

[PRELIMINARY RESULTS, PLEASE DO NOT CITE]

TRAINING MENTORS? EXPERIMENTAL EVIDENCE FROM FEMALE OWNED  
MICROENTERPRISES IN ETHIOPIA

*Gautam Bastian, M. Mehrab Bin Bakhtiar, Eliana Carranza and Markus Goldstein<sup>1</sup>*

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**Abstract**

A randomized evaluation of a business training and mentoring intervention targeted at female owned microenterprises in Ethiopia shows that formal business training produces an immediate impact on the adoption of beneficial business practices (that were highlighted in the training); however, no impact on business profit is observed in the short term. Two years after the training, we observe delayed impacts on reported and constructed business profits. Shortly after the training, the trained cohort is randomly assigned to provide mentoring to less-experienced women who own smaller businesses. These mentees were nominated by mentors at baseline from their own social networks. The impact of mentoring on mentees is more muted. There are early impacts on the adoption of beneficial business practices, and some measures of profits, neither of which persist in the longer term.

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<sup>1</sup> M Mehrab Bin Bakhtiar: University of Maryland – College Park (mehrab@umd.edu);  
Gautam Bastian (gbastian@worldbank.org), Eliana Carranza (ecarranza@worldbank.org), Markus Goldstein  
(mgoldstein@worldbank.org): Africa Gender Innovation Lab, The World Bank Group

## 1. Introduction

Tackling youth unemployment has been a major challenge for many developing nations, particularly those in Africa (World Bank, 2006). Youth unemployment rates can be two to three times higher than the unemployment rate among older adults (Fares, Montenegro, and Orazem, 2006). Young women, particularly those living in urban areas appear to be struggling the most to earn a living. In Ethiopia, for example, 58 percent of urban women aged 15 to 29 in the labor force are unemployed compared to 66 percent of young men in urban areas (Broussard & Tekleselassie, 2012). Such high levels of unemployment, particularly among young women have led many policymakers and NGOs to advocate several large programs that promote entrepreneurial activities. These include vocational and entrepreneurial training in many developing countries. However, empirical evidence regarding the impact of business training programs on earnings and performance has been modest (McKenzie and Woodruff, 2013).

Ownership and employment in microenterprises account for a large fraction of employment in the developing world. Despite the size and potential of this sector, microenterprises face many challenges that include poor access to capital and products, high closure rates, etc. It is therefore not surprising that in many countries, microenterprises underperform other forms of businesses in terms of productivity and profitability (Brooks, Donovan & Johnson, 2016). One possible explanation for the apparent dismal outcomes of microenterprises is that microenterprise owners lack managerial capital, which is the skill-set required to run a business (Bloom and Van Reenen, 2007; Bruhn et al., 2010; McKenzie and Woodruff, 2016). Policy makers and academics have attempted to address this potential constraint that small businesses face by scaling up business training programs all over the developing world, spending over a billion dollars per year pursuing various forms of training (Blattman and Ralston, 2015). Despite this effort, the measured impact of this kind of training on business profit or operational scale appears to be modest (McKenzie and Woodruff, 2013).

McKenzie and Woodruff (2016) argue that the relationship between ‘better’ business practices<sup>2</sup> and performance is causal and that the lack of effect for most business training programs is because they do not change business practices enough rather than because these practices do not matter. Moreover, a critical review of the literature by McKenzie and Woodruff (2013) suggests that many of the business training evaluations measure impacts only within a year of training. Evaluations done in such short term is potentially problematic because it may take longer than

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<sup>2</sup> The study uses 26 questions that measure business practices in the areas of marketing (e.g. Did the firm advertise? Did it attempt to attract customers with a special offer? Does it ask customers what other products they would like it to sell?), record keeping (e.g. Does the firm record every sale and purchase? Has it worked out the cost of each item it sells? Does it have a written budget?), financial planning (e.g. Does it have a sales target for the next year? Does it have a balance sheet and profit and loss statement?), and buying and stock control (e.g. Does it frequently run out of stock? Does it attempt to negotiate discounts with suppliers?). These are intended to be universal best practices, in the sense that most firms should benefit from using them. They are closely based on the goals of business training programs like the ILO’s Improve Your Business (IYB) program.

[PRELIMINARY RESULTS, PLEASE DO NOT CITE]

one year for business practices taught in the training programs to translate into improved business outcomes.

To address this gap in the literature, we evaluate the impact of a well-designed business training curriculum on business practices and performance of small firms both in the short term (within a year) as well as in the longer term (approximately, 2 years). The program is carried out in a Randomized Control Trial (RCT) setting. We find that formal business training does not produce any significant impact on business performance in the short term but does improve the adoption of business practices taught to them in the training program. In the longer term, however, the training program appears to induce a strong positive effect on different dimensions of business performance, such as reported and constructed profits as well as in business diversification. This effect appears to be driven by a continued adoption of several of the ‘better’ business practices identified by McKenzie and Woodruff (2016).

Given the extent of micro-entrepreneurial activities in developing countries, it is, however, important to identify low-cost programs that can lead towards the adoption of these business practices that can potentially improve welfare for small businesses. This is because standard business training programs are very expensive - collectively, several billion dollars have been spent behind business training all over the world involving millions of trainees.<sup>3</sup> This problem can be potentially addressed by mentorship programs involving trained mentors: the idea is that after more experienced businesses are given formal training, they can be connected with smaller firms from their networks. This can be a promising low-cost approach to business training programs that can organically disseminate relevant information and advice to new and fledgling businesses.

To understand the potential impact of such a program, we connect the trainees of the formal business training program mentioned above to a random subset of small firm owners within their social and business networks that they had identified or nominated before they received the business training. We find that the treatment ‘mentees’ exhibit strong effects in the short term – both in the adoption of some business practices as well as profits. However, this effect does not persist in the longer term.

This study is similar to the impact evaluation of a parallel training and mentorship program done by Brooks, Donovan & Johnson (2016), where they directly compare the impact of one-to-one mentorship to a traditional business training program. They find that in the short term, one-to-one mentorship program results in higher business profits because of a transmission of local market information, such as potential low-cost suppliers. However, the effect seems to fade in

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<sup>3</sup> Blattman and Ralston (2015) report that class room training can cost over 100 USD per student. International Labor Organization’s Start and Improve Your Business program has claimed to have trained more than 4 million people in 100 countries since 1977.

the longer term. Our study, however, departs from Brooks, Donovan & Johnson (2016) in several important ways. Firstly, we attempt to evaluate whether firms, when given formal business training, seem to be adopting ‘better’ businesses practices in marketing, stock-keeping, record-keeping, and financial planning that have been identified by Mckenzie and Woodruff (2016) to improve business performance and whether such practices translate into better outcomes for the firms. We specifically consider whether effects of the formal training can be better observed if business outcomes are measured in the longer term. Secondly, if business performance is indeed limited by the adoption of these practices, a mere pairing with an experienced mentor (as done by Brooks, Donovan & Johnson, 2016) may not induce improved business performance in the medium and long term. In fact, this is what Brooks, Donovan and Johnson (2016) find – mentee firms exhibit large effects on profits in the first four or five months but this effect disappears afterwards. However, a sustained effect on mentee performance is possible through the provision of mentorship through trained mentors – if communication of ‘better’ business practices happens effectively through the mentorship. We, thus, measure how well mentors trained with formal business training disseminate ‘better’ businesses practices among mentee firms and whether such mentorship leads to short and longer term impacts on business performance.

## **2. Program Description**

The Women in Agribusiness Leaders Network (WALN) uses a randomized controlled trial (RCT) design to differentially assess the impact of the first stage traditional training program and a second stage mentorship which is carried out by the trainees in the first stage training. Half the mentors and mentees eligible to participate in WALN were randomly assigned to receive the business training and mentoring interventions, respectively. The other halves, called the control groups, did not receive the interventions. Comparing the treated groups to the control groups allows us to calculate the impact of the program on the outcomes measured through data collection.

ACDI/VOCA, the program implementer, created a pool of eligible applicants based on a pre-determined set of selection criteria that were applied to information that applicants provided in their application forms. Potential mentees were also nominated at the same time that applicants (later to become mentors) were applying to the program.

