

The Profits of Wisdom

The Impacts of a Business Support Program in Tanzania

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WORLD BANK GROUP

Africa Region

Office of the Chief Economist

&

Gender Group

December 2017

Abstract

Business training programs in low-income settings have shown limited, if any, impacts on firm revenues and profits, particularly for female entrepreneurs. This paper uses a randomized design to compare the impacts of two types of business training programs targeting women with established small businesses in urban Tanzania. The basic version of the training relied on in-class sessions to strengthen the managerial and technical skills of the participants. In the enhanced version, training was supplemented by individual visits from business coaches to the sites of participants'

activities, as well as other services tailored to their individual needs. The study finds no impact of the basic training on business practices and business outcomes. Participants in the enhanced training are more likely to adopt new practices, but show no effects for revenue or profits, on average. However, the average masks large heterogeneous effects: entrepreneurs with low levels of experience show reduced revenues; those with more experience benefit from the program. This finding suggests that business training programs may have greater impacts if they are more carefully targeted.

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Keywords: entrepreneurship, female entrepreneurs, training, business practices, business outcomes, MSME, Tanzania, randomized control trial, experiment.

JEL classification: O12, J16, L26, M53

1. Introduction

A large fraction of individuals in low-income countries are self-employed, working in small-scale and low-productivity activities. This is particularly true for people living in Sub-Saharan Africa and women. Business training is often cited as a critical intervention to increase the productivity of these enterprises and contribute to national development.

To measure the effects of such interventions, it is important to distinguish between three possible levels of change: increase in knowledge, actual adoption of practices, and improvements in business outcomes. A comprehensive review of these experiments concludes that while most of the programs evaluated successfully promoted the adoption of new business practices, there is very little evidence that they can affect the business revenues and profits of their average participant (McKenzie and Woodruff 2013).

These findings lead to three possible conclusions: 1) skills are not the binding constraint to firm growth, 2) the current curricula focus on the wrong types of skills, and/or 3) training is targeting the wrong entrepreneurs. This study provides some evidence that business training can help and hurt different entrepreneurs and hence better targeting will improve the effectiveness of these programs. Using a randomized control trial, we assess the relative impact of two versions of MKUBWA,¹ a business training program which targeted female entrepreneurs with established activities in urban Tanzania. These entrepreneurs operate in sectors that the training provider had identified as having significant growth potential based on a market study. In the basic version of the training, the program relied on in-class sessions to strengthen the managerial and technical skills of the participants. In the enhanced version, training was supplemented by individual visits from business coaches to the site of participants' activities, as well as other services tailored to their individual needs. The coaches who conducted these visits addressed both the managerial and the technical aspects of the businesses, and the visits took place in the months following the in-class sessions. Participants were randomly assigned to the enhanced training, the basic training, or a control group.

In our study of MKUBWA, we measure the impact of the program one year after the end of the in-class group sessions, about two years after the start of the whole program. We find that the basic training had no impact on either the business practices or business outcomes of its participants. This result is in line with what Berge et al. (2014) found for female entrepreneurs. The participants in the enhanced training on the other hand do adopt new business practices. Even for this enhanced training, however, we do not observe any significant effect on the revenues and profits for the *average* participant. Exploring the idea further that different individuals may require different training, we test for heterogeneous effects and find that the enhanced program has a positive and significant impact on the entrepreneurs who had engaged in

¹ Acronym for "Program to grow entrepreneurship and women entrepreneurs", but meaning also 'big', 'large', 'great' in Kiswahili.

their main activity for at least nine years. Conversely, entrepreneurs in the lowest quartile of experience exhibit decreased revenues after being exposed to the basic program. These results are confirmed by several robustness checks. We can rule out factors that may be associated with firm longevity such as education, asset accumulation and networks as explanations for this heterogeneity.

The implications from these findings are twofold. First, the delivery method affects the effectiveness of a training program, and individualized support can be especially helpful. Second, this kind of training program is most effective for experienced entrepreneurs. This could be because their experience complements the managerial skills provided by training programs. It could also be that these entrepreneurs have already overcome other binding constraints that still limit the ability of less mature entrepreneurs to grow their businesses.

The rest of the paper is organized as follows. Section 2 provides a review of the related literature. The third section provides further details of the MKUBWA program. Section 4 discusses our data and identification strategy and section 5 presents the results. Section 6 concludes.

2. Related literature

The literature on business training programs has grown substantially in the past five years, documenting the results of multiple studies designed to test the effectiveness of these programs. McKenzie and Woodruff (2013) reviewed 16 randomized control trials and one regression discontinuity study evaluating the impact of business skills training. They observed that while some programs successfully increase knowledge or promote the adoption of new business practices among entrepreneurs, the vast majority of these experiments do not detect any effect on revenues or profits. Yet, we should not conclude from these results that managerial capital is not relevant to firm performance. A subsequent paper by the same authors (2015), building upon work by Bloom and Van Reenen (2010), and drawing on data collected in six countries (Bangladesh, Chile, Ghana, Kenya, Nigeria, Sri Lanka), showed that even for small informal firms, business practices matter and are associated with larger profits and higher growth. In this later paper, McKenzie and Woodruff indicated that if most business training programs do not detect any effect on business outcomes, it is most likely because their effect on business practices, while significant, is too small.

Moreover, a key insight from McKenzie and Woodruff's 2013 review article is that there are substantial differences among the programs that were evaluated, and that program characteristics, particularly in terms of content, significantly affect their effectiveness. Most training programs focus on general business skills applicable to a wide range of activities. These programs seek to encourage practices such as keeping records, separating the household and the business budgets, or expanding marketing efforts. However, it appears that the interventions that

do succeed in changing the business practices of their beneficiaries tend to combine general management training with sector-specific technical training. For example, Valdivia (2012) tested the relative effectiveness of two types of training among female entrepreneurs in Lima. The first type of training relied on in-class sessions focused on general business practices only. The second type combined these in-class sessions with technical assistance delivered through a combination of group and individual support sessions. Valdivia found that while entrepreneurs who only received the core training were more likely to close their businesses, entrepreneurs assigned to the second group were more likely to change their practices in response to the intervention, leading to a significant increase in their sales.

When a training program fails to affect business practices or business outcomes, it may be because its content is not helpful to the participants, or because its delivery method does not allow participants to internalize its content. Programs also vary in the way they deliver training material and this too can have an impact. A number of training programs that have successfully improved the business practices of participants combined group sessions with individualized support. In the experiment focused on financial literacy designed by Drexler et al. (2011), a subset of participants was randomly selected to receive follow-up visits by coaches. They found that this intervention increased the revenue of both the participants who received this additional support and those who only received the standard “rule of thumb” training package. This is in contrast to the results of Valdivia (2012), discussed above, where only the participants who received a combination of group and individual sessions experienced a positive impact on business outcomes. Results from experiments that tested the effectiveness of providing consulting services appear to confirm the notion that customized support is useful in helping firms improve their performance. In Mexico, Bruhn et al. (2013) found that such services could lead to higher sales and profits. In India, Bloom et al. (2013) assessed the effectiveness of consulting services targeting 17 large textile plants and detected an increase in productivity. It should be noted, however, that the firms considered in both studies are much larger than the ones run by participants in most business training programs, including the MKUBWA program considered here.

