Pre-Analysis Plan Spousal support and mindset-oriented business training for women entrepreneurs in Ethiopia^{*}

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Abstract

Intrahousehold constraints imposed by inefficient bargaining or household production may contribute to gender gaps in entrepreneurship outcomes. Using a randomized controlled trial we test whether the economic returns to a mindset-oriented business skills intervention to female firm owners are higher when incorporating curricula designed to encourage greater spousal support for married women entrepreneurs. The *couples'* training component involves modelling effective communication techniques for women entrepreneurs and their male partners with training content focused on financial, network, and time resource allocation within the household. Results from this study will contribute to the evidence base on alleviating skills and intrahousehold constraints and engaging men to support economic opportunities for women. Baseline data collection and implementation are complete for a sample of 987 women entrepreneurs and endline surveys are expected to begin in July 2023.

Keywords: Gender, Entrepreneurship, Skills, Intrahousehold Dynamics, Ethiopia

JEL codes: J16, J24, O12, L26

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1 Introduction

Women's entrepreneurship is considered an important driver of economic growth and poverty alleviation (Duflo, 2012). However, a persistent gender gap in firm performance, with womenowned firms being smaller and less profitable than male-owned firms, has been evidenced worldwide (Hardy and Kagy, 2018; World Bank, 2019; Delecourt and Ng, 2020; Fang et al., 2022). Recent research has pointed to the importance of *intra-household constraints* imposed by inefficient bargaining or household production as an important mediating factor in women's entrepreneurial success and investment decisions (Bernhardt et al., 2019). Husbands have been found to be key stakeholders and influential in women entrepreneurs' businesses (Friedson-Ridenour and Pierotti, 2019; Wolf and Frese, 2018). We use a experiment in the context of a mindset-oriented business training program to test how women's business decisions are influenced by their spousal relationship.

Mindset-oriented entrepreneurship training that has an underpinning in psychology has been shown to be a promising intervention to improve entrepreneur productivity, especially among female firm owners (see for example, Campos et al. (2017); Chioda et al. (2021); Dimitriadis and Koning (2022)). The skills that these trainings seek to develop are social and emotional or "socioemotional" skills - such as self-efficacy, personal initiative, assertiveness or empathy - and may be used to enhance negotiation and communication skills with others.¹ Women entrepreneur's may benefit from social and emotional skills that allow her to better communicate and cooperate with her spouse to gain support for her business. Using a mindset-oriented training with a short couples-focused module that involves the engagement of male partners, we examine the impact of a new training on the performance of women-owned businesses. Our paper contributes to the emerging evidence on the part of male engagement in unleashing the economic potential of women. We address a gap in the economics literature on how and why intrahousehold relationships are related to women's business management, and whether engaging the spousal partner in her business contributes to her overall business health.

In this study we use an individual-level randomized controlled trial (RCT) to examine the impact of the mindset-oriented training delivered to women business owners alone and in partnership with her husband in Ethiopia. The couples' training component involves modelling effective communication techniques for women entrepreneurs and their male partners with training content focused on financial, network, and time resource allocation within

 $^{^{1}}$ In the economics literature socioemotional skills are often referred to as non-cognitive skills, soft skills, or life skills. Socioemotional skills can be categorized into *intrapersonal skills* (e.g. personal initiative, self-awareness and self-management) and *interpersonal skills* (e.g. social awareness and relationship management).

the household. Our design attempts to shine light on whether developing social and emotional skills in tandem with her husband are foundational for her to successfully use the trained skills to improve her business outcomes.² The mindset-oriented training is delivered to women entrepreneurs in urban locations in Ethiopia.³ We embed the spousal component within the mindset-oriented business training that attempts to alleviate a skills constraint.

Economic theories of household decision-making highlight the importance of the gender earnings differential in determining unequal time spent on housework and household resource allocation (Chiappori, 1997).⁴ The bargaining model of household decision-making, posits that couples bargain either cooperatively or non-cooperatively to maximize utility. The model supposes that the better an individual's outside opportunities in the marriage market, the greater that person's bargaining power and the less time the individual is likely to spend on housework and gain resources. Similarly, the collective model of household decision-making, expresses household utility as a weighted sum of the utility of the individuals within the household where the weights are modeled as relative power functions. Thus, the individual with the most power has the most say in determining how resources and time are allocated within the household. Power is modeled as a function of the relative resources an individual contributes to the household. Existing studies of intrahousehold resource management have provided rich descriptions of common practices and dimensions of variation (Johnson, 2017), but there has been relatively little work linking those practices with the entrepreneurial behaviours of household members.⁵

The intrahousehold bargaining channel predicts that socioemotional skills to women taught alongside her husband may have a greater influence on her economic outcomes than those taught individually. For instance, if training improves assertive communication, a woman may be able to increase her bargaining power, and the allocation of resources within the household may be more efficient to allow for higher economic success. This may have implications for other development outcomes, as the literature suggests that increasing women's bargaining power in the household improves overall family welfare (Duflo, 2003; Qian, 2008; Thomas, 1990). In the Ethiopian context, socioemotional skills may be particularly relevant since care and household duties disproportionately fall onto women within the house-

 $^{^{2}}$ The business women opt-in to include her spousal partner, so expectations are that the partner will already be somewhat supportive of her.

³The training is delivered by Digital Opportunity Trust (DOT).

⁴The unitary model of the household, which assumes that all household members act to maximize one budget to achieve the same goals, has proven insufficient to describe household resource management (Doss, 1996).

⁵There is substantial literature in sociology on the processes of intra-household decision making which emphasizes the importance of financial management structures and the role that information and communication can play in making decisions within a marriage (see, Ashraf (2009) and Friedson-Ridenour and Pierotti (2019) for a discussion of this literature.)

hold. Husbands may also provide a key source of business financing for married women entrepreneurs by investing in her business directly or acting as a guarantor to access business loans. There may also be potential for husbands to act as an entry-point into more profitable, male-dominated sectors (Alibhai et al., 2017). Gaining socioemotional skills with a male partner may prove more important if women need support as they look for resources, prioritize their business and long-term returns.

Based on a systematic review of the entrepreneurship literature, Wolf and Frese (2018) identify six potential types of spousal influence on entrepreneurial activity, including: handson business support; advice, ideas and networks; emotional support; financial resources; household and family assignments; and business interference. Positive influences from engaging husbands could arise from women being able to practice taught socioemotional skills directly with their husband to make these skills more salient to use with other business acquaintances. Or by improving communication and empathy between the spouses such that women increase their bargaining power to negotiate a higher resource allocation (Ashraf, 2009). An increase may come from a greater appreciation by the husband of the value of his wife's business in contributing to the household. On the contrary, spouses who interfere in the business, for example by controlling business decisions or drawing on business resources, may have a negative influence on entrepreneurial outcomes. There is evidence that women's negotiations may yield negative returns in certain environments (e.g. Exley et al. (2020)). Lab-in-the-field experiments across a number of contexts have shown that both men and women are willing to pay a cost to retain individual control over cash by keeping money hidden from a spouse (Kebede et al., 2014; Castilla, 2018; Jakiela and Ozier, 2016). Engaging husbands may provide support to women to achieve higher economic returns but may also induce greater conflict (Davis and Harveston, 2001). In this study we will examine the impact of the programs on women's economic outcomes covering enterprise-level outcomes such as sales and profits, as well as intrahousehold bargaining power through a decision-making index, time use on care and household chores, and individual well-being as secondary outcomes.

The socioemotional skills interventions were delivered through classroom-based and athome sessions between October 2021 and December 2022 in all 3 participating cities (Addis Ababa, Hawassa and Bahir Dar).⁶ The curriculum incorporated modules on developing an entrepreneurial mindset, each introducing tools to cultivate self-confidence and future orientation. In partnership with the implementing partner we helped revise the training curriculum to include modules that could be offered to the women entrepreneurs with male partners. These modules focused on demonstrating behaviors for effective communication

⁶Note the sample is made up of female current business owners who are married across 3 cities in Ethiopia.

and building empathy, exploring the value of the wife's business, mapping her business path, and identifying new resources. These were identified as areas in which husbands can play a role in supporting their wives and unlocking opportunities for business growth (Wolf and Frese, 2018). The follow-up survey planned in June 2023 will be approximately 1-1.5 years after the socioemotional skills trainings were implemented. At follow-up both the female respondent and her male partner will be surveyed.

The remainder of this pre-analysis plan is organized as follows. Section 2 describes the research design including intervention details, outcomes, sources of data and hypotheses to be tested, while Section 3 describes the empirical strategy.