The pool of eligible applicants became the sample for the baseline survey. Treatment was randomly assigned to eligible applicants who also responded to the baseline survey. The program operated in AGP target woredas of five regions of Ethiopia: Tigray, Amhara, Oromia, Addis Ababa and SNNPR. The impact evaluation covers the business training and mentoring activities across all regions. Mentor randomization was stratified by region and firm-size tercile.<sup>4</sup> Mentees

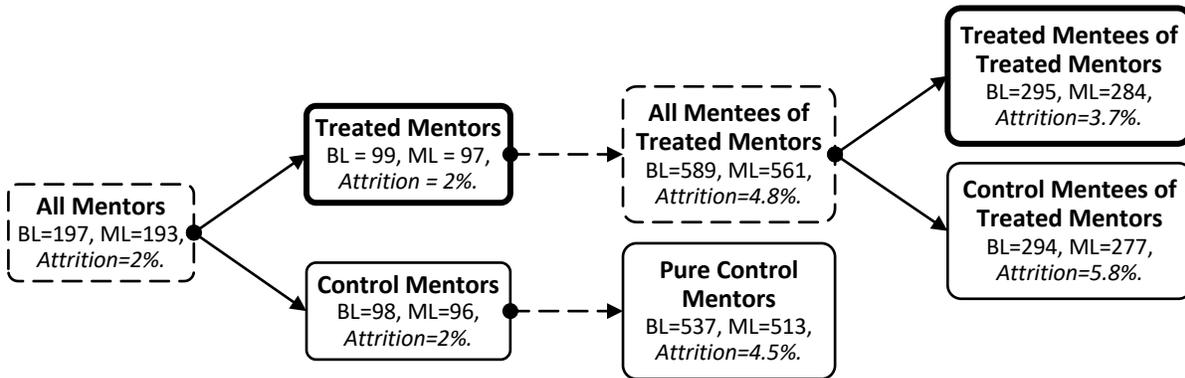
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<sup>4</sup> Mentors’ registered WALN businesses were ranked from lowest to highest by their number of employees. The distribution was partitioned into three equal parts each containing one-third of mentors. Each third is called a tercile.

[PRELIMINARY RESULTS, PLEASE DO NOT CITE]

of treated mentors were randomly assigned to receive mentoring, stratified by each mentor’s pool of eligible mentees. Mentees nominated by control mentors are also included in the impact evaluation but were not assigned a mentoring treatment status.<sup>5</sup>

Figure 1: WALN Experiment Arms, Survey Sample Size, and Survey Attrition



Note: BL= Total Baseline Survey Respondents, ML=Total Midline Survey Respondents, Attrition= $((BL-ML)/BL)*100$

Figure 1 shows the WALN impact evaluation design, the number of women surveyed in each round of data collection, and the attrition in the sample from the baseline to the midline. The dashed boxes show the total mentors and mentees of treated mentors groups; the heavy-bordered boxes show the treatment groups, and the remaining boxes show the control groups. Besides midline (short term/within 6 months of the business training program) results we also report results in the longer run from a data we term the first endline. The attrition levels for endline and midline are similar to what is observed between baseline and endline. We are carrying out a second/final endline data collection in the next few months. We hope to report results from that round in the final version of this paper within a few months.

### 3. Data

The WALN baseline survey was conducted from March to August 2014 before the business training was implemented from August to December 2014. Mentoring sessions were conducted between January and July 2015. Midline data collection started in August 2015, 6 months after the business training was concluded and 1 month after the mentoring sessions ended. Midline data collection and data cleaning activities were concluded by December 2015. The first round of

<sup>5</sup> All impact evaluation related data collection covers treated and control mentors and the eligible mentees nominated by them at the start of the program. This includes the treated and control mentees of treated mentors and all mentees of the control mentors.

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endline data collection was carried out in summer, 2017. The final (and a separate round of) endline data will be collected at the end of 2017.

The current version of this paper uses baseline and midline survey data for 1,267 women. A smaller dataset of interviews conducted with 547 spouses of married women was also collected and will be utilized for future analysis. Table 1 presents the total number of survey respondents, married respondents, and spouses interviewed in each survey round by treatment status. Although the table shows attrition rates between baseline and midline rounds; the attrition in the first endline round is very similar to the midline round.

**Table 1: Distribution of Respondents**

Treatment Status	All Respondents		Married Respondents		Spouses Interviewed	
	Baseline	Midline	Baseline	Midline	Baseline	Midline
Treated <b>Mentors</b>	99	97	60	57	37	37
Control <b>Mentors</b>	97	96	53	55	45	40
Treated <b>Mentees</b> of Treated Mentors	295	284	156	156	97	120
Control <b>Mentees</b> of Treated Mentors	294	277	145	144	102	114
Pure Control <b>Mentees</b>	537	513	302	302	197	231
<i>Totals</i>	1,322	1,267	716	714	478	542

*Note: Survey respondents are WALN women.*

The results in this write-up are preliminary and are mainly based on midline data and first round of endline data. The second and final endline data collection will commence in late 2017 and upon its completion, will be used in the final version of this paper. Figure 1 shows that 2% of the baseline mentor sample and 4.8% of baseline sample of mentees of treatment mentors were not surveyed at the midline survey. Additionally, there was slightly greater attrition amongst Control Mentees of Treated Mentors (5.8%) than Treated Mentees (3.7%). Comparing the baseline characteristics of the respondents who participated in our midline survey allows us to confirm that this attrition is not systematic (e.g. if respondents not surveyed at midline are more educated than those that were, then midline estimates WALN business training program effects may be smaller). If there was systematic attrition, then we would have to take steps to account for this in the analysis that we present in the following section.

Accordingly, the balance tests were conducted for a set of individual, household, and business characteristics. The tests were conducted using Ordinary Least Squares (OLS) for continuous variables and the Linear Probability Model (LPM) for binary variables. A regression of the variables of interest was run on two different treatment dummy variables representing either: (1) Treatment Mentor (TM) and Control Mentors (CM) or (2) Treated Mentees of Treated Mentors (TMTM) and Control Mentees of Treated Mentors (CMTM).

As can be observed in Table 7 and 8 of Appendix 2, only one variable is unbalanced at baseline, for each of the mentor and mentee sample. However, these are in the raw data. Correcting for

outliers through a winsorization method corrects this imbalance (the winsorization process is explained in detail below).

#### 4. Analysis

This section compares key outcome variables related to business performance and practices by both the business training as well as the mentorship-receiving/‘mentee’ sample. Additionally, baseline balance tables are also presented for both these samples.

##### A. Identification Strategy

While the impact of the program on all the different treatment arms has not been exhaustively explored, the following identification strategy was adopted to analyze the short-term impact of the WALN program on mentors and mentees. We specifically consider:

- 1) **Business Training:** Estimate the combined impact of mentors’ participation in the business training by examining the difference in average outcomes between Treatment Mentors and Control Mentors.
- 2) **Mentoring:** Estimate the impact of participation in the mentoring program and the broader WALN networking activities by observing the difference in outcomes between Treatment Mentees and Control Mentees of Treatment Mentors.

Since both the business training and the mentorship program was carried out under a Randomized Control Trial (RCT) framework, any observed differences after the intervention was carried out can be attributed as treatment effects. To improve power, some econometric specifications include the baseline value of the outcome variable (along the lines of McKenzie, 2012).

##### B. Measures

The following measures are utilized to evaluate WALN’s preliminary impacts on knowledge and business outcomes of mentors and mentees. These indicators are selected after considering the content of the program curriculum and the potential link they are likely to have with the different types of interventions in the short run. Some of these outcomes are more likely to be affected in the short run because the midline data were collected just 6 months after the mentors completed business training and almost immediately after the mentoring sessions concluded. We report separately in the short term (within 6 months of the training) as well as in the longer term (approximately, 2 years afterwards) the impact of the business training and mentorship programs.

**Table 2: Outcome Indicators**

<b>Measure</b>	<b>Description</b>
<i>Profit and Sales</i>	
Profit <sup>6</sup>	Self-reported gross profit for the WALN business (as well as all the businesses) over the 30 days before the interview (Beside the raw variables we also report winsorized forms of profit, revenue and cost variables, in which top (and top and bottom) observations in the distribution are replaced with a lower value in the distribution. For example, top 2.5% winsorization means that the top 2.5% of the distribution of a variable We have two models for the continuous variables. The first model does not account for sector
Revenue	Self-reported revenue for the WALN business (as well as all the businesses) over the 30 days before the interview.
Costs	The sum of self-reported business costs incurred for the WALN business (as well as all the businesses) over the 30 days before the interview.
<i>Business Practices</i>	
Business planning	If the WALN business reported having a business plan this variable was set to one, otherwise zero.
Annual budget	If the WALN business reported having an annual budget this variable was set to one, otherwise zero.
Financial record keeping	If the WALN business reported keeping financial records this variable was set to one, otherwise zero.
<i>Additional Business Practices</i>	We also asked additional questions on the negotiation skills as well as knowledge of the industry (which products sell well; mindfulness of price changes; comparing price and quality with suppliers and competitors). Moreover, we asked questions on marketing/advertising as well as stocking behavior of firms.