Overall, these findings suggest that emphasizing technical knowledge rather than general management techniques and complementing classroom teaching with individualized sessions can be helpful in increasing training effectiveness. Beyond results regarding the content of the trainings, another critical finding from previous experiments is that the impact of such programs varies significantly with the characteristics of the beneficiaries. A likely reason for these heterogeneous impacts is that different entrepreneurs face different sets of constraints, depending on their profile and situation.

Gender is a key dimension along which constraints differ. In Sub-Saharan Africa women tend to suffer from lower endowments in assets or education, lower control over their resources or time,

and circumscribed mobility. While the existing research does not provide a complete picture of the extent to which these challenges affect the performance of female-owned firms, there is an abundant body of evidence demonstrating that women running business tend to make decisions that are systematically different from those of men. Regarding business investments for instance, Fafchamps et al. (2015) found that in Ghana women are less able than men to channel resources towards their business. Another important gender difference is the entrepreneur's choice of the sector of activity, which is one of the strongest predictors of profitability. Multiple studies have shown that women mostly operate businesses in sectors where profits are low (Hallward-Driemeier 2013; Bardasi, Sabarwal and Terrell, 2011; Costa and Rijkers 2012; Campos et al., 2015). Finally, and most relevant to this study, McKenzie and Woodruff (2015) found that advanced business practices are less common in women-owned firms than in men-owned firms.

Taking stock of these preexisting gender gaps is essential when interpreting the findings of experiments that found that training programs benefited men more than women. For example, Berge et al. (2012) targeted microfinance clients, both men and women, in urban Tanzania. The study revealed significant gender differences in the effectiveness of the program, and observed that only the male participants were able to put new skills into practice and increase their sales. In rural Pakistan, Giné and Mansuri (2014) found that a business training program increased female participants' knowledge of business practices, but did not have any other effect on their business activities. For male participants on the other hand, the program also decreased the likelihood of business failure, improved business practices and increased household expenditures. Other studies conducted in Latin America (Karlan and Valdivia 2010; Drexler et al. 2012; Valdivia 2012) or South Asia (De Mel et al. 2012) showed that training programs can help female entrepreneurs adopt new business practices. In the case evaluated by Valdivia (2012), the program also had an impact on the revenues of the participants (all women).

Beyond gender, other characteristics of participants matter for the success of business training programs. Calderon et al. (2013) assessed a two-day business training program delivered to Mexican female entrepreneurs and found that the impact of the program was strongest among the entrepreneurs with the greatest initial ability. The findings of Banerjee et al. (2014) show the importance of experience. Their experiment assessed the long-term effects of a microfinance program among small entrepreneurs in India. The results showed that access to microfinance has a large and sustained impact on the businesses of 'seasoned' entrepreneurs, but not on the businesses of less mature entrepreneurs. This experiment focused on providing financial capital, while the intervention we consider in this study involves expanding entrepreneurs' managerial capital. Yet, these findings suggest that the amount of experience accumulated by the beneficiaries can be an important determinant of the effectiveness of an entrepreneurship intervention.

Taken together, these results suggest that more precise targeting and customization of training may increase its effectiveness. What variables should be used for targeting is not yet clear. One example comes from a recent study by Fafchamps and Woodruff (2015) in Ghana. The authors used two distinct methods to identify firms with high growth potential: the opinions of the judges of a business plan competition and the analysis of the characteristics of the firm and its owner, based on the entrepreneur's responses to a survey. Half of the entrepreneurs were then randomly selected to participate to a customized management training program. While both methods worked to predict which firms would grow the most, the training program did not show any positive impact on the growth of the business 14 months after it ended, regardless of the firm's growth potential. This result can be interpreted as an indication that business programs do not alleviate a binding constraint for small entrepreneurs, but may also suggest that a firm's growth potential is not the right variable to target to increase the effectiveness of a training intervention.

On the whole, training programs appear most likely to improve business outcomes when they get two dimensions right: they target participants who are in a position to benefit from new knowledge and they deliver relevant material in a format that allows participants to internalize it. When working to support women entrepreneurs, this means identifying not only the correct target group but also solutions that address the specific constraints this group faces, including the need to combine business objectives with other commitments, which is especially pressing for women.

3. The interventions and design of the experiment

This study is designed to evaluate the effectiveness of two types of business training targeted to female entrepreneurs in Dar es Salaam provided by a partnership of two NGOs: AIDOS (the Italian Association for Women in Development) and the Tanzania Gatsby Trust (TGT).² In the basic version of the training, participants attended in-class sessions providing both management and technical skills. Five full days were allocated to entrepreneurship and business management training (EBMT). The key practices taught during these sessions included market analysis, business plan development, pricing and marketing strategies, cost control, book-keeping, human resources management, leadership training, time management, and communication and negotiation techniques. While the sessions dedicated to management practices were the same for all participants, courses with technical content differed depending on the sector of activity of the entrepreneur. The technical courses were sector-specific as they were intended to strengthen the participants' production skills, including quality management, packaging and labeling, customer care, compliance with regulation, equipment maintenance, and traceability. The same content of the EBMT and technical training was delivered to both basic and enhanced training participants,

² TGT, based in Dar es Salaam, implemented the intervention and AIDOS, based in Rome, provided advice and technical assistance to TGT, based on a model that AIDOS developed and implemented in some Middle Eastern countries (Jordan, the Arab Republic of Syria, the Gaza strip) and in Nepal.

but in separate sessions (different days), to avoid any exchange between the two groups and prevent potential contamination (albeit at this stage the treatment was the same).

In addition to in-class training the enhanced version of the training also delivered an orientation and individualized coaching sessions. The orientation took place during a 2-day workshop that preceded the in-class training. Its goal was to help the participants perform a SWOT (strengths, weaknesses, opportunities and threats) analysis of their own business to verify its health and assess its viability and profitability, identify investment opportunities, and make conscious choices regarding the enterprise. The individualized coaching sessions took place after the in-class sessions, over a period of about a year. The recipients of the enhanced training received periodic visits on-site (often at their home, where the business was typically located) by specialized coaches. Two different instructors—one advising on management practices and one providing technical knowledge and support—visited each of the entrepreneurs enrolled in the enhanced training. During the ‘management practice’ visits, coaches would check the books, the practices, and the premises of the entrepreneurs to assess whether the notions transmitted in class were actually applied. Moreover, the coaches would provide management and marketing advice, help entrepreneurs develop strategies to reach new markets, and link them with consultants, advisors or mentors, based on the specific challenges faced by the individual enterprise. They would also provide guidance on options for accessing financial capital. Technical coaches (selected by TGT from among successful and accomplished entrepreneurs in the same sector of operations) visited the entrepreneurs at least twice to ensure that any serious technical gap would be addressed. Technical coaches would, for example, advise entrepreneurs in the poultry sector on how best to access and administer vaccines, how to prevent avian flu, and how to identify and purchase high quality feed.