2 Research Design

2.1 Basic methodological framework

The experimental design is a stratified randomized controlled trial (RCT) impact evaluation of the mindset-oriented skills training and a couples component. Female firm owners who are married will be divided into groups, with individual random assignment stratified by city geographic location, whether the spouse of the female is also a business owner and her education:

- T1: Treatment 1: group receives the ScaleUp! program at DOT Business Development Service (BDS) centers and 3 in-home sessions for an individual specific curriculum to women entrepreneurs alone.
- T2: Treatment 2: group receives the ScaleUp! program at DOT Business Development Service (BDS) centers and 3 in-home sessions for a couples' specific curriculum to women entrepreneurs plus their male partners.
- C: Control Group: Receives no training.

The treatment arms are mutually exclusive. Comparing average outcomes for the treatment and control group arms post-intervention will provide rigorous evidence on whether each program can generate impact.

2.2 Hypotheses

The study will examine how each program affects business performance and productivity, measuring key enterprise-level outcomes such as annual and monthly profits and sales, capital investment, employment, and hours worked. It will also examine changes in the business owner's self-reported relationship quality, household income, socioemotional skills and decision-making within the household. The theory behind the couples component is that addressing intra-household constraints and encouraging greater support from husbands leaves the participant with a greater ability to reap returns from the mindset-oriented training. This leads to an improvement in business practices, and/or increased women's decision-making power and agency within their household. This in turn improves business performance, making them and their household wealthier.

There are four key hypotheses to test:

<u>Hypothesis 1</u>: Neither the ScaleUp! mindset-oriented business training (T1) nor the combination with a couples' component (T2) has an impact on economic outcomes, well-being outcomes, marital relationship quality and self-confidence.

<u>Hypothesis 2</u>: Neither the ScaleUp! mindset-oriented business training (T1) nor the combination with a couples' component (T2) has an impact on intra-household resource sharing, decision-making power and sharing of household responsibilities.

<u>Hypothesis 3</u>: The ScaleUp! mindset-oriented business training (T1) and combination with a couples' component (T2) has no differentiated impact on relationship quality, intra-household decision-making power, economic outcomes, socioemotional skills and well-being outcomes. <u>Hypothesis 4</u>: The impact of either treatment arm will not vary with gender attitudes and norms, business practices and previous experience with entrepreneurship training at baseline.

2.3 Outcome variable(s)

The key outcome variables are listed in Appendix A.5. The primary outcomes organized by category are listed in Table 5, the secondary outcomes are in Table 6 and the potential mediator variables are in Table 7.

Our primary outcomes are enterprise-level outcomes (e.g. profits, sales and employees); and marital relationship quality. For most of the monetary variables such as profits and sales we will use the inverse hyperbolic sine (IHS) transformation and include the mean of the outcome variable for the control group in Ethiopian Birr in levels at the bottom of the tables. We will test for the sensitivity of our results on profits and sales to outliers by estimating winsorized versions of these variables at the 99th percentile.

We also include socioemotional skill outcomes such as indices measuring generalized selfefficacy, self-confidence and personal initiative. The endline survey will be approximately 1.5 hours conducted in the respondent's business or household and will target the full sample of 987 respondents. An additional short survey module (45 minutes) will be conducted with the male spouse.

2.4 Intervention(s)

2.4.1 Program Details

The World Bank's Africa Gender Innovation Lab and Digital Opportunity Trust (DOT) collaborated to design a customized mindset-oriented entrepreneurship training for business owners interested in expanding their businesses. The program includes six classroom-based and coaching sessions that need to be completed over 6 months, half of which take place at the participants' preferred location, such as their home or business premises. These trainings are led by trained Business Development Service (BDS) extension workers. The training program is designed to help entrepreneurs address their specific challenges to improve their business performance. The training program leveraged the existing DOT Scale-Up! training curriculum for the training sessions delivered at DOT's training centers. A new curriculum was designed to guide the home-based sessions that involved both training the entrepreneur alone and a couples' component that involved training the entrepreneur with her spouse.

The program invited a randomly selected half of the women entrepreneurs' spouses to participate in the couples' specific training sessions. In this group (T2) male partners were invited to participate in three home-based sessions that focused on exploring the value of the wife's business, mapping her business path, creating shared solutions, and listing relevant resources. These are identified as the main aspects in which male partners can play a crucial role in unlocking opportunities for entrepreneurial growth for their spouse/partner. The couples' training had the following components in its underlying design philosophy:

- Model behavior this component emphasizes the trainer role in modeling behavior instead of lecturing. This is done to achieve effective communication between couples through consistent modeling and practice during the training sessions. The idea is that couples will learn best through observing and experiencing positive communication behaviors and to practice empathy.
- Focus on success this helps cultivate trust and build the entrepreneur's self-confidence.
- Co-creation encourages joint collaboration and reduces conflict.
- The business owner is the decision maker while the male partner is encouraged to think through challenges and solutions along with the woman entrepreneur, she is the primary decision maker on matters relating to her business.

A total of 27 Business Development Extension workers were given five days of Training of Trainers to familiarize themselves with the curriculum content and to cultivate the required skill set to guide and moderate the sessions. The initial roll-out of the intervention was delayed due to a new wave of the coronavirus in April 2021. A two-day refresher training was provided to the trainers before the eventual roll-out of the intervention in October 2021.

Prior to the start of the training, the Business Development Extension workers conducted a Business Health Assessment (BHA) to do a needs-assessment to understand the women entrepreneurs' opportunities and challenges. The extension workers use this opportunity to cultivate rapport with the training participant and to set clear expectations about the training experience. The BDS extension workers scheduled time for the first session of the training after filling out the assessment.

The first three sessions were conducted within the home. The women who were enrolled in the couples' sessions invited their husbands to take part in the sessions. Each training session lasted 120 minutes, with the first 30 minutes dedicated to greeting, reviewing homework, and setting expectations for the session. The trainers were in pairs of two to lead the training where each pair had at least one female trainer to help minimize any possible risk of conflict.

The implementation of the program faced a few challenges. Despite the screening and baseline surveys that checked eligibility and secured informed consent, some participants were either unreachable or refused to participate in the program. Some women also dropped out of the training program after attending a few sessions. Among the reasons for refusal and dropping out are shortage of time, familiarity with the training content, and partner unwillingness to participate. The GIL team built a monitoring tool to observe the implementation progress in real-time and proactively responded to challenges. This entailed additional outreach to encourage women to finish the training program.

2.4.2 Training Take-up Rates

The average take-up rate of the training across all 3 cities was 63% (for all sessions).⁷ This is relatively high compared to other business training impact evaluations (McKenzie, 2020). The city breakdown shows variation in take-up rates across the cities with the highest take-up rate (97%) in Hawassa and lowest (40%) in Addis Ababa. On average, we find a significant difference in training completion rates across the T1 (70%) and T2 treatment arms (55%). In Table 3 in the Appendix we show the correlates of take-up by estimating differences in base-line characteristics between those who took up the training and those who did not. Among those who take-up the training we find no differences between T1 and T2 in observable characteristics. More specifically, we find no significant differences in their marital quality or business characteristics, with the exception that women who attend in T2 are more likely to be in retail than women who attend in T1. A further discussion is presented in the Appendix.

 $^{^{7}}$ A total of 73% of those invited to attend the training attended at least one sessions.

Sample	Take-Up (at least one and all sessions)	Treatment Group (%)	T1 (%)	T2 (%)
		(1)	(2)	(3)
Full Sample	At least one training session	73	78	67
(n=657)	All training sessions	63	70	55
By City Summary				
Addis Ababa	At least one training session	58	68	49
(n=365)	All training sessions	40	54	26
Bahir Dar	At least one training session	78	76	80
(n=89)	All training sessions	78	76	80
Hawassa	At least one training session	97	98	96
(n=203)	All training sessions	97	97	96

Table 1: Training Take-up Rates

Notes: Take-up rates calculated using administrative data collected by the implementing partner. Percentages are calculated with respect to the total number assigned to each treatment arm (T1 328; T2 329; Treatment 657).

2.5 Impact Evaluation Design and Randomization Strategy

This impact evaluation is an individual-level randomized controlled trial (RCT) design, to identify the effects of mindset-oriented business training and a couples' component. The RCT participants in the control group will not be offered any skills training through DOT for the study period. The use of randomization will allow us to attribute differences between groups to the mindset-oriented skills intervention itself. Comparing outcomes for the treatment and control group arms will provide rigorous evidence on whether this program can generate impact.