### **C. Analytical Approach**

To analyze the impact of the WALN program we separately compare the midline and endline means of the treatment and control groups for key outcome variables listed in the previous subsection. The Ordinary Least Squares (OLS) regression is used for continuous dependent variables (e.g., Last month's profit). The Linear Probability Model (LPM) and Logit Models are employed when the dependent variable is binary (e.g., Do you have a business plan?). This subsection discusses the analytical approach and the econometric analysis is presented in the following sections.

Outcome variables are regressed on the treatment dummy variable and a set of variables reflecting the sample stratification. The experiment was designed to stratify the sample of

<sup>6</sup> Weekly profit data was also collected in baseline. However, it is the thirty days interval that was found to provide less noisy data, and hence, proved more reliable. That is why the thirty days interval was chosen.

[PRELIMINARY RESULTS, PLEASE DO NOT CITE]

mentors into terciles of the number of employees in each region – this resulted in 15 strata in total (5 regions with 3 terciles each).<sup>7</sup> Estimations with and without WALN business<sup>8</sup> sector fixed effects<sup>9</sup> show similar results; so, results without sector fixed effects are shown.

While looking at the impact of the program on mentor outcomes (i.e., the effect of the business training program), we do not cluster standard errors, since an individual level randomization takes place at the level of the strata. We control for strata fixed effects.

$$Y_{ix} = \alpha_1 + \beta_1 \mathbf{BusinessTraining}_{ix} + \gamma_x + \varepsilon_{1ix}$$

In the equations above the subscript  $i$  represents the observation (which is at the individual/firm level), the subscript  $x$  is the strata firm/individual  $i$  is in.  $Y$  is the vector of outcome variables of interest; ***BusinessTraining*** is the treatment dummy variable and  $\beta_1$  is the coefficient of interest.  $\gamma_x$  captures the strata fixed effects. The error term  $\varepsilon_{1ix}$  is assumed to be normally distributed.

For continuous variables, the estimations are conducted on both the raw and winsorized forms of the data. Winsorization is a standard statistical technique to account for outliers in a sample. In the sample, some of the WALN participants represent very big firms or cooperatives. It is important that the results are not driven by such outliers. To carry out the winsorization for the top 2.5%, we replace the top 2.5% with the observation at the 97.5 percentile of the distribution. Similarly, we report results on outcome variables with winsorization on both tails.

We also include the baseline value of the outcome variable on the right-hand side for several of the outcome variables, such as profit, costs and revenue (and their winsorized forms). This can potentially improve statistical power, particularly, for variables that have low autocorrelations across rounds of data (Mckenzie, 2012). Furthermore, we carry out these specifications separately for midline and (first) endline data.

While analyzing outcomes with binary variables (say, 0 and 1), it is standard to run the Linear Probability model in most cases. The Linear Probability Model (LPM) is essentially the standard OLS model, but with a binary outcome variable. For example, to learn if WALN participants are more likely to adopt a specific financial behavior in their business (e.g. financial record keeping) we can run a regression using the LPM. The results of the regression gives us the change in the likelihood of adopting the specific financial behavior because of the training program.

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<sup>7</sup> This essentially means that treatment and control mentors (or mentees) from the same strata are compared – this is standard in the literature and provides more traction to the statistical analysis. Section 2.2, above, discusses the randomization strategy and provides additional details about the definition of the terciles used as strata.

<sup>8</sup> The WALN business is the firm or business used by the participants to apply to the program.

<sup>9</sup> Again, the idea of a sector fixed effects, is to make sure that treatment and control mentors/mentees within the same business sector are compared. The estimates do not change much without the sector fixed effects.

[PRELIMINARY RESULTS, PLEASE DO NOT CITE]

To check robustness, we also run a Logit Model (with Marginal Effects at Means) which produces similar results. The coefficient of this Logit model gives us the marginal effect of the program on the change in the probability of the binary outcome variable, holding all other variables at their means. The similarity in the size of the effect as well as the statistical significance in both models is indicative of the robustness of the results. Because the results are similar and because it is easier to interpret the coefficients in the LPM model, we only report the results from the LPM model.

Similarly, to look into the impact of the mentoring program, we carry out the following econometric specification:

$$Y_{ix} = \alpha_2 + \beta_2 \text{Mentoring}_{ix} + \text{Mentor}_x + \varepsilon_{2ix}$$

In the equations above the subscript  $i$  represents the observation (which is at the individual/firm level), the subscript  $x$  indicate the Mentor individual  $i$  is under.  $Y$  is the vector of outcome variables of interest; **Mentoring** is the treatment dummy variable and  $\beta_2$  is the coefficient of interest.  $\text{Mentor}_x$  captures the mentor fixed effects. The error term  $\varepsilon_{2ix}$  is assumed to be normally distributed. We employ a mentor fixed effects because a subset of firms, who were nominated by the trainees of the business training program before the training took place, was randomly chosen to be treatment mentees, while the remaining firms were chosen to be control mentees. While it is possible for spillovers to take place, since both treatment and control mentees are under the same mentor, we do not investigate this issue in this version of the paper. For the final version of the paper that will be presented we will investigate spillovers in detail.

#### **D. Discussion of results**

##### ***Business Training experiment***

A comparison of means between treatment and control individuals/firms in the business training program is conducted for a number of variables on business performance and skills. The results show that, in the short run (midline data) within 6 months of the training program, there is no statistically significant difference in means between the treatment and control groups in any of the direct business outcomes such as revenue, costs, earnings, and profit. The estimation was also conducted on constructed profit which is the difference between reported revenue and the sum of reported costs of the WALN business (this is not reported in the paper). However, the estimation results reveal that there is no treatment effect on constructed profit and reported profits. This shows that the results are not sensitive to the type of profit variable under consideration. Neither did the business training intervention have a statistically significant effect on the number of employees, which was used to capture business expansion (this is not reported either). The estimations were conducted both on the raw and winsorized forms of the outcome variables. As can be observed from Table 3 in Appendix 1, the results are robust to the transformations made on the outcome variables.

## [PRELIMINARY RESULTS, PLEASE DO NOT CITE]

We also look into the impact of the business training intervention on business skills (Table 4). The results of the linear probability estimation show that treatment mentors fare better in terms of some of the key skills identified by McKenzie and Woodruff (2016) as well as Bloom and Van Reenen (2007) and Bruhn et al. (2010). Specifically, treatment mentors are 22% more likely to have a written business plan than control mentors. A similar magnitude of the impact holds for the annual budget. Although at a smaller scale, treatment mentors were also found to have a greater probability of keeping financial records. Treatment mentors are 18% more likely to hold financial records than women in the control group. Business money management, which captures whether the woman separates her business and household money, is one of the knowledge and skill outcome indicators. However, the business training intervention does not have a statistically significant effect on this outcome indicator. This is not reported in the Appendix.

In the longer term (approximately, 2 years after the business training program), we find strong positive effects of the training program (Table 3, Column 2). Compared to control firms, treatment firms exhibit higher reported and constructed profits as well as the number of business activities. This effect appears to be driven by a continued adoption of several of the ‘better’ business practices identified by McKenzie and Woodruff (2016). These include (Table 4, Column 2), adoption of written business plan, annual budget and formal financial record-keeping as well as knowledge of the industry (which products sell well; mindfulness of price changes; comparing price and quality with suppliers and competitors). Moreover, we asked questions on marketing/advertising as well as stocking behavior of firms, which also show upward movement for treatment firms.

### *Mentees of Treated Mentors Experiment*

A comparison of means in the business and knowledge outcome variables was also conducted for the mentees experiment which compares the treated mentees with control mentees of treated mentors. The results of the mean comparisons show that the treatment impact is statistically significant on the winsorized form of reported profit at 10% significance level. This effect is maintained on several specifications of yearly (overall) and monthly (WALN) business profits/earnings. As can be observed from Table 5 in Appendix 1, treatment mentees of treated mentors have reported around ETB 470 more monthly profit on average than the control mentees of treated mentors.

Similarly, to the outcome of the mentors, treatment mentees are more likely to adopt some of the business practices in the short term (Table 6). However, the magnitude and statistical significance is higher for mentor outcomes than mentee outcomes.

