.9%
NGOs and community organizers	35.2%	15.7%	79.0%	-	56.9%	-	40.8%
Universities/researchers	20.7%	38.9%	17.6%	-	2.2%	61.5%	33.0%
MFIs or banks	56.5%	49.7%	100.0%	100.0%	34.9%	38.5%	41.7%

Notes: Type of interventions and outcomes include mutually exclusive categories while the type of beneficiaries and providers of the programs are not defined in a mutually exclusive way. The categories of beneficiaries can overalp and the programs are often delivered by multiple agencies.

Table 4. Summary of Estimated Impacts by Outcome

Outcomes	LM Activity	LM Income	Financial Behavior	Business Practice	Business Performance	Attitudes	Total
Significance at 10%							
negative	2.5%	3.2%	9.5%	5.2%	4.3%	3.0%	4.2%
insignificant	68.2%	72.8%	67.5%	54.8%	71.2%	63.0%	67.6%
positive	29.3%	23.9%	23.0%	40.0%	24.5%	34.0%	28.2%
Significance at 5%							
negative	1.7%	2.3%	7.9%	1.9%	2.7%	2.0%	2.8%
insignificant	76.0%	78.0%	74.6%	66.5%	80.4%	73.0%	75.5%
positive	22.3%	19.7%	17.5%	31.6%	16.8%	25.0%	21.7%
Effect Size							
Overall average	0.065	0.036	0.034	0.106	0.044	0.090	0.058
Average among positvely signicant at 10%	0.181	0.136	0.204	0.254	0.154	0.180	0.183
Average among positvely signicant at 5%	0.192	0.147	0.224	0.283	0.173	0.200	0.200

Table 5. Probit Model Regressions for Positively Significant Impacts

	Dependent Variable=Indicator of Positively Significant Impact at 10%				
	(1)	(2)	(3)	(4)	(5)
	ME/SE	ME/SE	ME/SE	ME/SE	ME/SE
LM activities	0.354**				0.228
	(0.171)				(0.173)
Business practice	0.467**				0.756***
	(0.185)				(0.217)
Business performance	-0.024				0.143
	(0.169)				(0.192)
Financial behavior	0.009				0.302
	(0.165)				(0.185)
Attitudes	0.111				0.283
	(0.160)				(0.197)
Training only		-0.042			0.343
		(0.298)			(0.367)
Training+counseling		0.336			-0.419
		(0.451)			(0.437)
Financing only		-0.094			0.182
		(0.283)			(0.400)
Financing+counseling		-0.357			0.329
		(0.366)			(0.348)
Female			-0.102		-0.176
			(0.199)		(0.239)
Youth			0.567***		0.676***
			(0.126)		(0.202)
High education			0.177		0.270**
			(0.115)		(0.130)
Microenterprise owners			-0.044		-0.123
			(0.106)		(0.155)
Social assistance beneficiaries			0.210		0.253
			(0.222)		(0.384)
Microfinance clients			-0.507***		-1.161***
			(0.136)		(0.306)
Urban			0.294**		0.392*
			(0.119)		(0.221)
Government only				-0.256	-0.092
				(0.359)	(0.224)
NGOs only				0.057	-0.158
				(0.300)	(0.279)
Universities only				-0.439	-0.146
				(0.286)	(0.269)
MFI or banks only				-0.425**	-0.372*
				(0.213)	(0.225)
Private sector delivery				-0.054	0.467*
				(0.241)	(0.283)
Number of observations	1,097	1,097	1,097	1,097	1,097
Adjusted R2	0.099	0.091	0.124	0.097	0.155

note: *** p<0.01, ** p<0.05, * p<0.1

Marginal effects (ME) are reported. Standard errors (SE) are clustered by study id and reported in parenthesis. Regressions are weighted by the inverse of the number of estimates per study in the database.

All specifications include study characteristics (period between the completion of intervention and estimation, journal publication, experimental design, and the square root of number of observations), region, and income dummies which are not reported here. Column (1) specifies only with outcomes of interest, (2) with the types of intervention, (3) with the type of beneficiaries, (4) with the type of delivering agencieis, and (5) with all of above. Omitte categories include labor income (type of outcomes), Training+Financing (type of intervention), and multiple providers (program providers).