The randomization is stratified by city, whether the respondent's spouse is a business owner, and whether the respondent obtained tertiary education. In each stratum, the sample is randomly assigned to one of the treatment arms. We randomly allocate eligible participants into T1 (1/3), T2 (1/3), and C (1/3). The impact of T1 (mindset-oriented skills training only) will be assessed by comparing T1 outcomes to C outcomes while the marginal impact of T2 (mindset-oriented skills training + couples' component) will be estimated by comparing T2 outcomes to T1 outcomes. The combined impact of the combination of mindset-oriented skills training + couples' component will be estimated by comparing T2 outcomes to C outcomes. This experiment will enable us to identify the impact of offering mindset-oriented skills; plus the marginal impact of the couples' component to female business owners.

2.6 Sample

The unit of analysis is at the individual-level and the firm-level.⁸ Data for this impact evaluation will be collected through quantitative tools such as survey instruments, administrative data (from project Monitoring and Evaluation systems), and qualitative interviews. The research team develops the questionnaires for the various surveys and provides guidance for field data collection. A data collection firm will be hired to administer the individual and enterprise surveys for each of the survey rounds. The role of the firm is to select and train enumerators, collect the data based on the questionnaire provided by the research team and process the data. The data is analyzed by the research team.

Eligible candidates were identified through a screening survey conducted within a sample pool of potential participants collated from the implementing partner's registry of training graduates (DOT's StartUp! and ReachUp! entrepreneurship trainings) and from the Women's Entrepreneurship Development Project's (WEDP) client registry. The goal of sampling from these lists was to find entrepreneurs who may have already taken foundational level entrepreneurial training before and were interested in a more higher level training to scale-up their businesses. From this list, individual sample eligibility was determined based on the following study criteria:

- Owns an operational business
- Married
- Lives in the study sites
- Is interested in the training program

To gather tracking information and data on eligibility criteria, we conducted a phone-based screening survey that targeted potential study participants in Addis Ababa, Bahir Dar, and Hawassa. A total of 13,015 names with phone numbers were identified and screening calls were made over two survey rounds. The first round was in March 2021 followed by the second round in July 2021. Among those in the screening list, 35 percent of the women came from the DOT graduates roster, while the remaining 65 percent came from the WEDP client registry. The enumerators were able to phone and reach 10,284 of the women on the screening list, with each screening interview lasting an average of 15 minutes.

Once eligibility was determined, a longer face-to-face baseline survey was conducted. The baseline survey was conducted in two rounds, with the first round taking place in August - September 2021, and the second round in December 2021 - January 2022. The

⁸The respondents are individuals who are all female business owners. Many of the attitudinal and skills outcomes are collected at the individual-level and we are interested in a number of firm-level outcomes.

baseline interviews took 90 minutes on average. Out of 1,645 women who were screened into the program, surveys from 1,144 were successfully completed. Due to the uncertainties at the time of data collection around the COVID-19 pandemic and conflict, approximately 14 percent of the women entrepreneurs reported having closed their business permanently or temporarily with no plans of re-opening in the coming two months at the time of baseline. These businesses were excluded from the randomization. In total 987 women entrepreneurs were included in the impact evaluation and were randomized into the three treatment arms.

At baseline, the average study participant is 38 years old with eight years of entrepreneurial experience, has three children and resides in a household of six people. Nearly half (47%) of the women in our sample have tertiary education. More than 40% of the women in the study operate in the wholesale/retail trade sector, followed by 17% who are engaged in the hotel, cafe, and restaurant business sector. Approximately 58% of the firms report themselves to have started the business because of an opportunity rather than out of necessity. The average firm hires 3 employees, generates 56,561 Ethiopian Birr in monthly revenues, and earns 11,269 Birr in monthly profits (winsored at the 99%). 74% report that they started the business by themselves, 10% jointly with their spouse, 6% solely by the spouse, and 6% jointly with others.

2.6.1 Sample Size and Power Calculations

Power calculations were conducted to determine the minimum sample size required to detect a treatment effect of 0.2 standard deviations over the control mean at 80% power. Power calculations were based on the following assumptions:

- Survey rounds: one baseline survey and follow-up survey will be conducted.
- Variation in outcome measures: the ratio of the standard deviation to the mean for both treatment and control group often differs by variable type. While variables tied to earnings and consumption are particularly noisy, past studies indicate that (1) standard deviations for measures of socioemotional skills are far lower than other outcomes, and (2) it may be important to detect smaller effect sizes. As socioemotional skills are key to this intervention, and new measures will be utilized, selected sample sizes are particularly conservative. Thus, Table 4 indicates required minimum sample sizes for different variable types. For business outcomes we assume the standard deviation to the mean for both treatment and control group is calculated using a ratio of 0.8; and for socioemotional skills a ratio of 0.25 is assumed.
- Correlation across survey rounds: the correlation in the outcome variable between baseline and follow-up survey is 0.2. We assume constant autocorrelation across the

pre- and post-follow up surveys. This is a conservative estimate given the examination of similar studies in the literature (McKenzie and Woodruff, 2013). The assumption of low auto-correlation in the outcome variable is sensible given that business outcomes such as profits and sales exhibit low correlation over time and that most beneficiaries will start up new businesses, which implies significant changes in business outcomes between baseline and endline.

• Take-up: 60% take-up was achieved. However, in determining sample size for the study we assumed 70% take-up.

Based on the power calculations, we chose a sample size of 325 per treatment arm. The stratification by city helps to reduce noise by accounting for some of the (location dependent) variance in outcome measures. The proposed sample size will allow for an assessment of the overall impact of the mindset-oriented business training on beneficiaries, and the marginal impact of a couples' component.

2.7 Data collection and processing

The main source of data for this impact evaluation are quantitative surveys administered to the business owner. These surveys will be completed at two points in time: one baseline (completed in June-July 2020) and follow-up survey (endline) to be conducted in July-August 2023. The baseline survey was conducted in two phases - phase 1: August 10, 2021 to September 7, 2021; and phase 2: December 8, 2021 to January 29, 2022 - to coincide with the roll-out of the training.⁹ Data were collected in private from each respondent using trained enumerators and informed consent from respondents is collected before the surveys begin.

In the <u>baseline survey</u> we collected data on personal characteristics of the respondent (demographic characteristics), employment and income status, quality of the relationship with their spouse, and households demands including providing childcare, time use and household chores. Respondents were also asked about decision-making in the household, gender perceptions (gender attitudes and gender roles), and gender norms.

The <u>endline survey</u> is planned to start in July 2023. The follow-up survey will collect information from the business owners on the areas listed above, as well as information on the sharing of household duties, resource sharing within the household, spousal support in the business, decision-making power, business practices and behaviors linked to socioemotional

 $^{^{9}}$ A total of 1,144 surveys were collected at baseline. However, 157 businesses were temporarily closed at the time of the baseline and therefore not included in the impact evaluation randomization.

skills - goal setting, searching for opportunities, negotiation, collaboration; and training participation.¹⁰ Measures will also be collected directly from the spouse of the female respondent on a number of key outcomes. For example, we will explore whether there are any treatment impacts on husband's business performance, marital satisfaction and time spent on work and domestic tasks as reported directly by the husband. The spousal survey will also help understand whether the husband's perceptions align with his wife's responses.

In the Appendix we present the full set of outcomes, along with descriptions and details on construction.

3 Empirical analysis

3.1 Statistical method(s) and statistical model

We estimate the intention-to-treat (ITT) impacts. We will use an analysis of covariance (ANCOVA) estimator to assess the impact of the mindset-oriented business training and any marginal impacts of the couples' component on outcomes of interest for which we have both baseline and follow-up data.¹¹ We estimate the treatment impact for individuals in the following regression specification:

$$Y_{i,t} = \beta_0 + \beta_{T1} Scale U p_i + \beta_{T2} Couples Scale U p_i + \beta_3 Y_{i,0} + \beta_4 X'_{i,0} + \lambda_s + \varepsilon_{i,t}$$
(1)

 $Y_{i,t}$ is the outcome variable for individual *i* measured at time t (t = 1 at endline posttreatment), and $Y_{i,0}$ is the baseline value of the outcome variable. *ScaleUp* is a dummy variable for random assignment to the T1: mindset-oriented training, and *CouplesScaleUp* is a dummy variable for random assignment to the T2: mindset-oriented training combined with a couples' component. β_{T1} and β_{T2} will measure the treatment effects relative to the control group (i.e. those who were not assigned to receive any training). $X'_{i,0}$ is a vector of baseline controls, λ_s are randomization strata fixed effects, and $\varepsilon_{i,t}$ is the error term. We cluster standard errors by the randomization strata which determined assignment to treatment. We will report the estimates and significance for $\beta_{T1} = \beta_{T2}$ to test the null hypothesis that there is no difference in the effect of the *ScaleUp* and *CouplesScaleUp* trainings.