Unlike the case for the mentors’ group, the effect of the mentoring program was not statistically significant for most of profit variables in the longer term. Likewise, the impact on business practices also diminishes.

## 5. Conclusion

The WALN program is an interesting departure from the standard business training model. Under a stratified randomized control trial framework, experienced business women who are involved in agriculture-related businesses are given formal business training. But the more innovative part in this evaluation design is the inclusion of a second stage training, where a random selection of women mentees within the social and business network of mentors, receive customized mentoring. There are important implications for the evaluation of this project, particularly, in the context of the transmission of business knowledge and best practices across social and business networks and the efficacy of informal mentorship programs.

We find that formal business training does not produce any significant impact on business performance in the short term but does improve the adoption of business practices taught to them in the training program. In the longer term, however, the training program induces a strong positive effect on different dimensions of business performance, such as reported and constructed profits as well as the number of business activities. This effect appears to be driven by a continued adoption of several of the ‘better’ business practices identified by McKenzie and Woodruff (2016). This result also confirms the criticism by McKenzie and Woodruff (2013) that many of the business training evaluations measure impacts only within a year of training, which may indicate the prevalence of null results in the literature.

Given the extent of micro-entrepreneurial activities in developing countries, it is also important to identify low-cost programs that can lead towards the adoption of these business practices that can potentially improve welfare for small businesses. We make the case that trained mentorship could be a relatively low-cost solution to this problem. We do this by connecting trainees of the above-mentioned formal business training program to a random subset of small firm owners within their social and business networks and evaluate the outcome of the treatment mentees compared to control mentees (who did not receive the mentorship). We find that the treatment ‘mentees’ exhibit strong effects in the short term – both in the adoption of some business practices as well as profits. However, this effect does not persist in the longer term.

We are currently carrying out the last round of data collection. In the final version of the paper, we will include the results from this data. Moreover, we will consider spillover effects of the mentorship.

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## Appendices

### Appendix 1. Estimation Results

**Table 3: Business Training—Business Performance Outcomes**

	(1) Midline			(2) Endline		
	OLS	Control Mean	<i>n</i>	OLS	Control mean	<i>n</i>
<b>Profit (All Business Activities, Last 12 months) <sup>[a]</sup></b>						
<i>Raw</i>	-1,219,037.00 (1,577,030.21)	1,685,244	193			
<i>Winsorized (2.5% each tail)</i>	8,762.565 (22,658.419)	91,159.14				
<i>Winsorized (Top 2.5%)</i>	4,026.021 (27,069.048)	87,412.26				
<b>Profit (All Business Activities, Last 30 Days) <sup>[a]</sup></b>						
<i>Raw</i>				38700.350 (25538.703)	7656.333	193
<i>Winsorized (2.5% each tail)</i>				4566.663 * (2429.44)	7002.531	
<i>Winsorized (Top 2.5%)</i>				5099.902 ** (2503.218)	6406.333	
<b>Profit (Only WALN business, Last 30 Days) <sup>[a]</sup></b>						
<i>Raw</i>	3,192.267 (2109.42)	7,875.170	180	63029.170 * (37746.062)	3166.169	131
<i>Winsorized (2.5% each tail)</i>	1130.483 (1558.414)	5,551.534		1122.000 (825.592)	2825.631	
<i>Winsorized (Top 2.5%)</i>	1209.576 (1564.766)	5,488.807		2046.179 * (1058.109)	2089.246	
<b>Revenue (All Business Activities, Last 30 Days) <sup>[a]</sup></b>						
<i>Raw</i>	931.879 (12707.959)	99,545.260	181	85130.910 ** (40447.039)	31216.310	190
<i>Winsorized (2.5% each tail)</i>	5,841.859 (9,828.034)	37,989.700		32796.330 *** (12545.182)	30724.650	
<i>Winsorized (Top 2.5%)</i>	5,841.859 (9,828.034)	37,989.700		32796.330 *** (12545.182)	30724.650	
<b>Costs (All Business Activities, Last 30 Days) <sup>[a]</sup></b>						
<i>Raw</i>	44,7325.8 (364,987.864)	88,933.040	193	33265.370 * (19203.562)	34482.790	193
<i>Winsorized (2.5% each tail)</i>	6,321.191 (17,738.923)	56,598.100		34932.230 ** (15847.876)	32481.310	
<i>Winsorized (Top 2.5%)</i>	6321.191 (17,738.923)	56,598.1		34932.230 ** (15847.876)	32481.310	

\* p<0.10, \*\*p<0.05, \*\*\*p<0.01. Standard Errors in Parenthesis. *Source:* WALN Midline and Endline Data.

*Note:* Strata FE included. SEs not clustered. [a] These estimates are calculated using ANCOVA specifications i.e. baseline value of outcome variable is added as an independent variable.

**[PRELIMINARY RESULTS, PLEASE DO NOT CITE]**

**Table 4: Business Training—Diversification and Business Practices Outcomes**

	(1) Midline			(2) Endline		
	OLS	Control Mean	<i>n</i>	OLS	Control mean	<i>n</i>
<i>Business Diversification</i>						
Number of Business Activities				0.472 **	1.823	193
				(0.197)		
Number of New Business Activities since Midline				0.232 **	0.354	193
				(0.108)		
<i>Business Practices</i>						
Has written business plan?	0.230633 ***	0.380	186	0.164 **	0.363	165
	(0.069)			(0.073)		
Has written annual budget	0.2067027 ***	0.174	186	0.023	0.275	165
	(0.065)			(0.069)		
Does financial record-keeping?	0.1802178 ***	0.196		-0.010	0.300	165
	(0.066)			(0.07)		
Asked supplier which products sell well in industry?				0.220 ***	0.400	165
				(0.075)		
Negotiated with supplier for lower price in the last 3 months?				0.156 **	0.650	165
				(0.069)		
Compared prices/quality with alternate suppliers in the last 3 months?				0.115 *	0.688	165
				(0.069)		
How long does it take to obtain goods when you run out of stock?				-5.148 **	5.663	165
				(2.38)		
Use any offer to attract customers in the last 3 months?				0.178 **	0.463	165
				(0.078)		

\* p<0.10, \*\*p<0.05, \*\*\*p<0.01. Standard Errors in Parenthesis.

Source: WALN Midline and Endline Data.

Note: Strata FE included. SEs not clustered.

**[PRELIMINARY RESULTS, PLEASE DO NOT CITE]**

**Table 5: Mentoring—Business Performance Outcomes**

	(1) Midline			(2) Endline		
	OLS	Control Mean	<i>n</i>	OLS	Control mean	<i>n</i>
<b>Profit (All Business Activities, Last 12 months) <sup>[a]</sup></b>						
<i>Raw</i>	24,627.93 (29,544.991)	39,511.69	561			
<i>Winsorized (2.5% each tail)</i>	6,330.638 * (3,417.038)	27,566.97				
<i>Winsorized (Top 2.5%)</i>	6,895.501 (5,125.544)	23,881.05				
<b>Profit (All Business Activities, Last 30 Days) <sup>[a]</sup></b>						
<i>Raw</i>				4,616.675 (2,815.924)	2,952.545	562
<i>Winsorized (2.5% each tail)</i>				365.218 (431.604)	3,327.502	
<i>Winsorized (Top 2.5%)</i>				649.429 (579.681)	2,743.032	
<b>Profit (Only WALN business, Last 30 Days) <sup>[a]</sup></b>						
<i>Raw</i>	-2,428.471 (4,313.818)	6,368.667	493	443.049 (651.743)	2,757.042	346
<i>Winsorized (2.5% each tail)</i>	477.489 * (245.673)	2,003.421		14.818 (430.158)	2,720.848	
<i>Winsorized (Top 2.5%)</i>	467.469 * (247.297)	1,989.5		-169.206 (476.455)	2,660.073	
<b>Revenue (All Business Activities, Last 30 Days) <sup>[a]</sup></b>						
<i>Raw</i>	6,441.449 (11,811.857)	21,664.07	500	24,595.34 (29,050.313)	13,602.15	557
<i>Winsorized (2.5% each tail)</i>	2,358.198 (1,870.697)	13,146.92		2,282.28 (1,850.697)	13,018.04	
<i>Winsorized (Top 2.5%)</i>	2,358.198 (1,870.697)	13,146.92		2,282.28 (1,850.697)	13,018.04	
<b>Costs (All Business Activities, Last 30 Days) <sup>[a]</sup></b>						
<i>Raw</i>	3,213.479 (4,755.88)	14,809.7	562	34,884.67 * (20,280.661)	13,686.21	562
<i>Winsorized (2.5% each tail)</i>	3,702.254 ** (1,586.412)	10,021.42		2,401.238 (1,719.991)	11,160.95	
<i>Winsorized (Top 2.5%)</i>	3,702.254 ** (1,586.412)	10,021.42		2,401.238 (1,719.991)	11,160.95	

\* p<0.10, \*\*p<0.05, \*\*\*p<0.01. Standard Errors in Parenthesis.