Table 6. Comparisons of Different Models

	Probit (10%)	Probit (5%)	OLS	Random Effects	Fixed Effects
	(1)	(2)	(3)	(4)	(5)
	me/se	me/se	coef/se	coef/se	coef/se
LM activities	0.228	0.190	-0.007	0.004	-0.013
	(0.173)	(0.156)	(0.021)	(0.020)	(0.022)
Business practice	0.756***	0.556*	0.074**	0.082**	0.070*
	(0.217)	(0.284)	(0.037)	(0.040)	(0.039)
Business performance	0.143	-0.012	0.002	0.012	0.009
	(0.192)	(0.222)	(0.019)	(0.022)	(0.019)
Financial behavior	0.302	0.146	-0.007	-0.002	0.017
	(0.185)	(0.200)	(0.019)	(0.020)	(0.024)
Attitude and traits	0.283	0.073	0.020	0.035	0.032
	(0.197)	(0.228)	(0.022)	(0.024)	(0.023)
Training only	0.343	0.523	0.033	0.029	-0.004
	(0.367)	(0.380)	(0.028)	(0.022)	(0.021)
Training+counseling	-0.419	-0.095	0.053	0.016	-0.045**
	(0.437)	(0.445)	(0.043)	(0.033)	(0.021)
Financing only	0.182	0.474	0.025	0.037	0.028
	(0.400)	(0.453)	(0.033)	(0.026)	(0.023)
Financing+counseling	0.329	-0.007	0.003	0.021	-
	(0.348)	(0.390)	(0.034)	(0.036)	
Female	-0.176	-0.251	0.002	-0.001	0.003
	(0.239)	(0.279)	(0.019)	(0.017)	(0.031)
Youth	0.676***	0.721***	0.051**	0.070***	0.060**
	(0.202)	(0.234)	(0.022)	(0.017)	(0.026)
High education	0.270**	0.218	0.039***	0.028**	0.025**
	(0.130)	(0.235)	(0.013)	(0.012)	(0.011)
Microenterprise owners	-0.123	-0.090	-0.000	-0.007	-0.002
	(0.155)	(0.149)	(0.014)	(0.012)	(0.011)
Social assistance beneficiaries	0.253	0.514	0.022	-0.047	-
	(0.384)	(0.474)	(0.043)	(0.042)	
Urban	-1.161***	-0.707**	-0.041**	-0.042*	-0.004
	(0.306)	(0.328)	(0.021)	(0.022)	(0.006)
Microfinance clients	0.392*	0.598**	-0.019	-0.023	-
	(0.221)	(0.234)	(0.022)	(0.019)	
Government only	-0.092	-1.047***	-0.019	-0.000	-0.096***
	(0.224)	(0.208)	(0.030)	(0.029)	(0.009)
NGOs only	-0.158	0.184	-0.016	-0.034*	-0.046***
	(0.279)	(0.316)	(0.021)	(0.019)	(0.000)
Universities only	-0.146	-0.191	-0.006	-0.049	-
	(0.269)	(0.279)	(0.035)	(0.033)	
MFI or banks only	-0.372*	-0.117	-0.004	-0.023	-0.155***
	(0.225)	(0.212)	(0.033)	(0.029)	(0.019)
Private sector delivery	0.467*	-0.106	0.017	-0.005	0.018*
	(0.283)	(0.309)	(0.028)	(0.027)	(0.009)
Number of observations	1,097	1,097	1,097	1,097	1,097
Adjusted R2	0.155	0.166	0.155	0.175	0.029

note: *** p<0.01, ** p<0.05, * p<0.1

Dependent variable in columns 1(2) is a dummy for positive significance of estimates at 10% (5%). Dependent variable in column 3-5 is the estimated effect size.

Standard errors are clustered by study id and reported in parenthesis.

All specifications include study characteristics (period between the completion of intervention and estimation, journal publication, experimental design, and the square root of number of observations), region and income dummies, which are not reported here.

Table 7. Random Effect Models for Effect Sizes of Estimates: Training

	(1)	(2)	(3)	(4)
	coef/se	**coef/se**	**coef/se**	**coe/se**
Business training only	0.077**	0.061**	0.028***	0.025***
	(0.031)	(0.025)	(0.008)	(0.008)
Business training+Counseling	0.214**	0.214***	0.228***	0.236***
	(0.096)	(0.080)	(0.076)	(0.075)
Business training+Financing	0.073*	0.035	-0.010	-0.027
	(0.040)	(0.048)	(0.025)	(0.035)
Vocational training only	0.217*	0.198**	0.254***	0.244***
	(0.124)	(0.098)	(0.073)	(0.059)
Vocational training+Counseling	0.202***	0.251***	0.509***	0.517***
	(0.057)	(0.062)	(0.141)	(0.120)
Vocational training+Financing	0.125	0.125*	0.501***	0.438***
	(0.077)	(0.071)	(0.076)	(0.086)
Financial training only	-0.003	-0.012	-0.051***	-0.053***
	(0.035)	(0.029)	(0.009)	(0.008)
Financial training+Counseling	-0.033	-0.038	-0.051***	-0.050***
	(0.033)	(0.029)	(0.016)	(0.017)
Duration of training	0.007	0.007	-0.036***	-0.027***
	(0.013)	(0.011)	(0.007)	(0.008)
Duration squared	-0.001*	-0.001*	0.000***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Private sector delivery	0.150**	0.129**	0.081***	0.077***
	(0.071)	(0.054)	(0.019)	(0.019)
Months since completion/100	0.204	0.014	-0.089	-0.211
	(0.221)	(0.383)	(0.298)	(0.390)
Outcomes of interest	No	Yes	No	Yes
Type of beneficiaries	No	No	Yes	Yes
Number of observations	439	439	439	439

note: *** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by study id and reported in parenthesis. Dependent variable is the effect size. The omitted category of training is "Business + financial training combined".