For outcome variables that were only collected during the endline survey, we will rely on

¹⁰We use administrative data from the implementing partner's monitoring and evaluation activities to serve as a robustness check for program participation.

¹¹The ANCOVA estimator typically has more statistical power than a difference-in-differences estimator (McKenzie, 2012).

the random assignment of treatment status and use ordinary least squares (OLS) estimation as outlined in equation 2 to compare outcomes for treatment and control groups.

$$Y_{i,t} = \beta_0 + \beta_{T1} Scale U p_i + \beta_{T2} Couples Scale U p_i + \beta_3 X'_{i,0} + \lambda_s + \varepsilon_{i,t}$$
(2)

Equations 1 and 2 will provide the intention-to-treat (ITT) estimates, which is the effect of being assigned to attend the T1 or T2 training sessions among the sample.

We will also conduct several robustness checks for our main treatment results: in the regression analysis we will control for a **social desirability scale (SDS)** to examine if any treatment effects are driven by responding with a socially desirable answer.¹² We will include a set of baseline characteristics that are unbalanced across treatment and control groups at baseline and a set of core demographic variables such as age and marital status. We will also test whether effects are robust to the inclusion of additional control variables using the **double-LASSO-selected controls** procedure of Belloni et al. (2014).

3.1.1 Outliers

For variables measured as a value, such as household income or profits, we will use winsorized versions of these variables at the 99th percentile. Where appropriate, we will apply the inverse hyperbolic sine (IHS) transformation to variables measured as a value.

3.1.2 Missing Values

No imputation for missing data from item non-response at follow-up will be performed. We will check whether item non-response is correlated with treatment status following the same procedures as for survey attrition, and if it is, construct bounds for our treatment estimates that are robust to this.

3.2 Heterogeneous effects

For the heterogeneity analysis, we will look at the distribution of effects for different subgroups. We will estimate heterogeneous treatment effects by interacting treatment status with the outcome of interest in equation 1 (for outcome variables collected at both baseline and follow-up) and equation 2 (for outcome variables collected only at endline). To test interaction effects, we will utilize multiple variable regression analyses and include the

 $^{^{12}}$ We use the 16-item short form of the Balanced Inventory of Desirable Responding (BIDR) proposed by Hart et al. (2015), which is shown to be a viable substitute for the 33-item Marlowe-Crowne scale.

product of variables centered around their median value (where appropriate) as the interaction term (Aiken et al., 1991). We expect to observe differential effects along the following characteristics at baseline:

- Marital relationship quality: Respondents with a better initial relationship with their spouse are likely to reap greater benefits from the couples' components of the training.
- Previous experience with a mindset-oriented training: Respondents who have already taken an entrepreneurship training in the past may more easily adopt the learned skills from the treatment and observe greater improvements in their business outcomes.
- Socioemotional skills (e.g. self-efficacy): Women entrepreneurs with a lower stock of social and emotional skills at baseline may get more from the mindset-focused training content.

3.3 Multiple hypothesis testing

Our survey instrument includes several questions related to a single skill, behavior or dimension, therefore we account for multiple hypothesis testing in the following ways:

1. Index measures: We aggregate the primary outcome variables into an index or composite variable. We use outcome variable indices for several outcome variables including the main business outcomes and socioemotional skills variables. These indices combine multiple measures to reduce the total number of tests conducted. We can compute the average standardized effects where we divide each variable by its standard deviation and take the average of these normalized variables Kling et al. (2007) or else, normalize the values and do a principal component analysis with them to construct the index (Anderson, 2008).

2. Q-values: We can adjust the statistical test for each hypothesis and present sharpened False Discover Rate (FDR) q-values which uses a simple method proposed by Benjamini et al. (2006) to calculate the smallest level of significance at which the null hypothesis would be rejected as described in Anderson (2008). The Benjamini et al. (2006) sharpened twostage q-values will be presented in our main regression tables in square parentheses below standard errors.

3.4 Mediation Analysis

We will conduct mediation analysis to understand how much of the total treatment effect is due to: (i) an indirect effect operating through one or several observed mediators, and (ii) the direct effect of the intervention not captured by these observed mediator(s). In the table of outcomes in Appendix A we list several observable variables that are expected potential mechanisms which mediate the training-success relationship. We are particularly interested in using mediation to test whether socioeconomic outcomes can plausibly be explained by changes in the intrahousehold dynamics. We will calculate the Average controlled direct effect (ACDE) which refers to the effect that the interventions would have on an outcome if the mediators are fixed at some particular value.

To conduct mediation analysis we will follow the two step procedure as described in Acharya et al. (2016). Step 1: regress the outcome on the mediator, the treatment variable(s), a set of controls, and the interaction between the mediator and all other variables. Obtain the predicted value of the outcome fixing all mediators to zero. This is the 'demediated' outcome. Step 2: regress the demediated outcome on the treatment variable(s). The coefficients from this regression give the estimate of the average conditional direct effect (ACDE). We will use a nonparametric bootstrapping procedure for the standard errors.

3.5 Variations from the intended sample

3.5.1 Threat to internal validity: Survey attrition

Survey attrition in follow-up surveys is a risk where the individuals will be unavailable or not found at the time of the follow-up survey. Given the research team's experiences of collecting data in Ethiopia and the thorough tracking information collected, we expect the level of attrition to be no more than 15% of the total sample size i.e. a minimum of 85% of the study sample will be resurveyed at follow-up.

If attrition is random, it does not introduce bias but it affects power. If attrition is non-random (i.e. correlated with treatment), it may generate a bias. We will test whether survey attrition is related to treatment status using the following equation:

$$A_i = \beta_0 + \beta_{T1} Scale U p_i + \beta_{T2} Couples Scale U p_i + \beta_3 X'_{0i} + \lambda_s + \varepsilon_i \tag{3}$$

 A_i represents whether individual *i* attrited from the study, *ScaleUp* and *CouplesScaleUp* are the treatment dummy variables. Thus, β_{T1} and β_{T2} will reflect whether assignment to treatment T1 and T2 significantly affects the likelihood of an individual attriting from the survey, respectively. X'_{0i} is a set of baseline controls. λ_s are randomization strata fixed effects, and ε_i is the error term.

Additionally, we will test for the joint effect of the coefficient on the interactions to see if attrition is differential across treatment arms. If treatment status does not affect survey attrition at the 5 percent significance level, we will not adjust the estimates for attrition. If treatment status does have a statistically significant effect on survey attrition, we will test the robustness of our results using Lee bounds (Lee, 2009) and Inverse Probability Weighting which, in effect, re-weights the selected sample in order to make it representative of the population.

3.5.2 Threat to internal validity: Partial compliance

In addition to estimating the ITT effects shown in equation 1 and equation 2, we will also estimate the treatment-on-the-treated (TOT) effect using instrumental variable (IV) estimation to estimate the local average treatment effect (LATE). The LATE can be interpreted as the average treatment effect (ATE) for compliers (i.e. those assigned to the treatment group who actually attend the trainings and those in the control group who do not receive treatment). We will instrument attendance in the training with the random assignment to the treatment groups. This estimate will enable us to control for non-compliance with treatment assignment as not everyone who is offered to attend the training attends all sessions (70% take-up for T1 and 55% take-up for T2).

$$Y_{1i} = \beta_0 + \beta_{T1} AttendedScaleUp_i + \beta_{T2} AttendedCouplesScaleUp_i + \beta_3 X'_{0i} + \lambda_s + \varepsilon_i \quad (4)$$

Where AttendedScaleUp and AttendedCouplesScaleUp are dummy variables indicating whether the respondent attended the training sessions, respectively. All other variables are the same as in equation 1. We use the assignment to training as an instrument for attending the training sessions. The first stage IV regressions are:

$$AttendedScaleUp_i = \gamma_0 + \gamma_1 AssignedScaleUp_i + \gamma_3 X'_{0i} + \lambda_s + \varepsilon_i \tag{5}$$

$$AttendedCouplesScaleUp_i = \gamma_0 + \gamma_1 AssignedCouplesScaleUp_i + \gamma_3 X'_{0i} + \lambda_s + \varepsilon_i \qquad (6)$$

We will use the predicted values from these regressions in the second stage IV regression, which is specified in equation 7.

$$Y_{1i} = \beta_0 + \beta_{T1} Attended \widehat{ScaleUp}_i + \beta_{T2} Attended \widehat{CouplesScaleUp}_i + \beta_3 X'_{0i} + \lambda_s + \varepsilon_i \quad (7)$$

The LATE is only valid under the assumption that the very act of being invited to the trainings has no impact on outcomes even if you do not end up attending the training. Since for most respondents this assumption is likely to hold true we will estimate the LATE in addition to the ITT and present the results in an Appendix.