Source: WALN Midline and Endline Data.

Note: Mentor FE included. SEs not clustered. [a] These estimates are calculated using ANCOVA specifications i.e. baseline value of outcome variable is added as an independent variable.

**[PRELIMINARY RESULTS, PLEASE DO NOT CITE]**

**Table 6: Mentoring—Diversification and Business Practices Outcomes**

	(1) Midline			(2) Endline		
	OLS	Control Mean	<i>n</i>	OLS	Control mean	<i>n</i>
<b><i>Business Diversification</i></b>						
Number of Business Activities				0.133 (0.083)	1.527	562
Number of New Business Activities since Midline				-0.036 (0.054)	0.4837	562
<b><i>Business Practices</i></b>						
Has written business plan?	0.018 (0.033)	0.211	518	0.018 (0.034)	0.2112	468
Has written annual budget	0.056 * (0.029)	0.135	518	0.015 (0.031)	0.146	468
Does financial record-keeping?	0.083 *** (0.031)	0.119	518	0.02 (0.028)	0.108	468
Asked supplier which products sell well in industry?				0.029 (0.038)	0.259	468
Negotiated with supplier for lower price in the last 3 months?				0.013 (0.041)	0.685	468
Compared prices/quality with alternate suppliers in the last 3 months?				-0.003 (0.038)	0.750	468
How long does it take to obtain goods when you run out of stock?				-0.453 (1.379)	3.293	468
Use any offer to attract customers in the last 3 months?				-0.006 (0.043)	0.547	468

\* p<0.10, \*\*p<0.05, \*\*\*p<0.01. Standard Errors in Parenthesis.

Source: WALN Midline and Endline Data.

Note: Strata FE included. SEs not clustered.

**[PRELIMINARY RESULTS, PLEASE DO NOT CITE]**

## Appendix 2. Baseline Balance Tables

**Table 4: Business Training Group—Baseline Balance**

<b>Outcomes</b>	<b>Coefficient</b>	<b>Control Mean</b>	<b>n</b>
<b>Age (years)</b>	-0.355 (1.288)	37.500	197
<b>Business Experience (years)</b>	0.393 (1.051)	11.031	197
<b>Number of years of Operation</b>	1.146 (0.812)	6.823	190
<b>Number of products and services</b>	-0.045 (1.213)	5.531	197
<b>Profit (All Business Activities, Last 12 months)</b>			
<i>Raw</i>	9,972,384.00 (10,440,131.08)	167,348.20	197
<i>Winsorized (2.5% each tail)</i>	1,092.21 (20,863.63)	62,756.38	197
<i>Winsorized (Top 2.5%)</i>	1,092.21 (20,863.63)	62,756.38	197
<b>Profit (Only WALN business, Last 30 Days)</b>			
<i>Raw</i>	-2,711.238* (1,551.29)	4,568.00	195
<i>Winsorized (2.5% each tail)</i>	-548.03 (576.45)	2,732.24	195
<i>Winsorized (Top 2.5%)</i>	-591.79 (579.27)	2,731.27	195
<b>Costs (Only WALN business, Last 30 Days)</b>			
<i>Raw</i>	-145,617.80 (110,704.29)	152,837.10	197
<i>Winsorized (2.5% each tail)</i>	-10,143.68 (21,734.82)	45,689.18	197
<i>Winsorized (Top 2.5%)</i>	-10,143.68 (21,734.82)	45,689.18	197
<b>Value of Inventories</b>			
<i>Raw</i>	95,179.60 (133,944.19)	113,166.90	197
<i>Winsorized (2.5% each tail) each tail</i>	48,134.97 (78,514.70)	92,758.70	197
<i>Winsorized (Top 2.5%)</i>	48,134.97 (78,514.70)	92,758.70	197

\* p<0.10, \*\*p<0.05, \*\*\*p<0.01. Standard Errors in Parenthesis.

Source: WALN Baseline Data.

Notes: Strata FE included. The outcomes were regressed on each of the treatment dummy variables,

[PRELIMINARY RESULTS, PLEASE DO NOT CITE]

Table 5: Mentees of Treated Mentors —Baseline Balance

Outcomes	Coefficient	Control Mean	<i>n</i>
<b>Age (years)</b>	-0.018 (0.822)	9.92	572
<b>Business Experience (years)</b>	0.328 (0.74)	6.72	572
<b>Number of years of Operation</b>	-0.394 (0.716)	35.19	572
<b>Number of products and services</b>	-1.595 (1.168)	6.61	572
<b>Profit (All Business Activities, Last 12 months)</b>			
<i>Raw</i>	-70,7930.7 (680,940.501)	708,089.00	570
<i>Winsorized (2.5% each tail)</i>	906.964 (2,778.141)	22,296.48	570
<i>Winsorized (Top 2.5%)</i>	906.964 (2,778.141)	22,296.48	570
<b>Profit (Only WALN business, Last 30 Days)</b>			
<i>Raw</i>	1,468.861 (1,907.583)	1,908.00	565
<i>Winsorized (2.5% each tail)</i>	-66.459 (164.664)	1,382.53	565
<i>Winsorized (Top 2.5%)</i>	-51.199 (165.692)	1,364.55	565
<b>Costs (Only WALN business, Last 30 Days)</b>			
<i>Raw</i>	3,462.986 (12,509.435)	15,254.11	565
<i>Winsorized (2.5% each tail)</i>	-1,181.882 (1,121.997)	8,514.44	565
<i>Winsorized (Top 2.5%)</i>	-1,181.882 (1,121.997)	8,514.44	565
<b>Value of Inventories</b>			
<i>Raw</i>	8,992.636 (13,402.454)	16,035.14	565
<i>Winsorized (2.5% each tail) each tail</i>	-2,840.59* (16,32.573)	9,025.61	565
<i>Winsorized (Top 2.5%)</i>	-2,840.59* (1,632.573)	9,025.61	565

\* p<0.10, \*\*p<0.05, \*\*\*p<0.01. Standard Errors in Parenthesis.

Source: WALN Baseline Data.

Notes: Strata FE included. The outcomes were regressed on each of the treatment dummy variables,

### Appendix 3. Descriptive Statistics

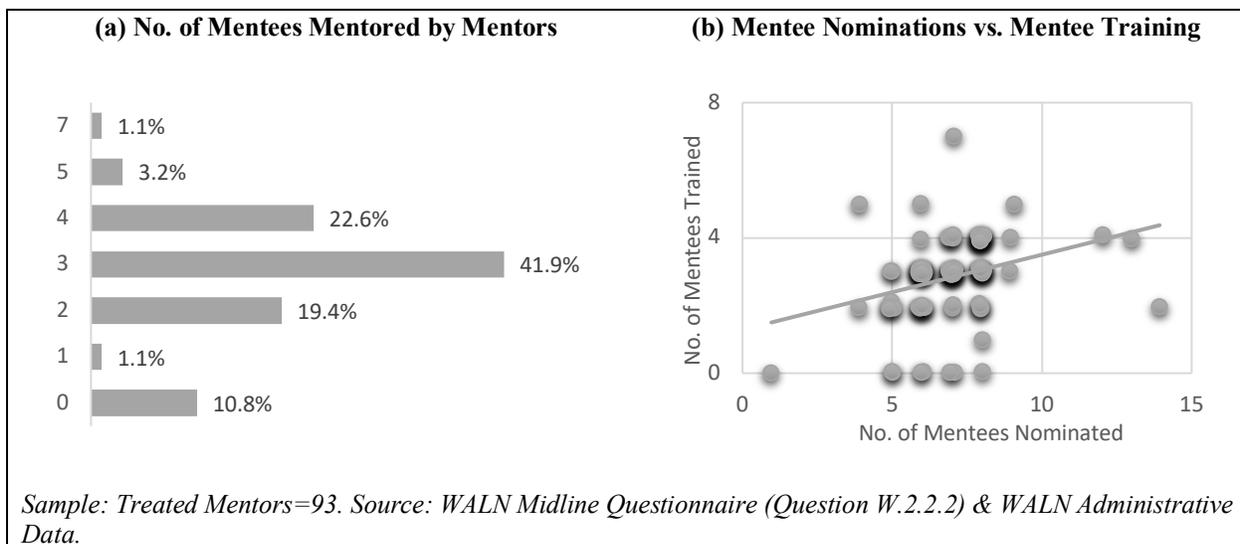
The section discusses some descriptive analysis of four themes that might be important to understand at this intermediate stage of the project: (1) WALN program participation, (2) business knowledge and skills, (3) confidence in other businesses and (4) household headship.