All specifications include dummies for study characteristics (journal publication, experimental design, and the square root of study sample), region and country income dummies which are not reported here.

Table 8: Random Effect Models for Effect Sizes of Estimates: Financing

	(1)	(2)	(3)	(4)
	coef/se	**coef/se**	**coef/se**	**coef/se**
Grant only	0.015	-0.009	0.014	-0.010
	(0.027)	(0.030)	(0.023)	(0.028)
Grant + Training	0.068	0.053	0.063*	0.053
	(0.055)	(0.052)	(0.036)	(0.034)
Microcredit only	-0.001	-0.015	0.013	0.001
	(0.021)	(0.020)	(0.016)	(0.016)
Microcredit + Training	-0.004	-0.017	-0.003	-0.020
	(0.022)	(0.021)	(0.019)	(0.019)
Private sector delivery	0.058***	0.053***	0.071***	0.064***
	(0.017)	(0.020)	(0.017)	(0.019)
Months since completion/100	0.227***	0.214***	0.170***	0.148***
	(0.039)	(0.040)	(0.033)	(0.041)
Outcomes of interest	No	Yes	No	Yes
Type of beneficiaries	No	No	Yes	Yes
Number of observations	734	734	734	734

note: *** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by study id and reported in parenthesis. Dependent variable is the effect size. The omitted category of financing is "Microcredit/grants +Counseling ".

All specifications include dummies for study characteristics (journal publication, experimental design, and the square root of study sample), region and country income dummies which are not reported here.

Table 9. Random Effect Regression Model for Labor Market Outcomes

	Type of Beneficiaries Interacted with		
A. LM Activity	Training Only	Training+Financing	Financing only
1. Overall	-0.050***	0.184***	Omitted Variable
	(0.002)	(0.025)	
2. Type of beneficiaries			
Female	-0.018	-0.106***	0.023**
	(0.048)	(0.000)	(0.011)
Youth	0.006	0.208***	0.066***
	(0.004)	(0.024)	(0.014)
High Education	0.028	-	-0.002
	(0.080)		(0.007)
SA beneficiaries	-0.043	0.169***	-0.013
	(0.041)	(0.060)	(0.046)
Entrepreneurs	-0.002	-	-0.016***
	(0.034)		(0.004)
Microcredit clients	-0.074**	-	-0.001
	(0.033)		(0.085)
Urban	-0.014	-	0.010***
	(0.062)		(0.004)
Num. of observation			
	Type of Beneficiaries Interacted with		
B. LM Income	Training Only	Training+Financing	Financing only
1. Overall	-0.031	-0.021	Omitted Variable
	(0.031)	(0.018)	
2. Type of beneficiaries			
Female	-0.007	-0.114***	-0.019
	(0.038)	(0.021)	(0.032)
Youth	0.047	0.108**	-0.009
	(0.043)	(0.050)	(0.012)
High Education	0.269***	-	0.029**
	(0.061)		(0.013)
SA beneficiaries	-0.073	0.078***	0.027
	(0.047)	(0.028)	(0.046)
Entrepreneurs	-0.002	-0.049	-0.018
	(0.074)	(0.049)	(0.024)
Microcredit clients	0.038	-0.052	0.010
	(0.040)	(0.040)	(0.035)
Urban	0.086**	-0.016	0.031
	(0.035)	(0.028)	(0.021)
Num. of observation		309	

note: *** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by study id.

All specifications include study characteristics (period between the completion of intervention and estimation, journal publication, experimental design, and the square root of number of observations), region and income dummies, which are not reported here.

Table 10. Random Effect Regression Model for Business Outcomes

A. Business practice	Training only	Interacted with Training+Financing	Financing only
1. Overall	0.075*	0.012	Omitted
	(0.041)	(0.012)	category
2. Type of beneficiaries			
Female	-0.112**	-0.257***	0.335***
	(0.057)	(0.000)	(0.000)
Youth	0.467	0.104	-
	(0.298)	(0.084)	
High Education	0.011	-	-
	(0.019)		
SA beneficiaries	-	-0.363	-
		(0.226)	
Entrepreneurs	0.084**	-1.069**	-
	(0.039)	(0.525)	
Microcredit clients	0.037	0.400	-0.739**
	(0.093)	(0.318)	(0.288)
Urban	1.037*	-0.115	-
	(0.550)	(0.110)	
Num. of observation		155	
B. Business performance	Training only	Interacted with Training+Financing	Financing only
1. Overall	-0.075***	-0.142***	Omitted
	(0.024)	(0.032)	category
2. Type of beneficiaries			
Female	-0.001	-0.140***	-0.042
	(0.022)	(0.000)	(0.049)
Youth	0.155***	0.044	-
	(0.027)	(0.037)	
High Education	0.049***	-	-0.046*
	(0.005)		(0.026)
SA beneficiaries	-	-0.111**	-
		(0.056)	
Entrepreneurs	0.081*	0.024	-0.031*
	(0.047)	(0.064)	(0.017)
Microcredit clients	-0.079**	0.100*	0.013
	(0.032)	(0.055)	(0.055)
Urban	-0.058	0.007	-0.092***
	(0.037)	(0.036)	(0.027)
Num. of observation		184	

note: *** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by study id.