4 Administrative information

4.1 Funding

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4.2 Ethics approval

All necessary ethics approvals are in place. Institutional Review Board (IRB) approval was obtained from Ethiopian Society of Sociologists, Social Workers and Anthropologists (ESSSWA) with approval number ESSSWA/L/AA0238/21.

4.3 Declaration of interest

No conflicts of interest to declare.

4.4 Acknowledgments

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A Appendix

A.1 Randomization Balance Table

Table 2 shows that the treatment assignment was balanced across C, T1 and T2 on observable characteristics, except for a few variables such as: monthly revenues in the business (C vs T1) and being in the retail sector (T1 vs T2). The normalized differences suggest that any statistically significant differences are small in magnitude. Importantly, the F-test for joint significant of covariates by treatment assignment is not significant (see bottom of Table 2) suggesting the randomization created similar groups based on observables.

A.2 Correlates of Training Take-Up

In Table 3 we show the correlates of take-up by estimating differences in baseline characteristics between those who took up the training and those who did not (by treatment status T1 and T2). Table 3 column 1 indicates the characteristics of those in T1 who were invited but did not attend the training, and column 3 indicates those in T1 who did attend; and in (1)-(3) we show the test for a difference in the means across these groups. On average, those who attend the training in T1 are more likely to be an opportunity entrepreneur, have a spouse who is a business owner, and have higher scores on a measure of personal initiative, relative to those who did not attend the training. Table 3 column 2 indicates the characteristics of those in T2 who were invited but did not attend the training, and column 4 indicates those in T2 who did attend; and in (2)-(4) we show the test for a difference in the means across these groups. On average, those who attend the training in T2 are slightly younger, more likely to have taken an entrepreneurship training previously, household is less likely to own a car, more likely to be an opportunity entrepreneur, and have higher scores on a measure of personal initiative and entrepreneurial identity, relative to those who did not attend the training. The F-test at the bottom of Table 3 suggests that overall the characteristics of those who did not attend T1 and T2 ((column (1)-(2)) are balanced. Similarly the characteristic of those who attended T1 and T2 (column (3)-(4)) are balanced.

A.3 Power Calculations MDEs for Key Outcomes

In Table 4 we present the minimum detectable effect (MDE) sizes using data from previous impact evaluation studies. Our study sample size was selected assuming 70% training takeup and is comparable to estimates used in the Personal Initiative training in Togo (Campos et al., 2017).

	(1)	(2)	(3)						
	Control	T1 - Scale up! Training + individual training curriculum	T2 - Scale up! Training + couples training curriculum	t-test difference			Norm	alized diffe	erence
Variable	Mean/SE	Mean/SE	Mean/SE	(1)-(2)	(1)-(3)	(2)-(3)	(1)-(2)	(1)-(3)	(2)-(3)
Household and demographic characteristics									
Age of respondent	38.179	37.689	38.264	0.490	-0.086	-0.575	0.065	-0.011	-0.073
	[0.411]	[0.426]	[0.445]	0.010	0.001	0.010	0.010	0.001	0.010
Household size	[0 113]	[0 103]	0.192	-0.019	-0.001	0.016	-0.010	-0.001	0.010
Number of children	2.606	2.731	2.731	-0.125	-0.125	0.000	-0.087	-0.084	0.000
	[0.077]	[0.081]	[0.086]						
Any children below 5 years (0-1)	0.421	0.454	0.404	-0.033	0.017	0.050	-0.067	0.034	0.101
	[0.027]	[0.028]	[0.027]						
Primary education (0-1)	0.073	0.080	0.067	-0.007	0.005	0.012	-0.026	0.021	0.048
	[0.014]	[0.015]	[0.014]						
Tertiary education (0-1)	0.467	0.473	0.468	-0.006	-0.001	0.004	-0.012	-0.003	0.009
	[0.028]	[0.028]	[0.028]	0.047	0.001	0.046	0.004	0.000	0.000
Taken an entrepreneurship training before (T = Yes)	0.455	0.502	0.450	-0.047	-0.001	0.046	-0.094	-0.002	0.092
Household owns a car (1=Yes)	0.315	0.326	0 334	-0.011	-0 019	-0.008	-0 024	-0 041	-0.017
	[0.026]	0.026	[0 026]	0.011	0.015	0.000	0.024	0.041	0.017
Winsorized household income (ETB)	40073.736	36537.793	35515.647	3535.944	4558.089	1022.145	0.072	0.094	0.022
	[2806.408]	[2587.401]	[2539.087]						
Business characteristics									
Opportunity Entrepreneur (1=Yes)	0.588	0.578	0.566	0.010	0.022	0.012	0.020	0.045	0.025
	[0.027]	[0.027]	[0.027]						
Jointly owned business with husband (0-1)	0.076	0.061	0.085	0.015	-0.009	-0.024	0.059	-0.034	-0.093
Operates in the rateil and whelevels easter (0, 1)	[0.015]	[0.013]	[0.015]	0.040	0.020	0.070++	0 101	0.050	0.150
Operates in the retail and wholesale sector (0-1)	0.412	0.303	0.441	0.049	-0.029	-0.078^^	0.101	-0.058	-0.159
Monthly revenues (past 30 days) (FTB)	41563 021	33769 549	36673 040	7793 472*	4889 982	-2903 491	0 146	0 089	-0.058
	[3186.577]	[2653.051]	[2822.618]		10051702	2700.171	0.1.10	0.007	0.000
Monthly profit (ETB)	9812.970	8982.073	8787.599	830.897	1025.371	194.474	0.067	0.084	0.016
	[687.920]	[669.706]	[654.990]						
Capital Value (ETB)	71350.606	82371.662	83479.635	-1.10e+04	-1.21e+04	-1107.974	-0.071	-0.077	-0.007
	[8062.965]	[9029.548]	[9290.219]						
Number of employees (ETB)	1.982	1.957	1.915	0.025	0.067	0.042	0.009	0.023	0.015
Sasia amatianal akilla	[0.156]	[0.152]	[0.158]						
Self efficacy score	4 249	4 269	4 236	-0.020	0.013	0.033	-0.037	0.024	0.061
	[0.030]	[0.030]	[0.030]	0.020	0.010	0.000	0.007	0.021	0.001
PI - personal growth	4.444	4.449	4.472	-0.005	-0.028	-0.023	-0.009	-0.055	-0.047
	[0.029]	[0.027]	[0.026]						
PI - proactivity	4.320	4.353	4.335	-0.033	-0.015	0.018	-0.069	-0.031	0.037
	[0.026]	[0.027]	[0.027]						
Entrepreneurial identity	4.248	4.255	4.278	-0.007	-0.030	-0.023	-0.009	-0.041	-0.031
Married equals obstractoristics	[0.043]	[0.043]	[0.038]						
Marriage quality score	26 755	27,311	27 468	-0.556	-0 714	-0 157	-0.093	-0 117	-0.026
	[0.333]	[0.328]	[0.341]	0.000	0.7.1.1	0.107	0.070	0	0.020
Cooperation score	1.103	1.030	1.088	0.073	0.015	-0.058	0.103	0.020	-0.082
	[0.041]	[0.036]	[0.041]						
Business owner or self-employed spouse	0.509	0.515	0.514	-0.006	-0.005	0.002	-0.012	-0.009	0.003
	[0.028]	[0.028]	[0.028]						
Hours worked typical day (Number 0-24)	9.282	9.235	9.306	0.046	-0.024	-0.070	0.016	-0.009	-0.026
Haura and abaras tunias! (humber 0.04)	[0.157]	[0.157]	[U.143]	0 1 1 0	0.007	0.001	0.04	0.054	0.010
nours care and chores typical day (Number 0-24)	3.∠/3 [0 100]	3.391 [0 10/1]	3.37U [0.007]	-0.119	-0.097	U.UZ I	-0.064	-0.054	0.012
Spouse hours worked typical day (Number 0-24)	8 256	8,360	[0.097] 8 170	-0 103	0.086	0 189	-0 030	0 024	0.053
	[0.191]	[0.196]	[0.202]	0.100	0.000	007	0.000	0.02-	0.000
Spouse hours care and chores typical day (Number 0-24)	1.037	1.097	1.115	-0.060	-0.077	-0.017	-0.044	-0.053	-0.012
	[0.079]	[0.074]	[0.084]						
Number of Observations	330	328	329						
F-test of joint significance (p-value)				0.705	0.878	0.963			
F-test, number of observations				637	643	638			

Table 2: Randomization Balance Table

The value displayed for t-tests are the differences in the means across the groups.