#### *WALN Program Participation*

Since both the WALN business training and mentoring activities were completed before the midline data was collected, we included a module about program participation to which treated mentors and mentees were asked to respond. Understanding the extent to which intended beneficiaries actually participated in the program is an important first step, since any impacts that we might hope to identify are contingent on program participation.

Almost 90% of the mentors assigned to receive the business training treatment actually participated and completed the training. This is very high when compared to the 65% average completion rate that McKenzie and Woodruff found in their 2012 survey of seventeen impact evaluations of business training programs.<sup>10</sup>

Figure 1: How many mentees did mentors mentor?

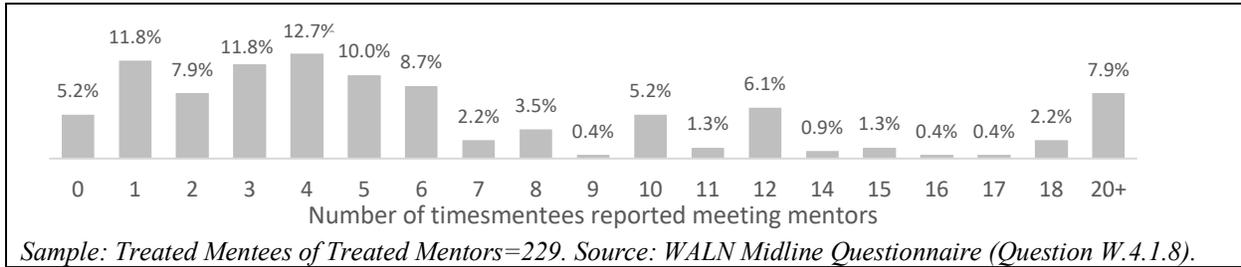


Treatment-group mentors were invited to provide the mentoring sessions to a randomly selected subset of the mentees they had nominated. All mentors who participated in the business training provided mentoring to at least 1 mentee, and in fact, the 11% of mentors who didn't participate in the business training, didn't provide any mentoring either. Over 80% of the mentors mentored between 2 and 4 mentees (Figure 1a). The number of mentees that was actually trained was correlated with the number of mentees that were originally nominated by the mentors (Figure 1b).

<sup>10</sup> McKenzie, D., & Woodruff, C. (2012, October). What Are We Learning from Business Training and Entrepreneurship Evaluations around the World?. IZA Discussion Paper Series, IZA DP No. 6895.

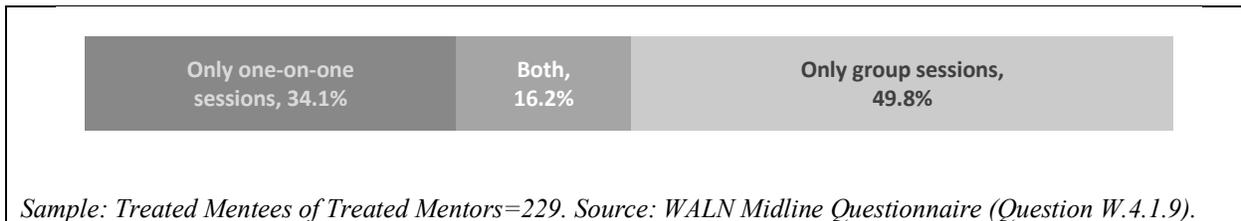
**[PRELIMINARY RESULTS, PLEASE DO NOT CITE]**

**Figure 2: How many times did mentees meet their mentors?**



We also looked at the number of mentoring sessions that mentees received from mentors. The amount of exposure to the mentor may be a channel through which the mentee’s business knowledge might be impacted. 95% of mentees participated in 1 or more sessions, while 40% participated in more than 5 sessions. Clearly, mentoring seems to have been taken seriously by most mentors and mentees. (Figure 2)

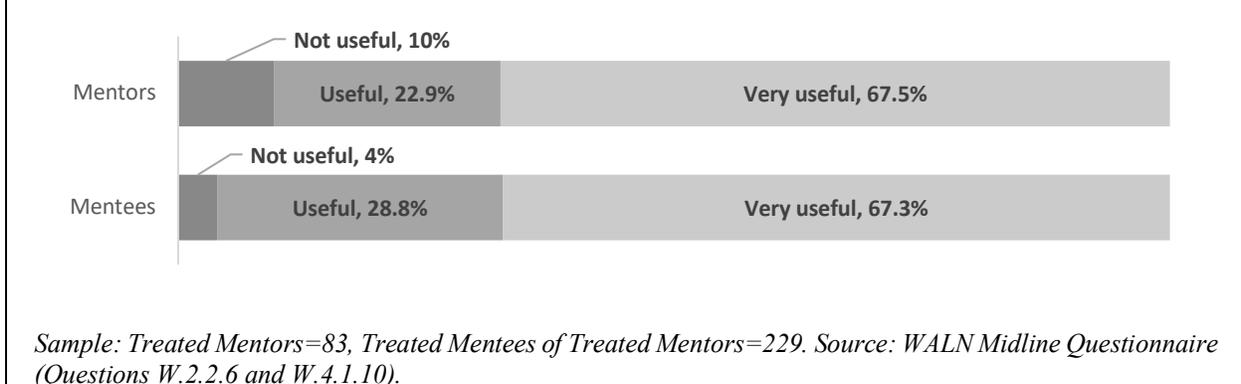
**Figure 3: Groups and one-on-one mentoring**



The modality of mentoring sessions varied across mentors. About half of the mentees only received mentoring in groups with others, while about a third received exclusively one-on-one mentoring. The remaining 16% received a combination of both (Figure 3).

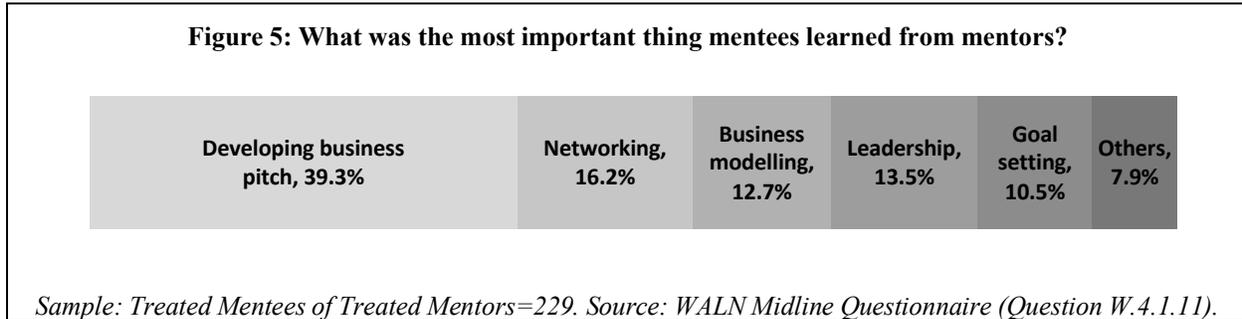
WALN mentors and mentees were asked to what extent they found their participation in the mentoring program useful. Figures 4 shows that over 90% of mentors and over 95% of mentees found the program either *useful* or *very useful*.

**Figure 4: How useful did mentors and mentees find the mentoring sessions?**



[PRELIMINARY RESULTS, PLEASE DO NOT CITE]

Mentees derived value from a number of different factors they learned in the mentoring sessions. “Developing a business pitch” was the most important thing that about 2 out of 5 mentees learned from their mentors. Increased networking, business modeling, leadership skills, and goal setting were other important skills mentees reported as valuable learnings from the mentoring sessions. (Figure 5).