All specifications include study characteristics (period between the completion of intervention and estimation, journal publication, experimental design, and the square root of number of observations), region and income dummies, which are not reported here.

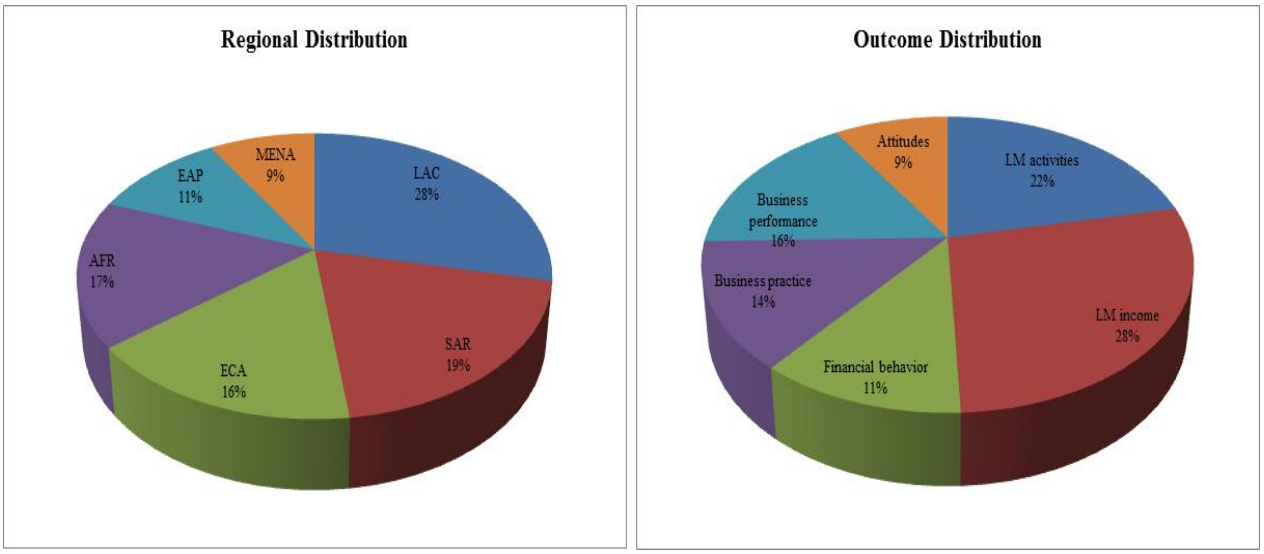