The number and content of the on-site coaching sessions depended on the needs identified during a first in-depth visit. During this initial visit, the managerial coaches used a questionnaire to collect detailed data which were analyzed by AIDOS and TGT in order to design a customized coaching program. This first visit confirmed that different businesses needed different types of support. For example, businesses in food-related sectors (food processing and services) primarily needed to improve their quality control and supply management processes. The main challenge of businesses in the textile, tailoring and handicraft sectors, on the other hand, was market access; these businesses needed support in developing adequate marketing strategies. At the end of the training period, several entrepreneurs also received specialized business development services (BDS), including assistance with product development and design (PD&D), strengthening of market linkages, and improvement of marketing strategies. Local experts and, at times, international experts delivered this component, which included visits to market places in Dar es Salaam, participation in fairs, and sessions with designers. This sector-based component was delivered to entrepreneurs whom the coaches identified as in need of special support (because of the type of sector or activity they were running) and ready/able to introduce the

proposed innovations in their enterprise.³ Annex 2 provides a visual representation of the various components of the intervention.

The intervention was only delivered to women, with the specific goal of enhancing their skills and helping them overcome some of the gender-specific obstacles they face. The design of the intervention recognized that women entrepreneurs juggle several commitments and as a result face significant time and mobility constraints. Very often, they run their businesses out of their homes. Moreover, in part because of their lower education achievement, women tend to have had fewer opportunities than men to acquire relevant skills. To address these constraints, classes were run only during times and for durations that were more convenient for women, and were organized in locations and around transport options accessible to women, who were compensated for the travel expenses. The classes with dense technical content were repeated for the benefit of women with lower literacy skills. In recognition that women often run more than one business, the program helped women to identify and direct their energy to the most promising one.

AIDOS supported a local NGO, the Tanzania Gatsby Trust (TGT) in designing and implementing the various components of both the basic and the enhanced training. Prior to designing the two versions of the training program, AIDOS and TGT conducted market research in order to identify sectors with stronger growth potential to better target the recruitment of training participants. The entrepreneurs who enrolled in the training programs were selected from those who had businesses in the following sectors: food or soap processing, trade, food retail, animal husbandry, handicraft or light manufacturing, textile and tailoring and services including beauty services, venue decoration or child care (Table 1 presents the distribution of the entrepreneurs in our sample by sectors).

In order to be eligible for participation in the training, applicants had to be at least 18 years old, literate, and have an established⁴ business in one of the targeted sectors. Unlike other similar experiments (such as Berge et al., 2014; Giné and Mansuri, 2011), the women recruited for the intervention did not need to be microfinance clients, although many were and several had access to bank financing (see the discussion below on the recruitment strategy). At the time of their selection, the mean revenue generated by the participants' main businesses was 440 dollars per

³ As the enhanced version of the training consisted in providing customized, individualized support, by definition this intervention differed across entrepreneurs. This is in contrast with the basic training that was delivered in exactly the same way to all participants (although different trainers may have delivered it slightly differently, based on their skills and personality, to different classes). What is interesting in the enhanced version of the training is that the intervention (its intensity and quality) depended also on the coaches' perception of the skills of the entrepreneur and her potential to succeed. It was also different depending on the sector and type of activity (for example, PD&D was more relevant for textile than poultry farming). This degree of heterogeneity in the treatment itself was part of the design, that is, the enhanced version of the training was about delivering training that was to some extent customized in order to meet the needs and characteristics of the entrepreneur.

⁴ For screening purposes, the definition of 'established' was that the business had to have been operating for at least a year. Survey data indicate that the majority, but not all, of the businesses in the treatment and control groups met this criterion.

month (TZS 659,548), and the median profit was 205 dollars (TZS 306,850). Participants were 43 years old on average, and employed 1.3 workers, in addition to themselves. The baseline characteristics of participants are reported in table 2.

The intervention was widely advertised and ‘branded’ with the purpose of creating a sense of ownership and pride in the entrepreneurs. The virtual incubator was named MKUBWA (an acronym for “Program to grow entrepreneurship and women entrepreneurs”, but a word that also means big, large, or great in Kiswahili). It had its own logo and issued ID cards to all women, including those in the control group; the same ID number was used for the M&E, the impact evaluation, the surveys carried out by TGT,⁵ and all communication with TGT. Moreover, in order to keep the women interested in the program and minimize attrition, during the period September 2010-March 2012 TGT organized and delivered (through NGOs operating in Dar es Salaam) four ‘complementary’ sessions to all women, including those in the control group, on HIV/AIDS, gender-based violence, and family planning.⁶

To recruit participants for this intervention, a promotional campaign took place in December 2009-January 2010 that reached about 6,000 women (via radio, leaflets, and through various NGOs). About 3,400 women expressed their interest by contacting TGT. Of those, 2,200 met the selection criteria (based on a set of questions included in the application form) and were admitted to the next stage of the selection process. This next step involved a presentation session during which women were informed of the details of the program and the existence of a registration fee to be paid by those selected and were invited to re-submit a more detailed application.

4. Data collection and identification strategy

From all program applicants, based on funding constraints, 850 were selected and 821 participated in a baseline survey for this experiment in June-July 2010 before starting the intervention. After the interview, the 821 entrepreneurs were randomly assigned to either the control group, the basic training group (group 2), or the enhanced training group (group 3). When conducting the randomization, we stratified on three dimensions: geographical district, sector of activity, and the type of gift received by the participants at the time of the interview.⁷ The entrepreneurs in our sample resided in four districts in or around Dar-es-Salam, and their activities were classified into nine distinct sectors, as detailed in Table 1.

⁵ Such as the short survey at the application stage, the participants’ feedbacks after training sessions, the in-depth survey run during the first coaches’ visit, etc.

⁶ These sessions were considered to be unrelated to the intervention, but were useful to maintain the engagement with all women, as confirmed by the feedback received, with potential positive impact on the response rate in the endline survey.

⁷ Each interviewee received a gift as an incentive to participate in the interview. Two types of gifts were randomly assigned – a personal gift (a *kanga*, the traditional fabric used as a wrap) or a business-related gift (a book to register revenues and costs). This was an additional experiment not covered here.

The first survey was conducted a few weeks before the launch of the training activities. Then, the in-class training activities covered a six-week period. Following these in-class sessions, entrepreneurs in the enhanced training received visits from the program’s coach. The follow-up survey was conducted in July-August 2012 a year after the last in-class session and two years after the baseline survey was conducted and the whole intervention started.

Overall, participation and attendance remained high throughout the training. The monitoring and evaluation data collected by TGT show that 75 percent of the basic training program participants and 87 percent of the enhanced training program participants attended all of the five day-long sessions covering management skills. Attendance for the technical components of the program was slightly lower: 66 percent of basic training program participants and 67 percent of the enhanced program participants attended at least three technical sessions. However, these relatively lower participation rates may be explained by the fact that participants attended only the technical sessions that were relevant to their activities.

The survey attrition rate was 14 percent, meaning that 702 firms could be interviewed in the follow-up survey. There are no significant differences in attrition rates across the three groups. The firms that dropped out of our sample are not different at baseline from the firms that did not (see Annex table A.2 for details).

Following McKenzie (2012), we use an ANCOVA specification to increase the precision of our estimates. As assignment to treatment was randomized, we obtain unbiased estimates of the ITT effect by estimating the following equation:

$$Y_i^E = \alpha + \beta_1 \text{BasicTreat} + \beta_2 \text{EnhancedTreat} + \gamma X_i + \delta Y_i^B + \varepsilon_i \quad (1)$$

Where Y_i^E is the endline value of the outcome of interest; *BasicTreat* is a dummy variable equal to 1 for individuals assigned to the basic training and zero otherwise; *EnhancedTreat* is a dummy variable equal to 1 for individuals assigned to the enhanced training and zero otherwise; X_i is matrix of the three time invariant covariates we used to stratify the randomization: the entrepreneur’s sector, her geographical district, and the type of gift she received; Y_i^B is the baseline value of the outcome of interest;. The parameter β_1 is an estimate of the average effect of the basic program. The parameter β_2 is an estimate of the average effect of the enhanced program. For binary outcomes, in addition to reporting the OLS estimates, we estimate a Probit model and report the marginal effects. The latter estimates can be interpreted as the difference in mean level of the outcome (for instance: difference in mean adoption of a specific business practice). We report robust standard errors throughout the study.