The value displayed for F-tests are p-values.

Fixed effects using variable city are included in all estimation regressions.

***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

	(1)	(2)	(3)	(4)						
	T1 + Did not complete	T2 + Did not complete	T1 + Completed	T2 + Completed			t-test d	ifference		
Variable	Mean/SE	Mean/SE	Mean/SE	Mean/SE	(1)-(2)	(1)-(3)	(1)-(4)	(2)-(3)	(2)-(4)	(3)-(4)
Household and demographic characteristics										
Age of respondent	37.433	39.114	37,797	37,561	-1.681*	-0.364	-0.128	1.318	1.553*	0.235
	[0.638]	[0.648]	[0.542]	[0.609]						
Household size	5 856	5 638	5 791	5 921	0 218	0.064	-0.066	-0 154	-0 284	-0 130
	[0 159]	[0 151]	[0 130]	[0 159]	0.210	0.001	0.000	0.101	0.201	0.100
Primary education	0 103	0.054	0.070	0 079	0 049	0.033	0 024	-0.016	-0.025	-0.009
	[0.031]	[0 019]	[0 017]	[0 020]	0.049	0.000	0.024	0.010	0.020	0.005
High school	0.340	0.383	0.354	0 331	-0.042	-0.01/	0 0 0	0 020	0.051	0 022
riigh school	0.048	[0.040]	[0.022]	0.001	0.042	0.014	0.005	0.025	0.001	0.022
Provinuely taken on entrepreneurable training	[0.046]	[0.040]	[0.032]	0.551	0.001	0.007	0 110*	0 100***	0 200***	0.020
Previously taken an entrepreneurship training	0.433	0.342	[0.000]	0.551	0.091	-0.097	-0.110	-0.100	-0.208	-0.020
Usual ald sums a sec	[0.051]	[0.039]	[0.033]	[0.037]	0.007	0 107++	0 100++	0 110++	0 110++	0.000
Household owns a car	0.423	0.396	0.286	0.283	0.027	0.13/**	0.139**	0.110**	0.113**	0.002
	[0.050]	[0.040]	[0.030]	[0.034]					7500 075	
Winsorized household income	36525.773	31407.235	36542.840	38916.500	5118.538	-17.067	-2390.727	-5135.605	-7509.265	-23/3.660
	[4822.645]	[3479.464]	[3072.201]	[3628.170]						
Business characteristics										
Opportunity Entrepreneur	0.474	0.510	0.622	0.612	-0.036	-0.148**	-0.138**	-0.112**	-0.102*	0.009
	[0.051]	[0.041]	[0.032]	[0.037]						
Operates in the retail and wholesale sector	0.392	0.430	0.351	0.450	-0.038	0.041	-0.058	0.079	-0.020	-0.099**
	[0.050]	[0.041]	[0.031]	[0.037]						
Winsorized - Monthly revenues (past 30 days)	35898.062	33170.658	32875.758	39572.233	2727.404	3022.304	-3674.171	294.900	-6401.576	-6696.476
	[5033.393]	[4105.594]	[3123.642]	[3878.614]						
Winsorized - Monthly profit	8727.320	8174.497	9089.048	9295.111	552.823	-361.728	-567.792	-914.551	-1120.614	-206.063
	[1229.551]	[994.656]	[800.176]	[869.803]						
Winsorized - Capital	88859.794	94895.973	79647.208	74029.444	-6036.179	9212.586	14830.349	15248.765	20866.529	5617.763
	[16497.676]	[15663.434]	[10806.547]	[10956.554]						
Winsorized - Number of employees	1.856	2.054	2.000	1.800	-0.198	-0.144	0.056	0.054	0.254	0.200
	[0.266]	[0.264]	[0.185]	[0.191]						
Socio-emotional skills										
Self efficacy score	4.247	4.193	4.278	4.272	0.054	-0.031	-0.025	-0.085	-0.079	0.006
	[0.057]	[0.047]	[0.035]	[0.037]						
PI - personal growth	4.469	4.406	4.440	4.527	0.063	0.029	-0.058	-0.034	-0.121**	-0.086*
	[0.048]	[0.041]	[0.033]	[0.034]						
PI - proactivity	4.271	4.263	4.388	4.395	0.008	-0.117**	-0.125**	-0.125**	-0.133**	-0.007
1	[0.060]	[0.045]	[0.029]	[0.033]						
PI - Entrepreneurial identity	4 180	4 195	4 287	4 348	-0 014	-0 107	-0 168*	-0 092	-0 154**	-0.061
	[0 084]	[0.063]	[0.050]	[0 044]	0.011	0.107	0.100	0.072	0.101	0.001
Marital Couple characteristics	[0.004]	[0.000]	[0.000]	[0.044]						
Marriage quality score	26.887	27 315	27 / 89	27 59/	-0 /29	-0.603	-0 708	-0 17/	-0 279	-0 105
Marriage quality score	[0 620]	[0 521]	[0 285]	[0 442]	0.425	0.005	0.700	0.174	0.275	0.105
Cooperation score	0.060	1 020	1 056	1 1 1 1	-0.051	-0.087	-0 175*	-0.026	-0 124	-0.088
	0.909	1.020	1.000	1.144	-0.031	-0.007	-0.17 J	-0.030	-0.124	-0.000
Pupinggo owner or colf ormlayed analysis	[0.000]		0.043	[0.000]	0.047	0 100+	0.000	0.054	0.042	0.010
business owner or sen-employed spouse	0.443	0.490	0.545	0.000	-0.047	-0.102*	-0.090	-0.050	-0.043	0.012
Oh	[0.051]	[U.U41]	[U.U33]	[U.U37]						
	97	149	231	180	0 700	0.057	0.040+	0.001+-	0.000+1	0 704
r-test or joint significance (p-value)					0.730	0.05/*	0.048**	0.031**	0.003***	0./26
E-TEST DUMPER OF ODSERVATIONS					246	326	2/5	3/8	377	4117

Table 3: Training Take-up Correlates

The value displayed for t-tests are the differences in the means across the groups.

The value displayed for F-tests are p-values.

***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Ratio of SD to Mean	Effect Size in standard deviations	Variable Category	Data sources	Sample size per treatment arm	Adjustment for take-up of 80%	Adjustment for take-up of 70%	Adjustment for take-up of 60%
1.2	0.2	Income/	Nigeria LSMS 2015	363	567	741	1,008
1	0.2	Profits/Revenue/ Consumption	Nigeria YouWIN!	252	394	516	700
0.8	0.2		Personal Initiative, Togo	161	252	329	447
0.3	0.05		ELA, Uganda	363	567	741	1,008
0.25	0.05	Socioemotional	Sisters of Success, Liberia	252	394	516	700
0.2	0.05		Personal Initiative, Togo	161	252	329	447

Table 4: Minimum Detectable Effect (85% power, 5% significance level)