Figure 1. Distribution of Estimates: Region and Income

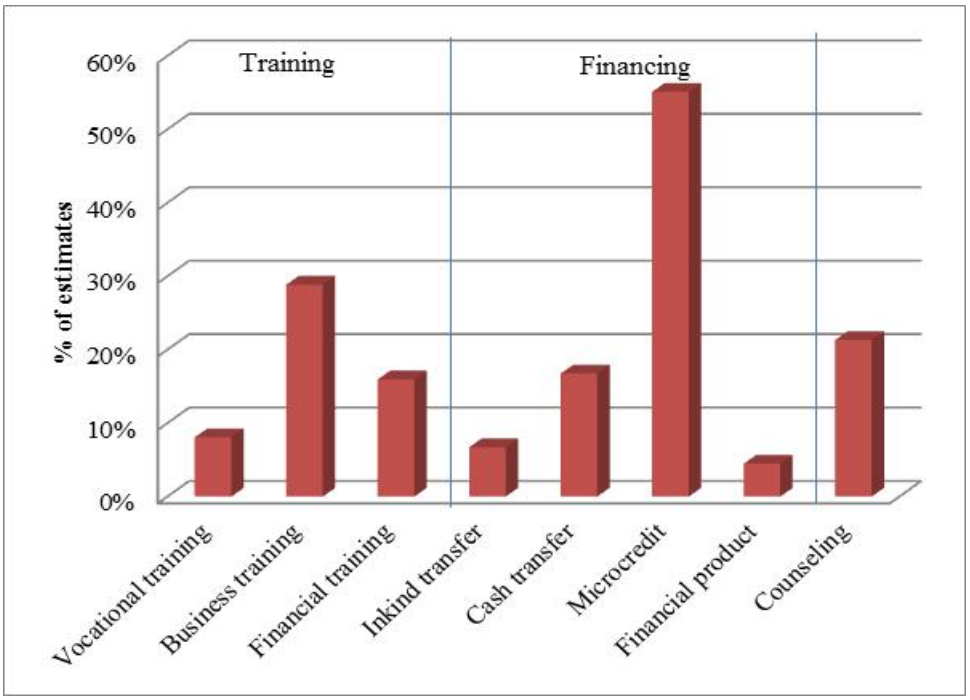

Figure 2. Proportion of Estimates by Intervention Type

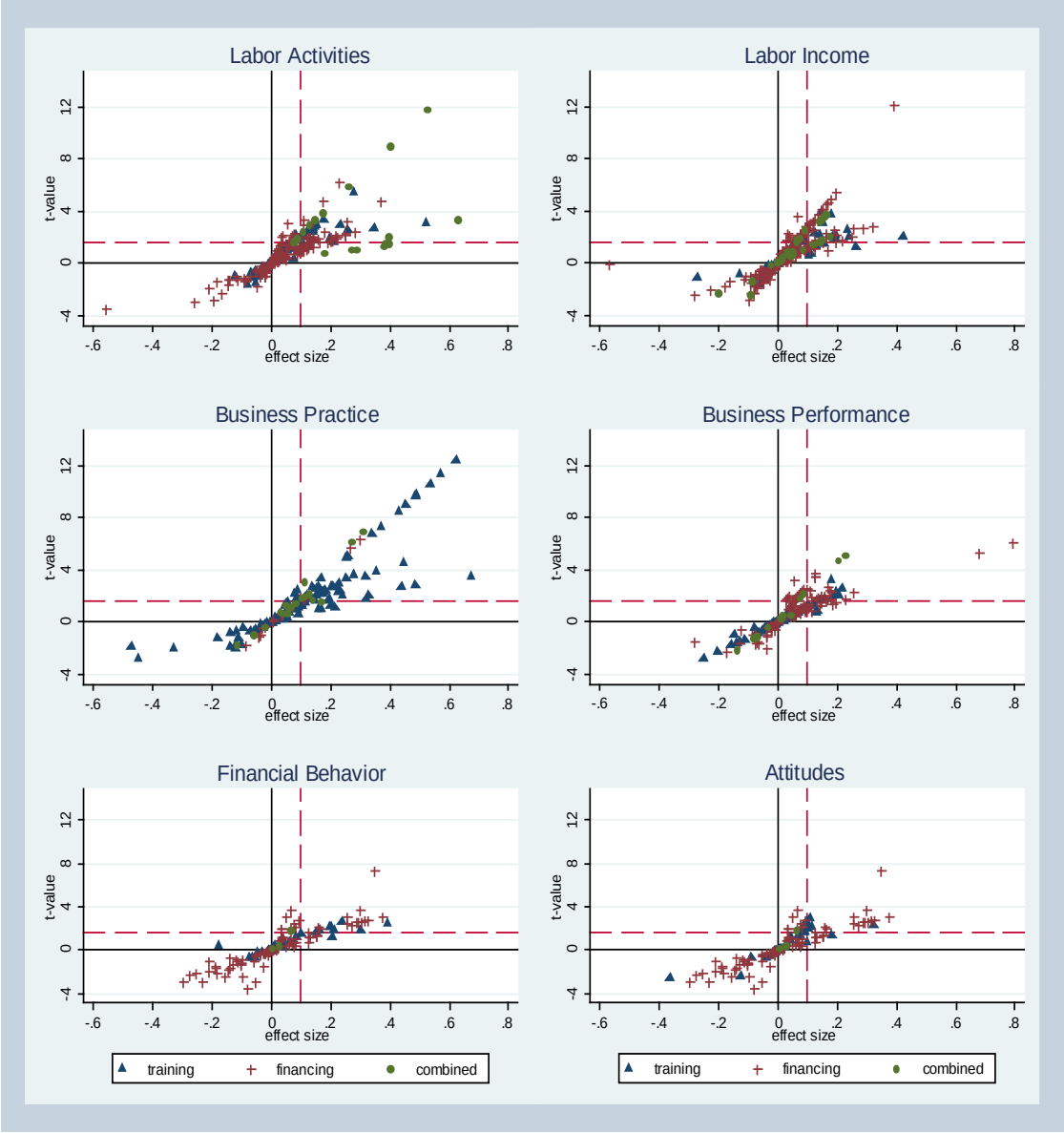

Figure 3. Significance and Effect Size by Types of Intervention and Outcome.