We also test for heterogeneity in treatment effects by examining the interaction of treatment with a number of characteristics of the entrepreneur measured at baseline. In order to do so, we estimate:

$$Y_i^E = \alpha + \beta_1 \text{BasicTreat} + \beta_2 \text{EnhancedTreat} + \beta_3 Z_i^B + \beta_4 \text{BasicTreat} \times Z_i^B + \beta_5 \text{EnhancedTreat} \times Z_i^B + \gamma X_i + \delta Y_i^B + \varepsilon_i \quad (2)$$

where Z_i^B is the characteristic considered, for example, the number of years during which the entrepreneur has engaged in her primary activity, β_4 estimates the difference in the effect of the basic training associated with one additional year of experience and β_5 estimates the difference in the effect of the enhanced training associated with one additional year of experience.

5. Results

Table 2 shows that the randomization was successful. We consider six different measures of revenues and profit. Five of these measures focus on the entrepreneur's primary business and include: typical monthly revenues, revenues in the month prior to the survey, revenues in the previous year, profit in the month prior to the survey, and profit in the previous year. The last measure includes typical monthly earnings from all sources of income.

At baseline, we detect no significant differences in any of these measures across the three groups. We also do not observe any differences in personal characteristics, asset accumulation and living standards.

Table 2 also documents the absence of differences in the level of adoption of specific business practices at baseline across the three groups. These statistics indicate a relatively high level of adoption of specific business practices prior to the intervention. For instance, at baseline over 51 percent of the firms in our sample have a budget and over 67 percent maintain a form of accounting system.

In Table 3, we consider the impact of the two versions of the intervention on the adoption of specific business practices that were emphasized during the training sessions. As indicated above, the individual visits conducted as part of the enhanced training were also meant to help participants implement these practices. The measures of business practices are self-reported by the entrepreneurs. We do not observe any impact on business practices for the entrepreneurs assigned to the basic training. The enhanced training, on the other hand, increased adoption of these practices by 7 to 15 percentage points. The behavior that sees the largest progress is the entrepreneurs' likelihood of paying themselves a wage, suggesting a greater ability to separate business and household budgets. Entrepreneurs in the enhanced training are also significantly

more likely to formalize, be it registering their businesses or acquiring a tax identification number.

These results on practices are consistent with previous findings in the literature. As indicated above, Berge et al. (2014) test the effectiveness of a training program relying on group sessions only (similar to our basic training), and find no impact on the implementation of new business practices among female participants. Valdivia (2012) found that a program combining group and individual sessions and covering both technical and managerial skills successfully helped female entrepreneurs adopt better business practices.

Table 4 reports estimates of the impact of the basic training and the enhanced training on the business outcomes of the average participants. We consider six measures of revenues, profits, and earnings and do not observe any significant impact of either version of the treatment. These results are consistent with previous findings in the literature.

As we rely on self-reported measures of revenues, profits, and earnings, we need to consider the possibility that the training program may have affected the participants' numeracy and accounting skills and therefore their accuracy in reporting these measures. For instance, trained entrepreneurs who might have overstated their profits prior to the intervention may be better able to calculate their profits after the training and report lower profits even if their actual profits have remained unchanged (or even increased). This would lead us to underestimate the impact of the training. (The bias may also go the other way, in which case we would overestimate the impact of the training.) Our end-line survey instrument included a digit-span recall test and we do not observe any significant difference in the average performance of the three groups. We also do not observe a stronger correlation between the different measures of business outcomes in the treatment groups than in the control group. For these reasons, we conclude that our estimates of the impact of the intervention are not biased by the intervention's effect on participants' numeracy skills.

In addition to collecting data on the entrepreneur's main business activities, we asked questions about secondary businesses. Participants in both training programs are not more likely to have launched new activities after the intervention (results available upon request). This is consistent with the fact that we do not observe any impact on our measure of aggregate monthly income from all sources and on the average value of household assets.

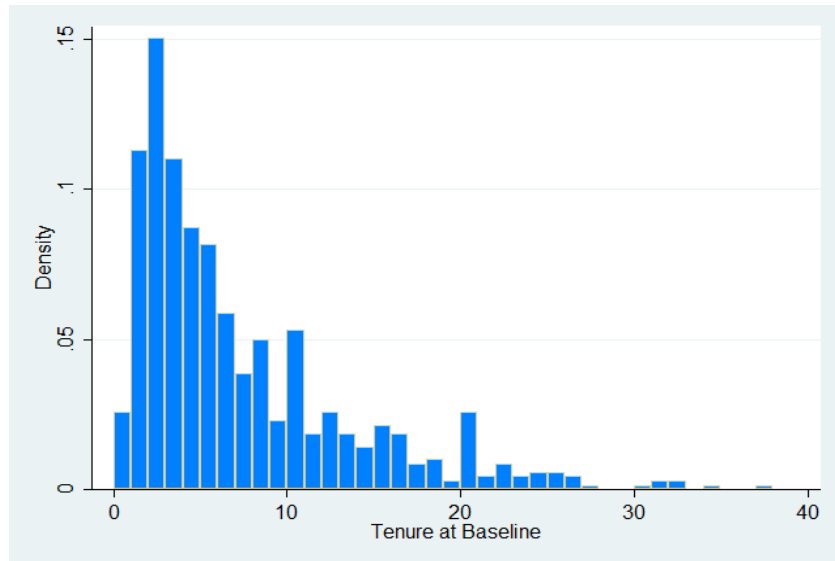
Following the possibility that more "seasoned" entrepreneurs may have benefited differently from the intervention, we test for heterogeneity of the treatment effect for entrepreneurs with different levels of experience and report the results in Table 5. We define experience as the entrepreneur's 'tenure', measured by the number of years since the entrepreneur launched her main business activity. We estimate a positive and significant coefficient for the interaction of

treatment and tenure for three measures of revenues, as well as for the measure of the value of household assets. This is true for both versions of the training, although the coefficients are substantially larger for the enhanced training. The estimated impact on household assets is consistent with the findings from qualitative data collection, which indicate that the acquisition of household furniture was considered as a measure of success among the entrepreneurs.⁸

The estimates presented in Table 5, which assume a linear relationship between training and tenure, imply that entrepreneurs with at least nine years of experience have a positive impact from the enhanced training. The longer the tenure, the higher the impact. Twenty-five percent of the entrepreneurs in our sample have at least nine years of experience – see Figure 1, which plots the distribution of tenure in the sample at baseline. Very experienced entrepreneurs who received the basic training are also better able than entrepreneurs with shorter tenure to benefit from it, but in the case of basic training the impact is positive only for entrepreneurs with an extremely long tenure (more than 14 years) – a very small minority.