***Business Knowledge and Skills***

Business knowledge and skills are an important intermediate outcome and intended impact of the WALN program. We discuss some summary statistics of these outcomes in this section and provide some additional analysis of midline data in Section 6 below.<sup>11</sup>

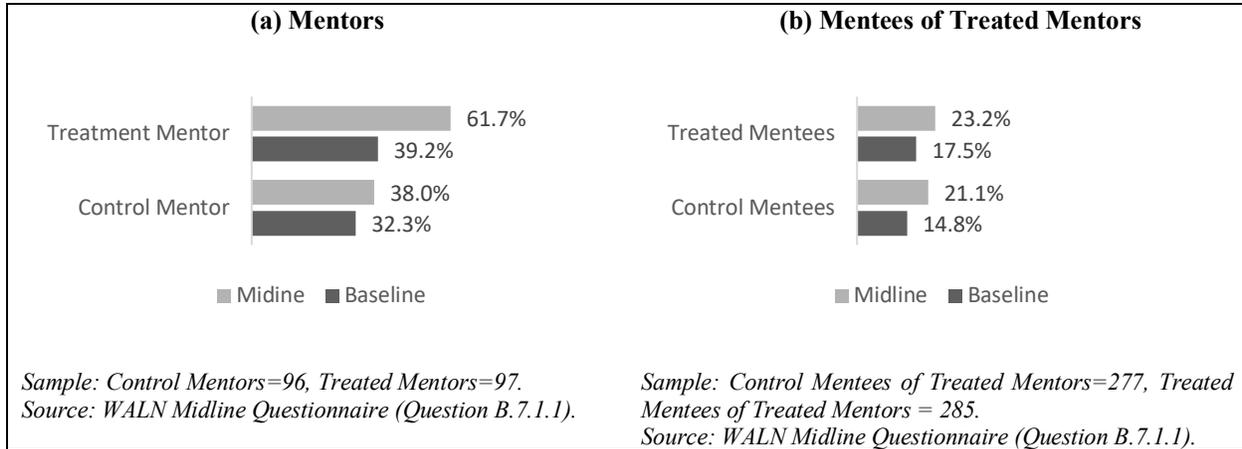
Mentors in both treated and control groups are more likely to have business plans in the midline than they were at the baseline. Figure 6(a) shows that over 20% more treated mentors had business plans at midline compared to baseline, while the increase for the control group was only about 6%. Treated mentees were slightly more likely to have a business plan at baseline than control mentees of treated mentors. At midline, the change from baseline for both groups was very similar, i.e. about 6% (Figure 6b).

**Figure 6: How many WALN women have business plans?**

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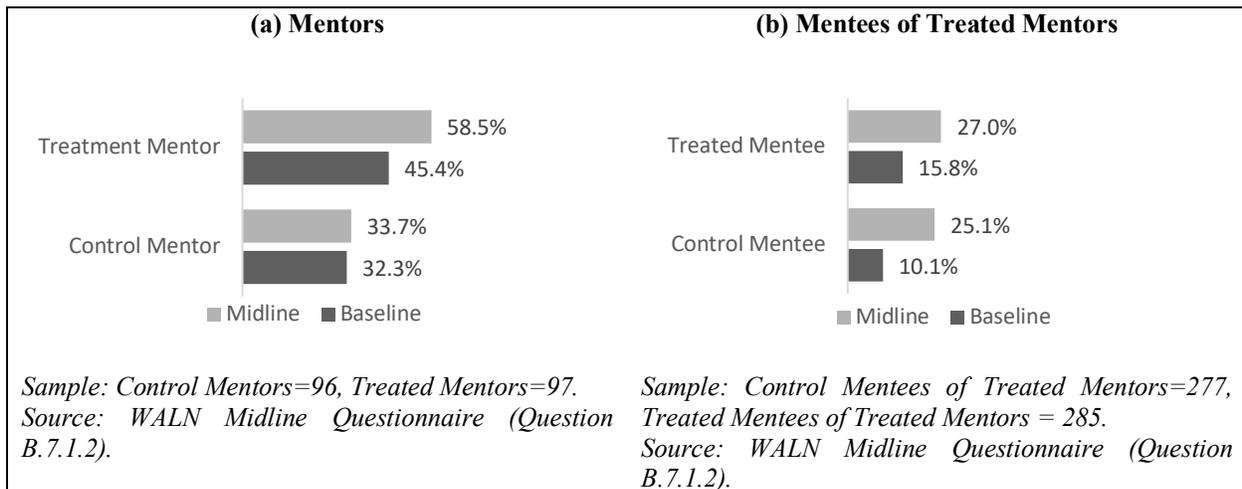
<sup>11</sup> When interpreting descriptive statistics in this subsection we must approach with caution, since these are preliminary estimates using simple mean comparisons which do not attempt to account for the stratification in the IE design. The discussion in Section 6 uses a more robust analytical strategy.

[PRELIMINARY RESULTS, PLEASE DO NOT CITE]



Treated mentors were taught how to develop an annual budget during the business training. Treated mentors are over 13% more likely to have an annual budget at midline than they were at baseline, while the control mentors were less than 2% more likely (Figure 7a). Compared to baseline, over 11% more treated mentees of treated mentors report that they maintain annual budgets at midline. There is also a 15% rise in this outcome for control mentees. Midline levels for both groups are similar (Figure 7b).

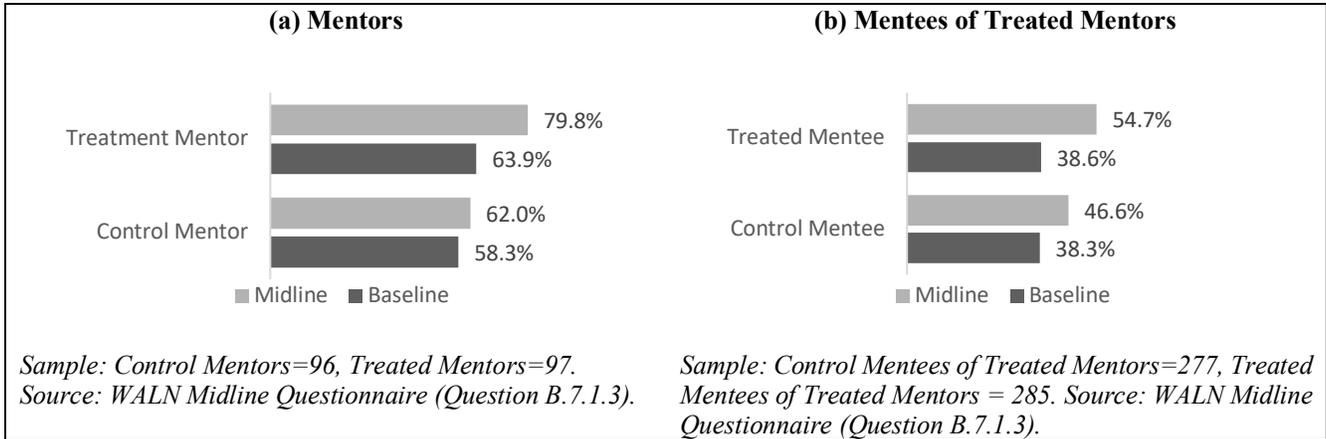
**Figure 7: How many WALN women have annual budgets for their businesses?**



The business training received by treated mentors also included lessons on financial record keeping. Treated mentors were 16% more likely to report maintaining financial records for their business at midline than they were at baseline. By contrast, the increase was just 4% amongst control mentors who didn't participate in the WALN business training (Figure 8a). Treated mentees of treated mentors were also about 16% more likely to report maintaining financial records at midline than they were at baseline, while control mentees of the treated mentors reported a smaller rise of just over 8% (Figure 8b).