A.4 Baseline Statistics



Figure 1: Intrahousehold Decision Making Power at Baseline

Figure 2: Opinion Who Should Make the Decision at Baseline





Figure 3: Domestic Activities in the Past Week

Figure 4: Intrahousehold Sharing Care and Domestic Tasks





Figure 5: Types of Spousal Influence in the Women's Business

A.5 Description of Outcomes and Mediators

Table 5: Primary Outcomes

Category		Outcome	Description
P1: Business Outcomes			
	1	Enterprise revenues	Total value of sales in the last 30 days and in the last year, in Ethiopian Birr. Annual and monthly recall periods to be asked directly. Measured in levels and using the inverse hyperbolic sine (IHS) transformation - i.e. $log(y+(y2+1)1/2)$ - which can deal with zero values.
Rusiness Performance	2	Enterprise profits	Total value of profits in the last 30 days and in the last year, in Ethiopian Birr. Annual and monthly recall periods to be asked directly. Measured in levels and using the IHS transformation.
	3	Enterprise size	Total number of people currently employed in the business, not including the female respondent.
	4	Capital investment	Total value of owned and rented machinery, inventory stocks, and raw materials, in Ethiopian Birr. Measured in levels and using the IHS transformation.
	5	Business survival rate	Binary variable that indicates whether the female respondent's main business is still in operation.
D2 . Estamon i d Chan dari din	_		
P2: Entrepreneuriai Characteristics			
Socioemotional Skills	1	Entrepreneurial locus of control	 Standardized index showing whether the respondent believes that she is in control of her own future, and that she can influence outcomes through her skills and effort. Measured on a self-reported 5-point likert scale. Survey statements (adapted from Levenson, 1974): I can pretty much determine the success of my business. I am certain that I can have a significant impact on the society with my business. I am sure that I can impact sales of my business. I can pretty much determine what happens in my environment. I can change the community around me with my business. When others strs their own businesses, it si because they take me as an example of how to do it. My example leads others to be better business people.
	2	Self-confidence and self-esteem	 Standardized index showing the respondent's degree of confidence in herself and self-esteem. Measured on a self-reported 5-point likert scale. Survey statements (original items): I feel that I am a person fo worth, at least on an equal plane with others. I feel that I have a number of good qualities. All in all, I am inclined to feel that I am a failure. (reversed) I am able to do things as well as most other people. I feel I do not have much to be proud of. (reversed) I take a positive attitude toward myself. On the whole, I am satisfied with myself. I wish I could have more respect for myself (reversed) I eviating feel useless at times. (reversed) At times I think I am no good at all. (reversed)
P3: Marriage Quality	_		
Intrahousehold Relationship Quality	1	Cooperation within marriage	Index for the level of cooperation with the respondent's spouse. Answers are reported by the female respondent. Survey question (original item): Imagine the last time that you had a difficult month and did not have enough business income to rebuild your stock and also cover any household needs, what was your husband's response? 1. He gave me (more) money 2. He paid for more of the household expenditures himself than in the months before 3. He gave me a loan and I will pay him back 4. He helped me get money from somebody else Coded as 1 for each that the respondent answers in the affermative.
	2	Empathy in relationship with spouse	 Standardized index for the quality of the respondent's marital relationship. Measured on a self-reported 5-point scale. Answers are reported by the female respondent. (Note: coded as zero if not applicable) Survey questions (original items): How often did you feel appreciated by your partner? How often did you and your partner share your joys and sorrows? When you and your partner have had a disagreement, how often did they express how they felt in a calm and respectful way? When you and your partner have had a disagreement, how often did they try to see your side of things and listened carefully to what you had to say? When you and your partner have had a disagreement, when the argument got heated, how often did they leave so that you and they could calm down?
	3	Communication with spouse	Standardized index for the level of open communication between the respondent and spouse in their relationship. Measured on a self-reported 5-point scale. Answers are reported by the female respondent. (Note: coded as zero if not applicable) Survey questions (original items): 1. How often did you speak to your partner regarding employment or business? 2. How often did you speak to your partner regarding the sharing of household responsibilities?

Table 6: Secondary Outcomes

Category		Outcome	Description
S1. Economic and Household Outcomes			
	1	New business activity	Binary variable that indicates whether the female respondent has opened a new business, branch and/or expanded her market to new areas in the last 12 months.
Business Performance	2	Business survival rate	Binary variable that indicates whether the female respondent's main business is still in operation.
	3	Capital investment	Total value of owned and rented machinery, inventory stocks, and raw materials, in Ethiopian Birr. Measured in levels and using the IHS transformation.
	1	Household income	Combined income earned by all members of the household in the last 30 days, in Ethiopian Birr. Measured in levels and using the IHS transformation.
Tiousenoia weath	2	Share of income contributed to the household	Percentage of total household income solely contributed by the female respondent.
S2. Financial Instruments			
	1	Loan applications	Binary variable that indicates whether the female respondent has applied for a business loan from a bank or financial institution in the last 12 months.
Searching for Finance/Capital	2	Size of loans	Total amount currently owed from all loans that the female respondent has taken out for her business, in Ethiopian Birr. (Note: self-reported)
	3	Alternative sources of finance	Binary variable that indicates whether the female respondent has borrowed money from sources other than formal financial institutions in the last 12 months (e.g. spouse, other family members, informal savings groups).
Savings	1	Personal savings	Total value of formal and informal savings accumulated by the female respondent in the last 12 months, in Ethiopian Birr.
83. Female Individual Well-Being	_		
Marital Satisfaction	1	Index of emotional abuse	Index for whether the female respondent has experienced any emotional abuse or controlling behaviour from her husband in the last year. Coded as 1 for each that the respondent answers in the affirmative. <i>Survey statements:</i> 1. He is jealous or angry if you talk to other men? 2. He frequently accuses you of being unfaithful? 3. He does not permit you to meet your female friends? 4. He tries to limit your contact with your family? 5. He insists on knowing where you are at all times?
	2	Trust within marriage	 Standardized index for the level of trust the respondent experiences within intimate interpersonal relationships. Measured on a self-reported 5-point scale. Answers are reported by the female respondent. (Note: coded as zero if not applicable) Survey statements (original items): My partner has proven to be trustworthy and I am willing to let him engage in activities which other partners find too threatening. Though times may change and the future is uncertain, I know my partner will always be ready and willing to offer me strength and support. I sometimes avoid my partner because he is unpredictable and I fear saying or doing something which might create conflict.
	3	Intimate relationship with spouse	Categorical variable indicating the quality of of intimate interactions between the respondent and spouse. Measured on a scale of 1 (extremely devoted, placing relationship within household members above all others) to 5 (hostile, based on resentment and anger). Answers are reported by the female respondent.
	4	Satisfaction with married life	Categorical variable indicating the level of satisfaction with married life. Measured on a 5-point likert scale. Answers are reported by the female respondent. (Note: coded as zero if not applicable)
Subjective Well Being	1	Life satisfaction	Categorical variable that indicates the female respondent's overall satisfaction with her economic well-being. (Note: self-reported on a 4-point scale)
underne wen-menng	2	Satisfaction with business	Categorical variable that indicates the female respondent's overall satisfaction with her work as an entrepreneur. (Note: self-reported on a 4-point scale)
Aspirations	1	Business aspirations	Binary variable that indicates whether the female respondent expects her business to grow in the next 12 months.

Table 7: Potential Mediators

Category M1 Socioemetional Skille		Outcome	Description
Socioemotional (Intrapersonal) Skills	1	Generalized Self-Efficacy Scale (GSE)	 Standardized index where a higher score indicates higher self-efficacy. Measured on a self reported 5-point likert scale. Survey statements (Schwarzer, 1995): I can always solve difficult problems if I try hard enough. If someone is against me, I can find means and ways to get what I want. It is easy for me to stick to my aims and accomplish my goals. I an onfident that I could deal appropriately with unexpected events. Thanks to my skillful and creative thinking, I know how to handle unforeseen situations. I solve most problems if I put in the necessary effort. I can remain calm when I am facing difficulties because I can rely on my abilities to cope. When I am faced/confronted with a problem, I can usually find several solutions. I can usually handle whatever comes my way.
	2	Personal initiative and proactivity	 Standardized index showing the respondent's ability to identify opportunities and taking the initiative into realizing them. Measured on a self-reported 5-point likert scale. Survey statements (adapted from Frese et al., 1997): actively tackle problems. Whenever something goes wrong, I search for a solution immediately. Whenever there is a chance to get actively involved, I take it. I take initiative immediately even when others don't. I use opportunities quickly in order to attain my goals. Usually, I do more than I am asked to do. a marticularly good at making my ideas a reality. I excel at identifying opportunities.
	3	Personal growth	 Standardized index showing the respondent's ability to seek opportunities to improve one's self and be motivated to put these goals into action. Mrasured on a self-reported 5-point likert scale. Survey statements (adapted from Personal Growth Initiative Scale-II - Robitschek et al., 2012) 1. I seek opportunities to learn more and develop my skills. 2. I actively work to improve myself. 3. I am constantly trying to improve myself by learning new skills and knowledge. 4. I look for opportunities to improve myself personally and professionally.
	4	Entrepreneurial identity	 Standardized index where a higher score indicates a higher degree of the respondent identifying as an entrepreneur. Measured on a self-reported 5-point likert scale. Survey statements (original items): Entrepreneurship is an important part of who I am. I think of myself as someone who generally thinks about entrepreneurship.
Socioemotional (Interpersonal) Skills	5	Cognitive and emotional empathy	 Standardized index showing the respondent's ability to understand another's viewpoint or thoughts and have emotional concern for another's situation or experience, particularly within her marriage. Measured on a self-reported 5-point likert scale. Survey statements (original items): Itry to understand the perspective of my husband before making a decision that affects him. When I am upset at my husband, I usually try to imagine myself in his situation to better understand him. Before judging my husband, I try to imagine how I would feel if I were in his place. I ask questions to understand the feelings of my husband. Alternative Measure: Situational judgement tests with similar theoretical structure. Your husband wants to start a business and comes to you for advice. He is not in a good state of mind because his last business was a failure, and he is nervous about starting something new. How likely are you to: Quickly advise him that he should not start another business. Remind him that he failed last time. (You see that he is nervous about talking to you) Feel sad inside because he is troubled. Sense his feelings immediately Ask him why this business will improve his happiness.
	6	Expressiveness	 Standardized index showing the respondent's ability to explain ideas in a way that others will understand and openly expressing her opinions in an assertive manner. Measured on a self-reported 5-point likert scale. Survey statements (original items): Ishare my opinion with others without hesitation. Ishare my opinion with others without hesitation. Isak for what I need when I need it. Ithink it is good to ask for what I want. Ishare my thoughts even if others do not agree with them. Idirectly communicate what I need from others. Alternative Measure: Situational judgement tests with similar theoretical structure. The family budget has been very tight. Your husband's cousin, has been living with your family and has income, but is not paying or contributing to household expenses. You are frustrated. How likely is it that you will: Avoid saying anything as it might create conflict. Wait until your husband's cousin directly to contribute. Tell your husband's cousin about your feelings and frustrations. Tell your husband's cousin why the problem bothers you.