Figure 1: Distribution of tenure at baseline (years in main business)

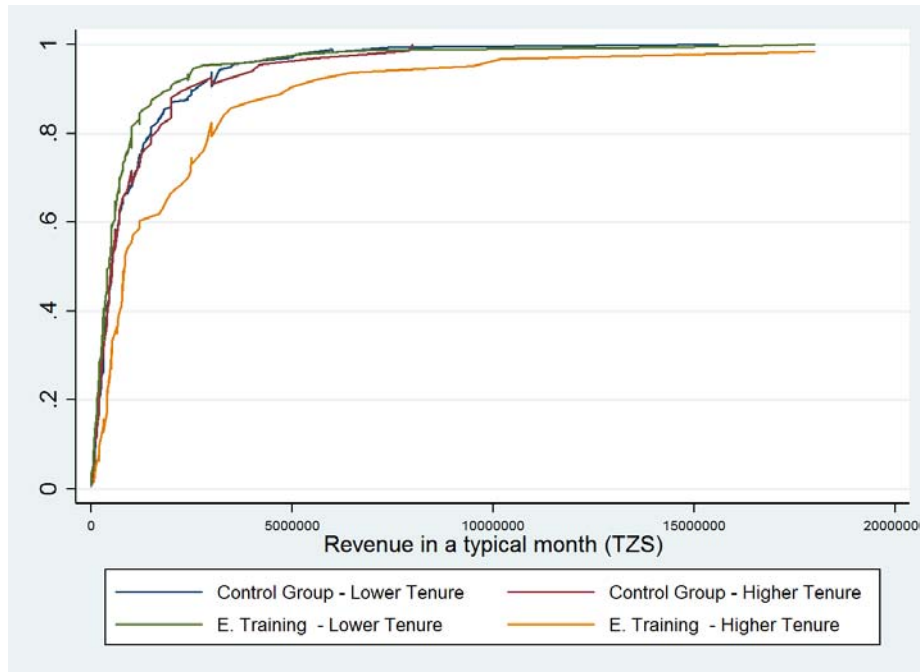
⁸ Focus group discussions carried out with husbands of female entrepreneurs enrolled in the program during June-July 2012 strongly indicate that when women earn income they do contribute to acquire assets not only for their business, but in particular for the household (especially if she has a good relationship with the husband and the other family members). Conversely, the inability of bringing income to the household was seen as a sign of failure. One man commented “There are no people who like to own assets like women. For example, I never bought household utensils...[but] my wife has bought many things including mattresses and beds. Surely these [women entrepreneurs] are excellent in buying household assets including utensils”. Another one stated “We started at low level [of income]. I insisted my wife joined various [training] groups including MKUBWA. Today she is an entrepreneurship trainer. She makes soaps, candles. She attends large exhibitions. We have built a beautiful house, sent children to good schools. Some women believe that their money is theirs (...) you can ask a woman to give you money and she may tell you that she does not have any, but you know that she earns more than you, you should use smooth language to convince her. For me, we have managed to send children to school up to high learning institution...”. Another one said “My wife sells batiki and most of the time we do discuss about her income. When I have time, I do help where it is necessary. One day I got home and found a new set of couches and when I asked she said it was a surprise she made for the household. I thanked her, although the money could have been used for other things than buying a set of couches...”.



In Table 6, we interact treatment with tenure quartile to allow for a more flexible model of the relationship between tenure and treatment effect. With this specification, we again find that both versions of the treatment appear to have a positive and statistically significant impact on typical monthly revenues and revenues in the previous year for entrepreneurs in the top quartile of tenure. Two other factors are important to note about Table 6. First, the bottom quartile for basic training experiences a significant decrease in revenues as a result of the program in two of the three measures. Second, an F-test of the equality of the fourth quartile effects indicates that the effect of the enhanced training is significantly higher than the basic training at the 10 percent level of significance for revenue in a typical month only.

In order to examine the robustness of this finding, figure 2 plots the cumulative distribution functions of typical monthly revenues for four subgroups of entrepreneurs: (i) entrepreneurs in the control group below the 75th percentile for tenure; (ii) entrepreneurs in the control group above the 75th percentile for tenure; (iii) entrepreneurs in the enhanced training group below the 75th percentile for tenure; (iv) entrepreneurs in the enhanced training group above the 75th percentile for tenure. The curve of the cumulative distribution function for this last group does not cross the curve plotted for any of the three other groups, which demonstrates that the intervention fully shifted revenues to the right for all of the higher tenure entrepreneurs.

Figure 2: Cumulative distribution functions - Typical monthly revenues

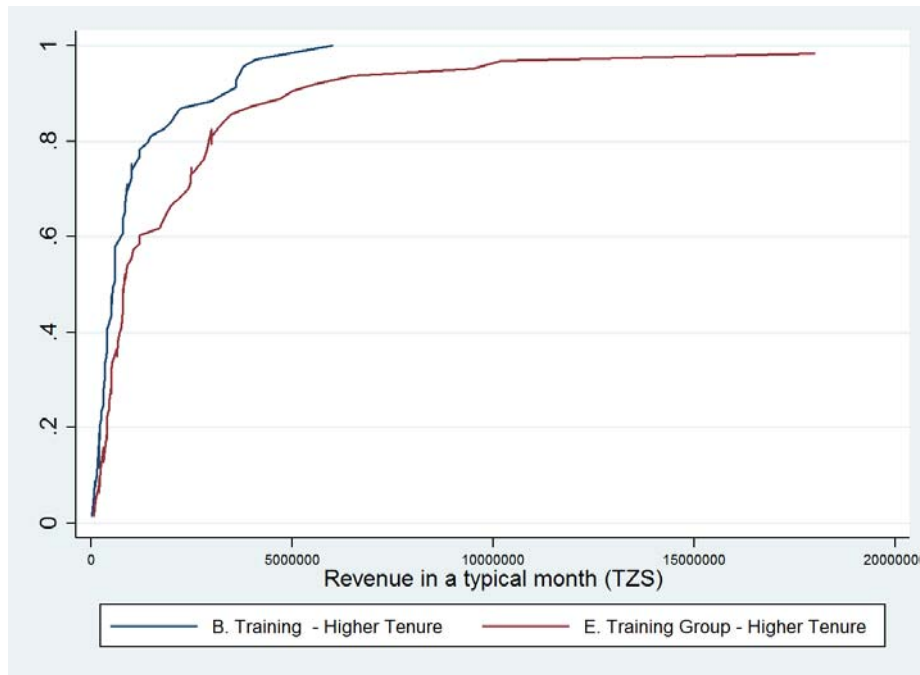


While the estimates for the interaction of treatment and the fourth tenure of quartile are significant for the two versions of the treatment, it is still useful to test further whether the impacts of the basic training and the enhanced training are significantly different. Figure 3 presents the cumulative distribution function of typical monthly revenues for two subgroups of entrepreneurs: (i) entrepreneurs assigned to the basic training who are above the 75th percentile for tenure; and (ii) entrepreneurs assigned to the enhanced training who are above the 75th percentile for tenure. The cumulative distribution function for entrepreneurs with high tenure in the enhanced training dominates the cumulative distribution function for entrepreneurs in the basic training, suggesting that for these entrepreneurs the enhanced training is more effective.