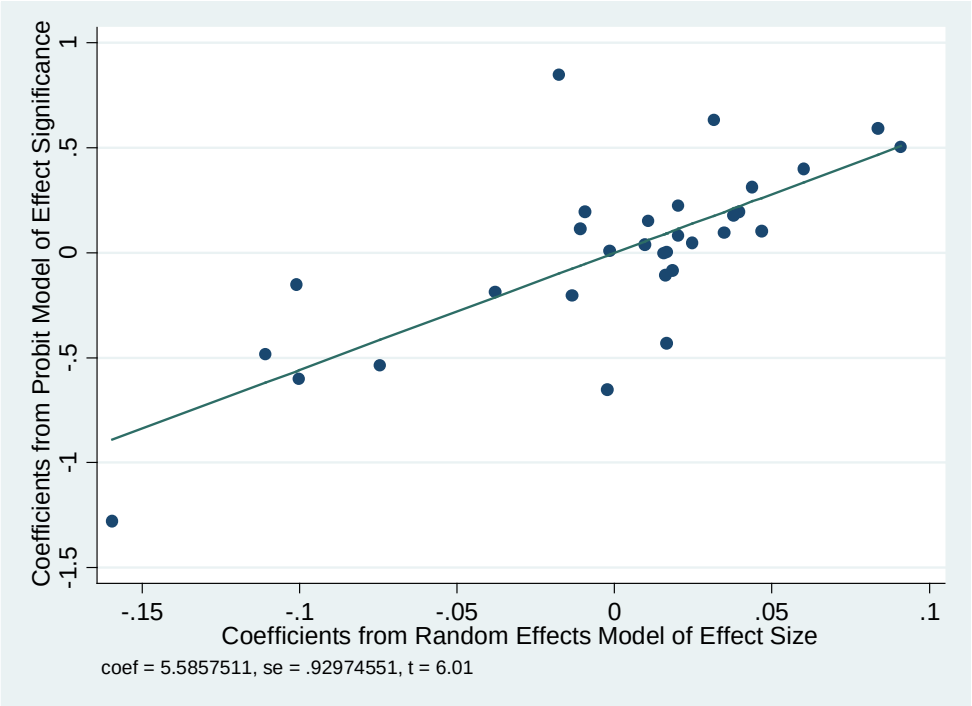

Figure 4. Comparison of Probit and Random Effects Models.

Appendix

Table A1. Studies used for meta analysis and main results

Study id	Group	country	Income	region	Year	Interval (months)	Main intervention	Outcomes
Almeida and Galasso. (2009)	SA beneficiaries	Argentina	Upper middle income	LAC	2005	13	in-kind grants and technical assistance for graduation of Jefes program	LM activities: - LM income: 0
Attanasio et al. (2011)	Youth	Colombia	Upper middle income	LAC	2006	14	3 month vocational training, 3 months on the job training	Female LM outcomes: + Male LM outcomes: 0
Banerjee and Duflo. (2008)	SMEs	India	Lower middle income	South Asia	2002	24	Policy change that increases an influx of credit on SME's	Profit, sales:0
Banerjee et al. (2010)	Women	India	Lower middle income	South Asia	2008	22	Expansion of microfinance institute	Business setup, profits: +
Bali Swain and Varghese. (2011)	Microfinance clients	India	Lower middle income	South Asia	2003	36	Comparing different delivery modes of training for microfinance clients: Model 1 (bank-formed and financed group), Model 2(NGO formed but bank financed), Model 3(NGO formed and financed).	Income: 0 Assets: + NGO linkage model +
Berge et al. (2011)	Microfinance clients	Tanzania	Low income	Africa	2009	7	Impacts of business training and grants (cash) among PRIDE (microfinance) clients.	Knowledge:+ Sales:+ Profits: + (male)
Bjorvatn and Tungodden. (2010)	Microfinance clients	Tanzania	Low income	Africa	2009	7	Business training among microcredit clients, microenterprise owners.	Knowledge:+
Blattman et al. (2011)	Youth	Uganda	Low income	Africa	2011	13	Vocational training and tools/materials for self emplomen t.	LM activities :+ Profits: +
Brune et al. (2011)	Small holder farmers	Malawi	Low income	Africa	2010	17	Access to bank account: ordinary vs. commitment group	Profit: 0 Sales, income: + (only for commitment group)
Bruhn et al. (2011)	Young entrepreneurs	Bosnia and Herzegovina	Upper middle income	ECA	2010	7	Business and financial training	Profit, sales, new business practice: 0
Carneiro et al. (2009)	SA beneficiaries	Chile	Upper middle income	LAC	2007	48	Chile Solidario, providing psycho-social support as well as transfers.	LM activities, income: 0 Optimism: +
Calderon et al. (2011)	Female entrepreneurs	Mexico	Upper middle income	LAC	2010	10	Basic business training	Profits, revenues, number of clients served: +
Card et al. (2011)	Youth	Dominican Republic	Upper middle income	LAC	2005	11	Vocational training+internship	LM activities: 0 Earnings when working: +

Table A1. (Continued)