**Figure 8: How many WALN women maintain financial records for their businesses?**

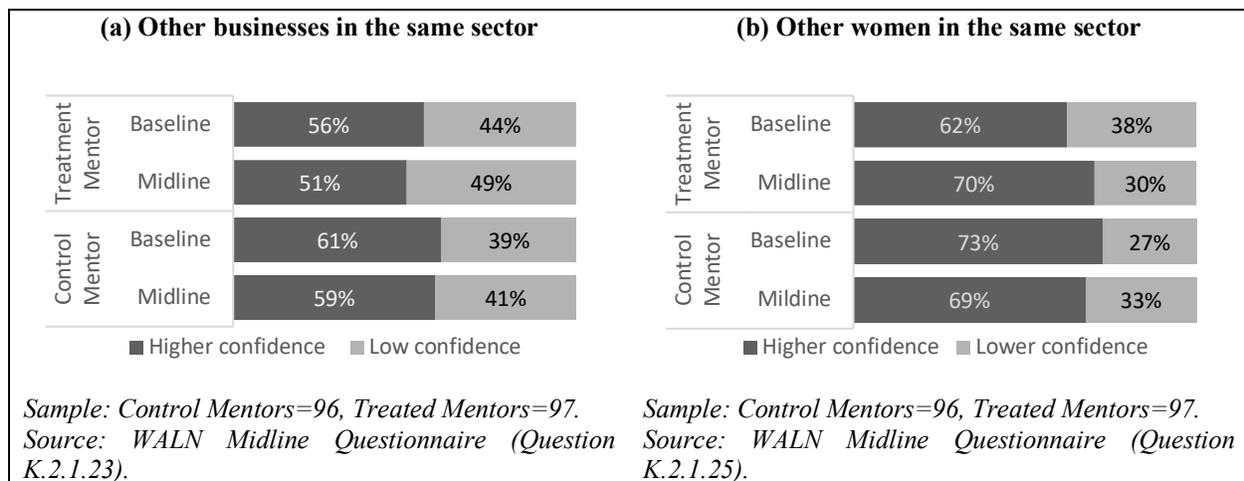
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**Confidence in Other Businesses**

Confidence and trust are considered an important ingredient in the success of business transactions, and therefore in the success of businesses. Although, we aren't able to measure the trust at the transaction level, we do measure confidence in two groups that respondents are likely to interact with in their business and discuss the results in this section. The two groups we discuss here are: (1) other businesses operating in the sector that the respondent operates in and (2) other business women in that sector. Respondents were asked to rate their confidence in each group on a four points scale.<sup>12</sup> To simplify the presentation here, we generate a binary variable showing *higher confidence* and *lower confidence*.<sup>13</sup>

**Figure 9: Mentors' trust in other businesses**



Confidence levels in other businesses between baseline and midline don't shift very much; there is a 5% drop for treatment mentors and 2% for control mentors (Figure 9a). Mentors' confidence

<sup>12</sup> Trust scale: "No confidence at all"=1, "Not a lot of confidence"=2, "Quite a lot of confidence"=3 and "A great deal of confidence"=4.

<sup>13</sup> Binary trust variable: 1 = "Higher Confidence" when the trust scale is either "Quite a lot confidence" or "A great deal of confidence"; 0 = "Lower confidence" when trust scale is either "No confidence at all" and "Not a lot of confidence"

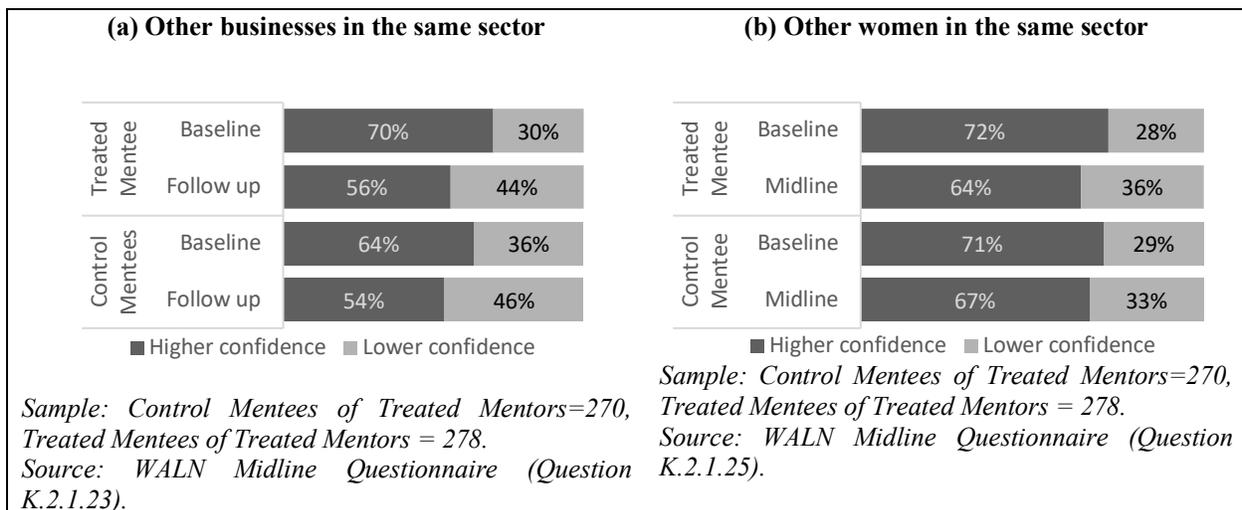
[PRELIMINARY RESULTS, PLEASE DO NOT CITE]

in other business women in their sector, however, rises slightly by 8% for treatment mentors while it declines by 4% for control mentors (Figure 9b).

Mentees exhibit a similar trend, with respondents less likely to have higher confidence in other businesses operating in both mentee groups. The data show that treated mentees of treated mentors are 14% less likely to have higher confidence in other businesses in their own sectors, while control mentees of treated mentors see a similar drop of about 10% (Mentees confidence in other business women in their sector shows the opposite trend to the mentors, with moderate reductions of 8% in higher confidence amongst treated mentees of treated mentors, and 4% amongst control mentees (Figure 10b).

Figure 10a). Mentees confidence in other business women in their sector shows the opposite trend to the mentors, with moderate reductions of 8% in higher confidence amongst treated mentees of treated mentors, and 4% amongst control mentees (Figure 10b).

**Figure 10: Mentees’ trust in other businesses**



These are intriguing results and need additional scrutiny and data collection to unpack whether these are statistically and substantively significant and why the mentees’ confidence in other business women seems to be falling, while mentors’ confidence is rising. We will collect additional data at the endline to better understand these results.

**Gender and Household Headship**

In the baseline survey, 52% of married respondents self-identified as the head of their households. This was large, considering the cultural norms in Ethiopia. The 2011 Ethiopian DHS, for instance, found that 35% of urban and 3% of rural households reported having female household heads.<sup>14</sup>

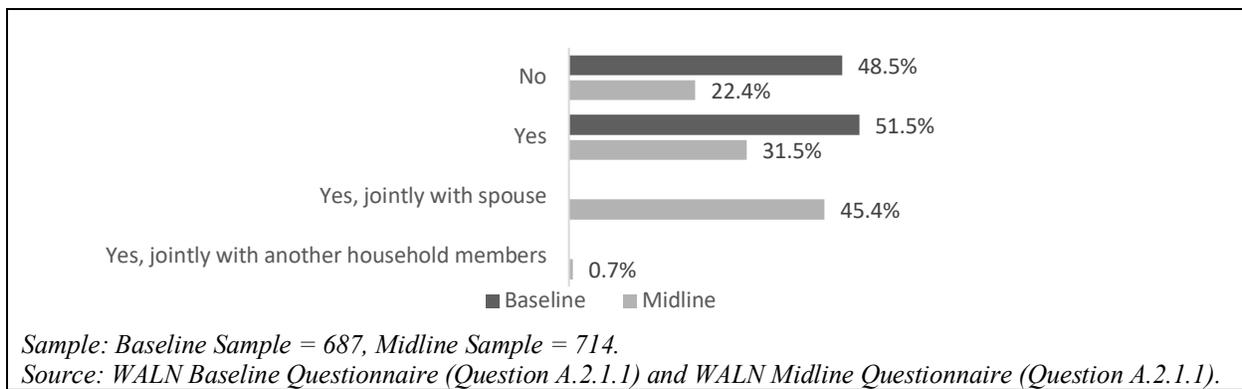
<sup>14</sup> 65% of urban household heads and 77% of rural household heads were male in EDHS (2011). “Ethiopia Demographic and Health Survey”. Central Statistical Agency and ICF International: Addis Ababa, Ethiopia and Calverton, Maryland, USA.

[PRELIMINARY RESULTS, PLEASE DO NOT CITE]

However, the WALN survey is different from other national household surveys because the question of household headship is explicit.<sup>15</sup> Whereas, DHS and the Ethiopian Socio-economic Survey (ESS) do not have a separate question on household headship. Rather, the person who is identified as the household head by many of the household members is taken as the head of the household.

There was a possibility that the binary framing of the question might have biased the responses in the baseline. To check if question framing was driving the result, we added two more response options in the midline survey: “Yes, jointly with spouse” and “Yes, jointly with another household member.”

**Figure 11: Household Headship**



With this new framing, at midline, 20% fewer women report being the sole household head and 26% fewer women report not being the household head. 45% of the women now report that they are jointly the head of their households with their spouse, while less than 1% report that they share headship with another family member (Figure 11). Additional analysis of this data is being conducted, and a separate working paper is planned.

<sup>15</sup> The household headship question read “Are you the head of the household?” At baseline, there were two possible responses: “Yes” and “No”.