In order to confirm that these heterogeneous effects are driven by the entrepreneur's level of experience rather than by other personal characteristics that may be correlated with and/or result from tenure, we test for heterogeneity in other dimensions measured prior to training, including human capital (education), accumulation of household and business assets, networks, whether the entrepreneur is the head of her household or has children under five. We report the estimated coefficients in table 7, using the logarithm of typical monthly revenues as the outcome of interest. The insignificant coefficients suggest an absence of heterogeneity of effects on these dimensions. This allows us to rule out that human capital, assets, networks, or the entrepreneur's role in her household drive the observed heterogeneous impact of training by the entrepreneurs' level of experience.

Figure 3: Cumulative distribution functions - Typical monthly revenues

entrepreneurs with high tenure



6. Discussion and conclusion

Our analysis confirms that training may increase knowledge (as reflected in the adoption of business practices) but it does not necessarily translate into improved business outcomes on average. Neither a “traditional” entrepreneurial and managerial training nor a more flexible and innovative training package delivered to women entrepreneurs resulted in better business outcomes after about two years – although the enhanced version of the training succeeded in improving the adoption of “good” business practices.

However, our study also found that one specific group of entrepreneurs was actually able to take advantage of the enhanced training package. This group is represented by seasoned entrepreneurs – those with at least 9 years of experience in their main business activity when the program started. For these more experienced entrepreneurs training that combined traditional classes with individual-specific sessions and coaching paid off, and increased their revenues after two years, by an amount that was larger the more experienced they were at the start of the training (about 8-9 percent for each additional year of experience, when considering revenues in a typical month). This result – that experience is needed to complement training – supports the intuition that training is not a simple set of notions that are instantaneously effective but requires investments over a sustained duration of time or, alternatively, wisdom to make the most of it.

Before discussing policy implications, it is useful to discuss two points on the external validity of these findings. First, at baseline 19 percent of respondents indicated that they had previously

participated in a business training program. While we know nothing about the content of this previous training, it may make our average effect of zero less surprising. However, it makes the heterogeneity results – both the positive and the negative impacts, much more salient. It also implies that our results are best applied to contexts in which there has been a history of business training.

The second point on external validity is that our follow-up survey was conducted two years after the start of the intervention. While this interval is not shorter than in many other similar studies, it may not be a sufficiently long period for all the potential benefits of training to materialize (a point noted in McKenzie and Woodruff (2013)). As the implementer extended the treatment to the control group shortly after the follow-up survey, we cannot collect additional data on the impact of the treatment. This unfortunately prevents us from estimating the long-term impact of the intervention.

Taken together, our results indicate that, first, training needs to be targeted to the ‘right’ entrepreneurs. As other studies have confirmed, not all people are able to become successful entrepreneurs. To be part of the MKUBWA programs entrepreneurs needed to be committed to their business which was defined as having been in business full-time for at least a year. The estimates here indicate that this may have been the relevant targeting variable, but the threshold was set too low. Second, training alone does not guarantee results, especially in the short run, and needs to build on other skills acquired through experience. Third, training may be effective to change business practices, but this per se does not generate higher profits – either because longer investments are necessary or because other factors are important to produce positive impacts on business outcomes. More research is needed to understand this relationship, between improved practices and business outcomes.

Finally, the way training is provided and its ability to respond to specific needs of the entrepreneurs is also important. In our case, the “enhanced” package – more flexible and tailored to the needs of individual entrepreneurs – produced better results. This deserves special consideration especially when the targeted group is made of women, who have specific constraints that need to be addressed to create the conditions for the training to be effective.

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Annex 1 –Tables

Table 1 – Distribution of training participants by sector

Sector	Baseline	
	Freq.	Percent
<i>Animal Husbandry</i>	97	13.8
<i>Handicraft/Manufacturing</i>	73	10.4
<i>Farming</i>	20	2.8
<i>Processing</i>	252	35.9
<i>Services</i>	25	3.6
<i>Textile</i>	48	6.8
<i>Trading & food retail</i>	114	16.2
<i>Other</i>	73	10.3
<i>Total</i>	702	100

Table 2: Comparison across groups at baseline

	<i>All</i>	<i>Mean Control</i>	<i>Mean Basic training</i>	<i>Mean Enhanced training</i>	<i>Diff (Basic - Control)</i>	<i>Diff (Enhanced - Control)</i>	<i>N</i>
Personal characteristics							
Age	43.10 (0.35)	43.21 (0.59)	42.76 (0.58)	43.36 (0.65)	-0.45 (0.83)	0.15 (0.88)	699
Educ: O level complete (share)	0.40 (0.02)	0.43 (0.03)	0.41 (0.03)	0.36 (0.03)	-0.02 (0.04)	-0.07 (0.04)	817
Percentage married (share)	0.58 (0.02)	0.57 (0.03)	0.59 (0.03)	0.58 (0.03)	0.02 (0.04)	0.01 (0.04)	817
Head of household (share)	0.36 (0.02)	0.39 (0.03)	0.34 (0.03)	0.34 (0.03)	-0.05 (0.04)	-0.05 (0.04)	817
Has at least 1 child under 5 (share)	0.13 (0.01)	0.13 (0.02)	0.13 (0.02)	0.11 (0.02)	0.00 (0.03)	-0.02 (0.03)	817
Access to clean water (share)	0.82 (0.01)	0.83 (0.02)	0.82 (0.02)	0.80 (0.02)	-0.01 (0.03)	-0.03 (0.03)	817
Access to electricity (share)	0.78 (0.01)	0.81 (0.02)	0.77 (0.03)	0.75 (0.03)	-0.04 (0.03)	-0.07 (0.04)	817
Total value of hh assets	10,500,000 (3906244)	18,000,000 (10900000)	7,202,417 (1465729)	5,611,235 (714551)	-10800000 (11000000)	-12400000 (10900000)	817
Business outcomes, characteristics and practices							
Revenues in a typical month	659,548 (36973)	701,430 (63651)	623,898 (69867)	649,498 (57374)	-77532 (94513)	-51932 (85693)	795
Revenues in previous month	863,418 (96011)	885,121 (180530)	987,667 (203260)	704,895 (70444)	102546 (271853)	-180226 (193805)	799
Profit in previous month	306,850 (34032)	302,657 (40890)	376,903 (89554)	237,932 (27234)	74246 (98443)	-64725 (49131)	798
Monthly earnings	620,913 (150593)	487,813 (56459)	858,242 (446080)	520,358 (64280)	370430 (449613)	32546 (85552)	811
Number of additional workers	1.31 (0.08)	1.41 (0.13)	1.26 (0.16)	1.26 (0.12)	-0.14 (0.20)	-0.15 (0.17)	817
Has a budget (share)	0.51 (0.02)	0.54 (0.03)	0.49 (0.03)	0.48 (0.03)	-0.05 (0.04)	-0.06 (0.04)	797
Has an accounting system (share)	0.67 (0.02)	0.69 (0.03)	0.62 (0.03)	0.69 (0.03)	-0.07 (0.04)	0.00 (0.04)	815
Has a business plan (share)	0.16 (0.01)	0.15 (0.02)	0.15 (0.02)	0.20 (0.03)	0.01 (0.03)	0.05 (0.03)	795
Pays herself a wage (share)	0.33 (0.02)	0.32 (0.03)	0.33 (0.03)	0.34 (0.03)	0.01 (0.04)	0.02 (0.04)	799