Study id	Group	country	Income	region	Year	Interval (months)	Main intervention	Outcomes
Cole et al. (2010)	Unbanked households	Indonesia	Lower middle income	EAP	2010	26	Financial literacy training, subsidies (small, medium, high) contingent upon bank account	Bank account:+ savings: 0 (higher effects of incentives than training)
Crepon et al. (2011)	Rural households	Morocco	Lower middle income	MENA	2009	22	Expansion of MFI (and access to credit)	Business setup: 0 Income, sales: +
De Mel et al. (2008a)	Microenterprise owners	Sri Lanka	Lower middle income	South Asia	2008	39	Cash/in-kind transfer	Profits: + (male)
De Mel et al. (2008b)	Microenterprise owners	Sri Lanka	Lower middle income	South Asia	2007	26	Small or large cash, or in-kind equipment	Profits, capital stock: + (male)
De Mel et al. (2011)	Microenterprise owners	Sri Lanka	Lower middle income	South Asia	2010	73	Provision of information on loans, prodedures of getting the loan (applications, requirements of guarantors,etc).	Take up of loan: +, Profits: 0
Drexler et al. (2011)	Microenterprise owners	Dominican Republic	Upper middle income	LAC	2008	13	Compare the impacts of full version of financial training, simplified version of training, and on-site visits for counseling.	Business practice : + (simplified version), income: 0
Dupas and Robinson. (2009)	Market vendors (women) and bicycle-taxi drivers (men)	Kenya	Low income	Africa	2009	42	Access to non-interest bearing bank account. Significant effects on women (vendors) but no impacts on men (bike-taxi drivers)	saving, investment, expenditure: + revenue, hours worked: 0
Fafchamps et al. (2011)	Microenterprise owners	Ghana	Lower middle income	Africa	2010	13	Cash grant or in-kind subsidies	Profits: + cash<in-kind (especially women)
Field et al. (2010a)	Women	India	Lower middle income	South Asia	2007	4	Financial and business skills training	Income, loan: + Business plan:0 Results varying by social status
Field et al. (2010b)	Women	India	Lower middle income	South Asia	2010	37	Changes in term structure from short to longer term repayment.There is a significantly positive impacts of giving grace period for repayment on those business owners.	Profit, business setup, income: +
Gine and Yang (2009)	Farmers	Malawi	Low income	Africa	2006	1	Provision of credit for technology adoption with or without weather insurance.	Take up of loan:+ (only without insurance purchase)
Gine and Karlan (2010)	Microfinance clients	Philippines	Lower middle income	EAP	2006	19	Changes from group to individual liability of repayment.	Default: 0

Table A1. (Continued)

Study id	Group	country	Income	region	Year	Interval (months)	Main intervention	Outcomes
Gine and Mansuri (2011)	Microfinance clients	Pakistan	Lower middle income	South Asia	2008	18	Business training+lottery of winning larger amount of loans.	Knowledge, business practice, psychological wellbeing:+ Profits: 0
Karlan and Zinman (2010)	Marginally rejected loan applicants	South Africa	Upper middle income	Africa	2006	27	Expansion of access to consumer credits	LM activities, income, consumption, wellbeing:+
Karlan and Zinman (2011)	Marginally rejected loan applicants	Philippines	Lower middle income	EAP	2007	13.51233	Expansion of access to consumer credits	Number of business activities or employees: -
Karlan and Valdivia (2011)	Female microfinance clients	Peru	Upper middle income	LAC	2005	20	Business training added to microcredit	knowledge:+ profits, revenue, employment: 0
Klinger and Schündeln (2007)	(Potential) Business owners	G&N	Lower middle income	LAC	2005		Business training and monetary prize	Business expansion: +
Mano et al. (2011)	Microenterprise owners	Ghana	Lower middle income	Africa	2008	13	Business training	Profit, practice, revenue: +
Macours et al. (2011)	SA beneficiaries	Nicaragua	Lower middle income	LAC	2009	32	Vocational training, grants	LM activities, income, profits: + (grants)
McKenzie and Woodruff (2008)	Small retail firms	Mexico	Upper middle income	LAC	2006	3	Cash or in-kind transfers on retail firms.	Profits: + (financially constrained)
Pitt et al. (2006)	Microfinance clients	Bangladesh	Low income	South Asia	1999	96	Microcredit	Women's empowerment: +
Premand et al. (2011)	Youth	Tunisia	Upper middle income	MENA	2011	3	Entrepreneurship education (proposal) for college graduates	Knowledge, self employment: + LM income: 0
Attanasio et al. (2012)	Rural households	Mongolia	Lower middle income	EAP	2009	2	Microcredit (group vs. individual lending vs. no lending)	Profit: + (group lending) Business setup: + LM income: 0
Augsburg et al. (2012)	Marginally rejected loan applicants	Bosnia and Herzegovina	Upper middle income	ECA	2010	15	Expansion of access to loan	LM activities: + Consumption: 0 saving:-

Table A2: Summary of effect size by program characteristics and estimates significance

Effect Size	Overall	Insignificant or negative at 10%	Significantly positive at 10%
Proportion	100%	71.80%	28.20%
Average	0.058	0.009	0.183
Intervention Types			
Training only	0.057	0.002	0.212
Training+Counseling	0.095	0.019	0.232
Financing only	0.052	0.007	0.164
Financing+Counseling	0.011	-0.002	0.103
Training+Financing	0.104	0.052	0.181
Outcomes of interest			
LM Activity	0.065	0.017	0.181
LM Income	0.036	0.005	0.136
Financial Behavior	0.034	-0.017	0.204
Business Practice	0.106	0.007	0.254
Business Performance	0.044	0.009	0.154
Attitudes	0.090	0.044	0.180
Beneficiaries			
Female	0.048	0.011	0.158
Youth	0.102	0.010	0.226
High Education	0.082	0.016	0.223
SA beneficiaries	0.046	0.001	0.150
Entrepreneurs	0.063	0.012	0.201
Urban	0.036	0.013	0.104
Providers			
Government only	0.036	0.013	0.104
NGO only	0.081	0.031	0.164
University only	0.067	0.011	0.161
MFI and banks only	0.055	0.008	0.195
Mutilple providers	0.058	0.001	0.213
Regions			
AFR	0.122	0.033	0.258
EAP	0.003	-0.009	0.138
ECA	0.039	0.005	0.198
LAC	0.053	0.017	0.168
MENA	0.084	-0.003	0.206
SAR	0.046	-0.002	0.121
Income level			
Low income	0.130	0.019	0.273
Lower middle income	0.043	0.005	0.127
Upper middle income	0.057	0.010	0.210

