Personal Initiative Skills, Gender Gaps, and Social Norms: Experimental Evidence from Rural India*

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We study whether strengthening entrepreneurial soft skills improves firm outcomes and shifts intra-household dynamics and social norms among rural entrepreneurs in the South Indian state of Tamil Nadu. We implement a gender-stratified randomized controlled trial with 2,558 entrepreneurs, evaluating a Personal Initiative (PI) training program. The intervention led to substantial improvements in firm outcomes: treated entrepreneurs increased monthly profits by 7.6% and sales by 7.4%, adopted more structured business and innovation practices, and expanded employment by hiring 22% more workers. To investigate mechanisms, we explore a novel survey on social norms and implemented a couples' behavioral game to measure spousal bargaining, enabling us to examine whether gains in personal initiative also shift household constraints that limit women's entrepreneurship.

Keywords: Social norms, gender gap in business, soft skills, household dynamics.

JEL Codes: C93, L26, J16

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1 Introduction

Microenterprises are a major source of non-farm employment in India and other LMICs, but they remain small, undercapitalized, and often low in productivity (ILO, 2019; Hsieh and Olken, 2014). These challenges are particularly acute for women, who face additional constraints shaped by restrictive gender norms. Female-owned businesses in India earn lower profits and are less likely to grow, despite representing a large untapped potential for inclusive economic growth (Klapper and Parker, 2011; Jayachandran, 2021). As a result, female entrepreneurship rates remain low in India, and women-owned businesses systematically under-perform compared to their male counterparts (de Mel et al., 2008; GEM, 2023).[1]

In this paper, we examine whether strengthening soft entrepreneurial skills can improve firm performance and shift intra-household business decisions. Non-cognitive traits such as locus of control, risk preferences, perseverance, and interpersonal skills are known to influence occupational sorting into self-employment and business outcomes (Almlund et al., 2011; Caliendo et al., 2010; Cobb-Clark and Tan, 2011; Koudstaal et al., 2016). In high-income contexts, entrepreneurship is often a deliberate career choice, but in low-income settings it may be driven by low labor demand, creating a mismatch between business demands and entrepreneurs' behavioral capacities. A recent meta-analysis finds that soft skills interventions increase profits by 15 percent on average (McKenzie, 2021). For women, these programs may also influence intra-household roles and bargaining power, which are critical but understudied channels in understanding persistent gender gaps in entrepreneurship (Bernhardt et al., 2019).

Despite growing interest, causal evidence on soft skills interventions remains limited and largely concentrated in Latin America and sub-Saharan Africa (McKenzie et al., 2021). There is no such evidence from South Asia, where microenterprises operate under two distinguishing features. First, firm and household finances are often closely

[1]The 2022 Enterprise Survey reveals that the share of female-owned firms in India is very low, irrespective of firm size. Indeed, 3.5% of small firms, 6.4% of medium-size firms, and 5.5% large firms are owned by women (WBG, 2022).

intertwined, raising concerns that studies focusing solely on business-level outcomes may underestimate total effects (Samphantharak and Townsend, 2012; Barnwal et al., 2025). Second, the social environment is deeply gendered, constraining women in ways that may limit their ability to act on training, particularly in accessing credit or expanding sales (Ashraf et al., 2019). While traditional explanations for the gender profit gap emphasize capital and market access, emerging research highlights the importance of psychological skills, intra-household dynamics, and social norms (Ubfal, 2024). This paper contributes to this growing literature by isolating the effects of a soft-skills intervention on both firm and household outcomes, and by exploring how shifts in gendered norms may mediate those effects.

We implement a gender-stratified randomized controlled trial (RCT) involving 2,558 married rural microentrepreneurs across ten districts in Tamil Nadu, India (Figure A1). The intervention consists of a 12-week Personal Initiative (PI) training program adapted from Campos et al. (2017), customized specifically for the rural southern Indian context. The training is designed to strengthen psychological traits such as proactiveness, goal-setting, persistence, and interpersonal communication. Sessions are group-based, mixed-gender, and facilitated by expert entrepreneurial program trainers, supported by local business agents based within each village.

In addition to measuring firm-level outcomes—including profits, sales, and credit access—we collect detailed data on intra-household decision-making, spousal involvement in business and financial decisions, and social norms related to women's entrepreneurship. Our design allows us to test not only the direct impacts of the training on business performance but also potential spillover effects through intra-household dynamics and shifts in gendered expectations. To evaluate the impacts of the intervention, we collected baseline data on all participating entrepreneurs and their businesses. A short tracking survey was conducted nine months after the completion of the intervention to support the tracking of entrepreneurs and the measurement of numerical data over time. In addition, at twelve months, we will conduct a comprehensive follow-up survey with entrepreneurs and their spouses, accompanied by a lab-in-the-field experiment designed to explore intra-household decision-making

dynamics.