Table 7 cont...: Potential Mediators

Category		Outcome	Description
M1. Socioemotional Skills			
Socioemotional (Interpersonal) Skills	7	Interpersonal influence	Standardized index showing the respondent's ability to communicate in a manner that changes other's perspectives and adapting one's behavior in situationally appropriate ways to influence others, particularly within marital relationships. <i>Survey statements (situational judgment tests):</i> You want to start a new business, making banana chips with a new method. To start the business, you need your husband's support because it will affect their financial situation. Currently your husband does not want you to start the business. How likely is it that you will: a. Try to convinve him to let you start the business. b. Ask questions to understand why your husband opposes you. c. Analyze your husband's behaviour carefully, to decide the best time to convince them. d. Discuss the benefits and consequences of starting the business with him. e. Not be able to change your husband's perspective. f. Would you use any other methods to persuade your husband? g. Now imagine that your brother recently failed in his business. Would you use any other methods?
	8	Negotiation	 Standardized index showing the respondent's ability to identify one's own and other's interests during a disagreement and to change one's own behaviors, thoughts and feelings as a strategy for resolving interpersonal problems and achieving one's goals. Survey statements (situational judgement tests): Your work has become busier and you have less time for household responsibilities. If you have help at home, your income could increase! However, your husband does not want to help with cleaning or caring for the younger children. If he has extra time, he just wants to relax. How likely is it that you will: a. Accept the situation and not say anything. b. Tell him he has to do some household work and has no choice. c. Explain that if he helps, the whole family will benefit. d. Allow him to relax if he completes his responsibilities. Your unbusband that working so hard is making you very tired. Your husband says he still cannot help, and you feel hurt. f. Accept the situation al stop discussing the problem. g. Ask him to propose a solution. h. Come up with an idea for a solution that will benefit you both.
		-	
M2. Business ideas, Planning and Practices	1	Record-keeping practices	Index: Has a written business plan; Has a written annual budget; Keeps financial records. Coded as 1 for each that the business has done in the last 12 months. (Note: coded as zero if not applicable)
	2	Marketing practices	Index: Visited at least one of its competitor's businesses to see what prices they are charging; Visited at least one of its competitor's businesses to see what products he or she offers; Asked existing customers whether there are products they would like to be offered; Asked a supplier about which products are selling well in this business' industry; Looked for ways to improve marketing and advertising strategies; Advertised in any form. Coded as 1 for each that the business has done in the last 12 months. (Note: coded as zero if not applicable)
Business Practices	3	Stock control practices	Index: Negotiated with a supplier for a lower price on raw materials; Compared the prices or quality offered by its supplier's product/service with other suppliers. Coded as 1 for each that the business has done in the last 12 months. (Note: coded as zero if not applicable)
	4	Financial planning practices	Index: Analyzed if the sales of your most important product/services have increased, decreased or remained the same; Looked for additional financial resources for your business; Looked for new markets. Discussed with other entrepreneurs in her sector about production techniques, suppliers or new products. Coded as 1 for each that the business has done in the last 12 months. (Note: coded as zero if not applicable)
Business Ideas and Planning	1	Business creativity	 Standardized index showing the respondent's ability to think of unique and versatile ideas. Measured on a self-reported 5-point likert scale. Survey statements (original items): I can come up with many ideas when needed. I can go from one idea to the next until I have many options to choose from. I have ideas that are unique. My ideas are different from other people's.
	2	Introduction of new/innovative product	Binary variable that indicates whether the respondent has introduced new products/service or invested in new machinery or production methods in the last 12 months.

Table 7 cont...: Potential Mediators

Category		Outcome	Description
M3. Intrahousehold Decision-Making, Time U	se a	nd Resource Sharing	
	1	Degree of decision-making power	Index: Sole or joint decision-making power across a broad category of decisions. Activities: Money spending priorities in critical, stressful, or urgent matters within your household; Own wage or salary employment; Own business activities; Spouses' business activities; Major household expenditures (e.g. refrigerator); Minor household expenditures (e.g. food); Use of own earnings; Use of spouse's earnings. Coded as 1 for each that is applicable to the respondent. (Note: coded as zero if not applicable)
Decision-Making Power	2	Entrepreneurial autonomy	Binary variable that indicates whether the female respondent has sole decision-making power on major decisions for the business with regard to budget, large purchases and new suppliers, and/or business profits.
	3	Business interference	Measure 1: Binary variable that indicates whether the respondent's spouse has ever interfered with her business (i.e. made decisions that were not wanted) in the last year. Measure 2: Total number of disagreements between the female respondent and her spouse/partner with respect to her business over the last year.
Time Use	1	Female share of total time spent on household activities	Share of the total combined time per day spent on care and household activities between the female respondent and her husband that is solely performed by the respondent. Time per day spent on care activities (including cooking, cleaning and washing) is calculated for the female respondent and her husband separately.
	2	Sharing of household activities between female and her spouse	Index showing whether the female respondent equally shares with her husband the responsibility of household activities, or the husband bears the majority of the responsibility. Activities: Preparing food; Cleaning the house and washing clothes; Taking care of the children. Coded as 1 for each that is applicable to the household.
	1	Direct help in business from spouse	Measure 1: Binary variable that indicates whether the respondent's spouse works in her business in any capacity. Measure 2: Average number of hours in a typical week that the spouse works in the respondent's business.
	2	Help within the household from spouse	Binary variable that indicates whether the respondent's spouse is involved in any household activity, namely preparation of food, cleaning and child care.
	3	Business knowledge and advice	Binary variable that indicates whether the respondent's spouse has shared any knowledge, skills or advice in relation to her business.
	4	Business networks and contacts	Binary variable that indicates whether the respondent's spouse has introduced her to any of their own business or social networks/contacts.
Sharing of Resources within the Household	5	Emotional support from spouse	 Standardized index showing the respondent's spouse level of emotional support and encouragement in her business. Measured on a self-reported 5-point likert scale. Survey statements (original items): 1. My husband is interested in hearing about the challenges I face in running my business. 2. My husband is interested in hearing about the day to day operation of my business. 3. My husband is interested in hearing about the day to day operation of my business. 4. My husband encourages me to do well in my business.
	6	Financial support from spouse	Measure 1: Binary variable that indicates whether the respondent's spouse has ever provided financial assistance to her business, either as start-up funding or for day-to-day operations. Measure 2: Total value of financial assistance that the respondent's spouse has provided to her business in Ethiopian Birr.
	7	Impact of spousal support in business	Binary variable that indicates whether the respondent believes that her spouse's support in any form (financial, emotional, physical, advisory, etc.) has benefited her business.