Notes: Includes all baseline observations, robust standard errors in parentheses

Table 3: Impact of the intervention on the adoption of business practices

Outcomes	Basic Training		Enhanced Training		N
	<i>OLS</i>	<i>Probit marginal effect</i>	<i>OLS</i>	<i>Probit marginal effect</i>	
Has a budget	0.0215 (0.0450)	0.0216 (0.0443)	0.0980** (0.0445)	0.101** (0.0440)	680
Has a business plan	-0.0184 (0.0433)	-0.0193 (0.0456)	0.0993** (0.0458)	0.103** (0.0456)	676
Pays herself a wage	0.00355 (0.0408)	0.00296 (0.0447)	0.149*** (0.0452)	0.155*** (0.0474)	682
Bulk purchases with others	-0.0332 (0.0391)	-0.0327 (0.0406)	0.0756* (0.0428)	0.0771* (0.0433)	700
Differentiates via neater premises	-0.0107 (0.0407)	-0.0120 (0.0440)	0.0955** (0.0444)	0.0998** (0.0467)	700
Differentiates via packaging	0.00751 (0.0302)	0.0133 (0.0331)	0.0883** (0.0346)	0.0907** (0.0368)	700
Registered with Brela	0.0165 (0.0338)	0.0275 (0.0461)	0.140*** (0.0386)	0.178*** (0.0502)	692
Has a TIN number	0.00981 (0.0314)	0.0190 (0.0478)	0.0826** (0.0367)	0.125** (0.0532)	694
Has a license	-0.0210 (0.0328)	-0.0259 (0.0484)	0.0843** (0.0365)	0.117** (0.0519)	693

Notes: All effects measured using ANCOVA specifications. All regressions also control for stratification dummies (geographical district, sector of activity, whether participants received a business gift).

Robust standard errors in parentheses. *, **, and *** indicate significance at the 10, 5, and 1 % levels, respectively

Table 4: Average impact of the intervention on business outcomes, earnings and household assets

Type of training	Revenue from main activity			Profit from main activity		Monthly earnings (ln)	Value of household assets (ln)
	Typical month (ln)	Previous month (ln)	Previous year (ln)	Previous month (ln)	Previous year (ln)		
Basic	-0.339* (0.177)	-0.186 (0.437)	0.0106 (0.289)	-0.332 (0.409)	0.0106 (0.289)	0.0880 (0.164)	0.0196 (0.0745)
Enhanced	-0.0966 (0.171)	-0.161 (0.454)	-0.0371 (0.317)	-0.307 (0.430)	-0.0371 (0.317)	0.0703 (0.194)	-0.0302 (0.118)
N	678	680	645	679	645	692	700
R squared	0.063	0.105	0.022	0.112	0.022	0.047	0.190

Notes: All effects measured using ANCOVA specifications. Monthly earnings are earnings from all sources (including secondary activities).

All regressions also control for stratification dummies (geographical district, sector of activity, whether participants received a business gift).

Robust standard errors in parentheses. *, **, and *** indicate significance at the 10, 5, and 1 % levels, respectively

Table 5: Heterogeneous impact of the intervention – interaction of treatment and tenure

Type of training	Revenue from main activity			Profit from main activity		Monthly earnings (ln)	Value of household assets (ln)
	Typical month (ln)	Previous month (ln)	Previous year (ln)	Previous month (ln)	Previous year (ln)		
Basic (B)	-0.700** (0.275)	-0.160 (0.641)	-0.675* (0.403)	-0.210 (0.592)	-0.483 (0.396)	-0.0405 (0.268)	-0.107 (0.112)
Enhanced (E)	-0.710** (0.286)	-1.141* (0.680)	-0.925** (0.437)	-0.966 (0.647)	-0.693 (0.450)	-0.135 (0.356)	-0.360* (0.197)
B*tenure	0.0520* (0.0285)	-0.00666 (0.0730)	0.103** (0.0494)	-0.0192 (0.0676)	0.0682 (0.0437)	0.0189 (0.0323)	0.0190 (0.0133)
E*tenure	0.0880*** (0.0313)	0.137** (0.0649)	0.128** (0.0508)	0.0926 (0.0655)	0.0781 (0.0490)	0.0298 (0.0483)	0.0476*** (0.0164)
Constant	11.16*** (0.784)	5.081*** (1.114)	14.19*** (0.589)	4.670*** (1.008)	13.02*** (0.586)	10.72*** (0.807)	10.15*** (1.194)
N	675	677	642	676	653	689	697
R squared	0.085	0.122	0.036	0.123	0.027	0.049	0.208

Notes: All effects measured using ANCOVA specifications. Monthly earnings are earnings from all sources (including secondary activities). Tenure is measured as 1 additional year of experience in the current main business activity

All regressions also control for stratification dummies (geographical district, sector of activity, whether participants received a business gift).

Robust standard errors in parentheses. *, **, and *** indicate significance at the 10, 5, and 1 % levels, respectively

Table 6: Heterogeneous impact of the intervention – interaction of treatment and tenure

Type of training	Revenues from main activity			Value of household assets (ln)
	Typical month (ln)	Previous month (ln)	Previous year (ln)	
Basic (B)	-0.548** (0.276)	0.451 (0.803)	-0.743** (0.371)	-0.00391 (0.123)
Enhanced (E)	-0.340 (0.312)	-0.380 (0.940)	-0.589 (0.365)	-0.242 (0.256)
Basic (B)*tenure 2nd quartile	-0.258 (0.578)	-2.193* (1.192)	-0.148 (0.753)	-0.212 (0.201)
Basic (B)*tenure 3rd quartile	0.312 (0.334)	0.730 (1.189)	1.964*** (0.754)	0.290 (0.186)
Basic (B)*tenure 4th quartile	0.924** (0.442)	-0.833 (1.317)	1.593** (0.762)	0.135 (0.226)
Enhanced (E)*tenure 2nd quartile	-0.470 (0.577)	-0.983 (1.272)	-0.764 (0.836)	-0.0506 (0.398)
Enhanced (E)*tenure 3rd quartile	0.362 (0.375)	0.983 (1.346)	1.414 (0.874)	0.361 (0.283)
Enhanced (E)*tenure 4th quartile	1.231** (0.495)	1.278 (1.295)	1.807** (0.766)	0.707** (0.326)
Constant	11.08*** (0.750)	4.671*** (1.207)	14.25*** (0.543)	10.06*** (1.208)
Observations	678	680	645	700
R-squared	0.106	0.126	0.060	0.209
Impact for B - tenure 4th quartile	38%	-38%	85%	13%
Impact for E - tenure 4th quartile	89%	90%	122%	47%
F test - 4th quartile - H0: <i>lincom</i> for B = <i>lincom</i> for E	0.0574	0.211	0.218	0.142

Notes: The omitted variable is the first quartile of tenure All effects measured using ANCOVA specifications.

All regressions also control for stratification dummies (geographical district, sector of activity, whether participants received a business gift).