Table A3. Distribution of Type of Intervention by Outcomes of Interest

Type of intervention	Disaggregated intervention	LM Activity	LM Income	Business Practice	Business Performance	Financial Behavior	Attitudes
Training only	(1) vocational	6	16	.	.	.	.
	(2) business+financial	1	13	60	44	30	
	(3) business	.	11	33	17	6	12
Training+counseling	(4) vocational+counseling	18	17	.	.	.	.
	(5) business+counseling	38	3	16	.	.	13
	(6) financial+counseling	.		10	10	.	.
Training+financing	(7) vocational+financing	9	18	3	3	.	.
	(8) business+financing	8	11	16	9	3	4
Financing only	(9) grant (cash, in-kind)	10	36	.	12	.	.
	(10) microcredit	109	116	17	81	83	61
Financing+counseling	(11) financing+counseling	43	68	.	8	4	10
Total		242	309	155	184	126	100

Note: the number of observations are specified in the table.

Table A4. Random Effect Regression Model : Labor Outcomes

	LM Activity	LM Income
	(1)	(2)
	coef/se	coef/se
Training	-0.050***	-0.031
	(0.002)	(0.031)
Training+Financing	0.184***	-0.021
	(0.025)	(0.018)
Female	-0.009	-0.021
	(0.027)	(0.024)
Youth	0.060***	0.028
	(0.015)	(0.023)
High education	-0.002	0.049*
	(0.007)	(0.025)
Microenterprise owners	-0.015***	-0.016
	(0.003)	(0.024)
Social assistance beneficiaries	-0.027	0.017
	(0.017)	(0.037)
Microfinance clients	-0.054**	0.019
	(0.022)	(0.034)
Urban	0.008	0.040**
	(0.005)	(0.020)
Private sector delivery	0.018	0.031
	(0.015)	(0.024)
Months since completion/100	0.109**	0.175**
	(0.054)	(0.085)
Number of observations	223	309
Adjusted R2	0.373	0.179

note: *** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by study id and reported in parenthesis. Dependent variable is the estimated effect size.

The omitted category is Financing only. All specifications include study characteristics (journal publication, experimental design, and the square root of number of observations), region and income dummies, which are not reported here.

Table A5. Random Effect Regression Model: Business Outcomes

	Business Practice	Business Performance
	(1)	(2)
	coef/se	coef/se
Training	0.075*	-0.075***
	(0.041)	(0.024)
Training+Financing	0.012	-0.142***
	(0.012)	(0.032)
Female	-0.064	-0.032
	(0.076)	(0.028)
Youth	0.467	0.155***
	(0.298)	(0.027)
High education	0.011	0.014
	(0.019)	(0.033)
Microenterprise owners	0.078**	-0.037**
	(0.037)	(0.017)
Social assistance beneficiaries	-0.363	-0.111**
	(0.226)	(0.056)
Microfinance clients	0.037	-0.034
	(0.093)	(0.037)
Urban	-0.044	-0.077***
	(0.116)	(0.023)
Private sector delivery	-0.313*	0.021
	(0.189)	(0.031)
Months since completion/100	-0.509	0.347***
	(0.353)	(0.134)
Number of observations	155	184
Adjusted R2	0.328	0.445

note: *** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by study id and reported in parenthesis. Dependent variable is the estimated effect size.

The omitted category is training combined with financing. All specifications include study characteristics (journal publication, experimental design, and the square root of number of observations), region and income dummies, which are not reported here.

Table A6. Random Effect Regression Model: Behavioral Outcomes

	Financial Behavior	Attitudes
	(1)	(2)
	coef/se	coef/se
Financing (Microcredits)	-0.019	-0.003
	(0.039)	(0.035)
Female	0.017	0.133**
	(0.029)	(0.064)
Youth	0.237***	-0.010
	(0.074)	(0.037)
High education	-0.109***	0.305*
	(0.013)	(0.171)
Microenterprise owners	0.045	0.044
	(0.065)	(0.030)
Social assistance beneficiaries	(dropped)	(dropped)
Microfinance clients	-0.018	0.028
	(0.048)	(0.049)
Urban	0.026	0.016*
	(0.068)	(0.010)
Private sector delivery	0.036	0.129*
	(0.036)	(0.072)
Months since completion/100	0.322	0.115
	(0.292)	(0.322)
Number of observations	126	100
Adjusted R2	0.287	0.458

note: *** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by study id and reported in parenthesis. Dependent variable is the estimated effect size.

The omitted category is business training. All specifications include study characteristics (journal publication, experimental design, and the square root of number of observations), region and income dummies, which are not reported here.