Robust standard errors in parentheses. *, **, and *** indicate significance at the 10, 5, and 1 % levels, respectively

Table 7: Further heterogeneity analysis – Impact of treatment on typical monthly revenue (ln), by various characteristics

Type of training	Education: completed O level (var 1)/ completed A level (var 2)	Index of household assets	Index of business assets	Entrepreneur is member of a cooperative	Entrepreneur is member of a credit/savings group	Network intensity index	Entrepreneur is the head of her household	Entrepreneur has at least one child younger than 5
Basic training (B)	-0.00611 (0.188)	-0.461 (0.461)	-0.527 (0.322)	-0.352* (0.186)	-0.402 (0.244)	-0.238 (0.325)	-0.347 (0.212)	-0.370* (0.202)
Enhanced training (E)	-0.0758 (0.236)	0.317 (0.389)	-0.0216 (0.274)	-0.0609 (0.182)	-0.261 (0.278)	0.182 (0.348)	-0.208 (0.236)	0.0263 (0.168)
B*variable 1	-0.291 (0.315)	0.393 (1.036)	0.360 (0.456)	-0.0795 (0.542)	0.170 (0.364)	-0.408 (1.597)	0.0344 (0.374)	0.221 (0.343)
E*variable 1	-0.0745 (0.395)	-1.109 (0.844)	-0.149 (0.514)	-0.717 (0.514)	0.304 (0.380)	-1.566 (1.612)	0.342 (0.325)	-1.218 (0.880)
B*variable 2	-2.065* (1.100)							
E*variable 2	0.611 (0.563)							
Observations	678	678	678	678	678	678	678	678
R-squared	0.090	0.075	0.066	0.067	0.070	0.069	0.068	0.077

Notes: All effects measured using ANCOVA specifications.

All regressions also control for stratification dummies (geographical district, sector of activity, whether participants received a business gift).

Robust standard errors in parentheses. *, **, and *** indicate significance at the 10, 5, and 1 % levels, respectively

Table A.1a – Business outcomes at baseline (mean values, in TZS)

	Control	Basic training	Enhanced training	All
Typical monthly revenues	667,575	652,700	661,407	660,669
Revenues in previous month	690,983	952,442	737,512	793,977
Profit in in previous month	259,150	371,994	253,658	295,573
Profit last year	2,074,347	8,529,796	4,849,750	509,665
Monthly earnings	467,688	916,654	509,534	633,197

Note: sample includes only entrepreneurs who could be interviewed at baseline and endline

Table A.1b – Business outcomes at baseline (mean values, in US\$)

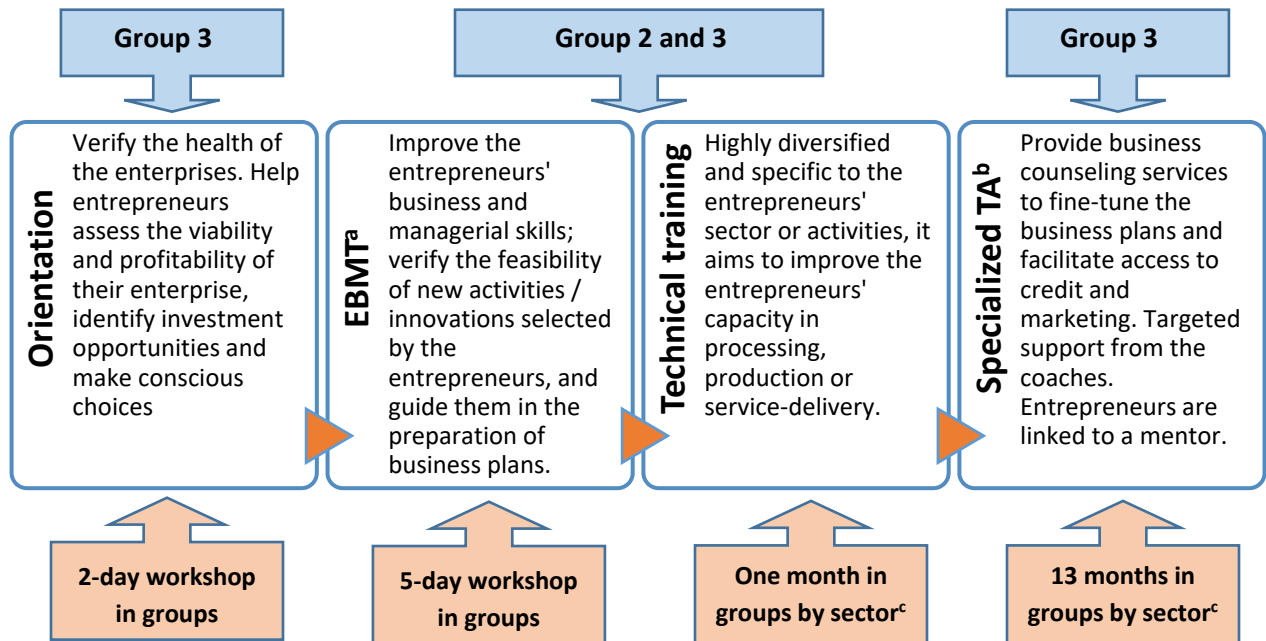
	Control	Basic training	Enhanced training	All
Typical monthly revenues	445	435	441	440
Revenues in previous month	461	635	492	529
Profit in in previous month	173	248	169	197
Profit last year	1,383	5,687	3,233	340
Monthly earnings	312	611	340	422

Note: sample includes only entrepreneurs who could be interviewed at baseline and endline. The exchange rate was USD 1 = TZS 1500

Table A.2 – Differential attrition by personal and firm characteristics

	Did not drop from survey	Dropped from survey (attrition)	Difference	N
<i>Business outcomes</i>				
Ln of typical monthly revenues	12.52 (0.07)	12.51 (0.16)	-0.01 (0.18)	795
Ln of revenues in previous month	11.81 (0.14)	11.36 (0.40)	-0.45 (0.43)	799
Ln of revenues last year	14.08 (0.13)	13.60 (0.39)	-0.48 (0.41)	779
Ln of profit in in previous month	10.74 (0.14)	10.31 (0.39)	-0.43 (0.42)	798
Ln of profit last year	13.21 (0.13)	12.40 (0.40)	-0.82 (0.42)	791
Ln of monthly earnings	12.22 (0.06)	12.38 (0.11)	0.16 (0.13)	811
<i>Other characteristics</i>				
Tenure at baseline (years)	6.86 (0.24)	5.95 (0.57)	-0.92 (0.62)	814
Completed O Level (%)	41% (0.02)	37% (0.05)	-0.03 (0.05)	817
Married (%)	58 (0.02)	56 (0.05)	-0.03 (0.05)	817
Head of household (%)	35 (0.02)	43 (0.05)	0.08 (0.05)	817
With at least 1 child under 5 (%)	12 (0.01)	15 (0.03)	0.02 (0.04)	817
Access to clean water (%)	81 (0.01)	89 (0.03)	0.078* (0.03)	817
Access to electricity (%)	78 (0.02)	78 (0.04)	0.00 (0.04)	817
Ln of total value of household assets	14.66 (0.06)	14.86 (0.13)	0.20 (0.14)	817

Annex 2 – Implementation plan



Note: Group 2 includes entrepreneurs that received the 'basic' intervention; Group 3 includes entrepreneurs that received the 'enhanced' or 'advanced' intervention (Group 1 is the control group).

^a Entrepreneurship and business management training; ^b Technical Assistance; ^c these modules were distributed over one month (Technical training) and 13 months (Specialized TA), but the actual duration for each individual entrepreneur was 3 to 5 days (depending on the sector of activity) and 2 to 4 one-day visits (depending on the assessment during the first visit) respectively.