The intervention was implemented as part of a collaboration between the researchers, the World Bank's Agricultural Global Practice, the Government of Tamil Nadu, and the NGOs Hand-in-Hand India, and Doorways GmbH. Together, we adapted the PI curriculum to fit the local context, and subsequently selected, trained, and supervised trainers to deliver the program. To mitigate concerns about attendance, training sessions were held at centrally located facilities, and participants received free transportation to the training. The implementation relied on Enterprise Community Professionals (ECPs), trained community members who serve as frontline business facilitators in rural areas under the World Bank-supported Tamil Nadu Rural Transformation Project (TNRTP), locally known as Vazhndhu Kattuvom Project (VKP). ECPs were leveraged to ensure further engagement between the training sessions, and to better promote content assimilation over the course of the study. Each village under the TNRTP project has an assigned ECP responsible for connecting entrepreneurs with financial, technical, and business resources, and strengthen rural enterprises through training and financial assistance. ECPs were engaged as assistants during sessions and therefore, provide a platform for continuation of the effects of PI skills after the completion of sessions.

The intervention took place between February and July, 2024. The take-up of the intervention was 73.5 percent, with the take-up rate being higher for females at 83 percent while for males, it was 64.2 percent. Conditional on take-up, average attendance rate over all 12 sessions was high and stable across sessions (the average attendance per session was 86 percent). After each session we collected individual-level information on measures of classroom engagement and quality of session from the trainers.[2]

Leveraging the intervention and its successful implementation, we aim to provide novel evidence on the role of PI - a soft skill intervention - in a new context. We study the effect of the intervention on personal initiative skills, intra and interpersonal skills, along with testing the effects of the intervention on profits, sales, and access to finance. Soft

[2]We observe that on average, on a scale of 1-5, classroom engagement is rated at 4.75 and quality of the session is rated at 4.78.

skills interventions have shown mixed results across contexts in Africa and Latin America. Another strand of the literature finds that soft skills programs such as personal initiative training increase business performance outcomes compared to traditional business training (Campos et al., 2017; Glaub et al., 2014; Iacovone et al., 2021), while Alibhai et al. (2019) and Ubfal et al. (2022) find no evidence of long-term impacts. A long-run follow-up of Campos et al. (2017) shows that after seven years of the intervention, the average impacts of personal initiative training amount to a 52 percent increase in monthly profits (Campos et al., 2025). This effect is concentrated on men, who are able to increase capital, and not women. We add to this literature by providing evidence from India in a novel way to quantify the effects of PI on households and the business (McKenzie et al., 2021).

Given the potential for heterogeneous effects accruing to soft skills training, in addition to surveying male and female entrepreneurs in our sample, we anticipate surveying their spouse, and conducting a lab-in-the field experiment with the couple at endline. We aim to test the indirect effects of PI skills on household communication and negotiation skills, decision-making with respect to children's investments, and cross-spouse input on business decisions. We will implement a one-shot investment decision-game. This will allow testing the role of the intervention on spouses' information updating behavior, and perceived influence within the household in an incentivized game. This will allow to quantify the direct and indirect effects of soft skills training. In India, about 21 percent of micro, small, and medium enterprises (MSMEs) are owned by women and yet, the potential of female entrepreneurship to increase GDP and female employment is immense (Chiplunkar and Goldberg, 2024). One limiting factor for female entrepreneurs is the role of social norms and intra-household dynamics. For instance, Field et al. (2016) shows that female friendships are important to improve aspirations that are an important aspect determining the returns to business training programs among women. By documenting the causal impact of the intervention on the dual balance sheet problem, we will provide new evidence on the channels that explain the gender gap in profits.

To do so, in our survey we follow the methodology of Bicchieri et al. (2014) and

implement a novel survey tool capturing social norms with respect to women in business to understand the role such norms may play in the returns to soft skills training. We collect innovative data measuring individual behaviors, personal normative beliefs, social normative expectations, social empirical expectations, and perceived sanctions in the context of entrepreneurship and women's roles. We elicit responses through the use of vignettes and a novel scale adapting the work of Alaref et al. (2024).[3] There is mounting evidence that gender norms influence household decision-making in favor of men (Bertrand et al., 2015; Bursztyn and Jensen, 2017), and this may lower the profits of female entrepreneurs (Bernhardt et al., 2019). For instance, men may influence how business revenues are spent (Friedson-Ridenour and Pierotti, 2019; Riley, 2024). In addition, even with similar decision-making power, men and women may be different in their preferences toward the use of business revenues (Agte et al., 2022). We thus aim to provide novel evidence of the interaction between skills, different components of social norms, and their effects on firm- and household-level outcomes.

This paper makes three contributions to the literature. First, we contribute to the literature on entrepreneurship and skills by evaluating a soft skills training intervention in a context where such evidence is scarce. Existing work has focused largely on Latin America and sub-Saharan Africa and has yielded mixed results, often depending on the type of entrepreneur and implementation model (McKenzie et al., 2021; Ubfal, 2024). By testing the effects of personal initiative (PI) training in rural South India—a context with structurally different constraints and low rates of female labor force participation—we extend this literature to a new and policy relevant context.

Second, we contribute to the literature on gender and entrepreneurship by explicitly examining how social norms—both within and beyond the household—mediate the returns to entrepreneurship training – a gap highlighted in a recent review by Ubfal

[3]For instance, we measure, what the respondent thinks should be done - personal normative beliefs (first-order beliefs), what the respondent thinks those in the reference group approve - social normative expectations (2nd order beliefs), social empirical expectations - what the respondent thinks those in the reference group do, and perceived sanctions - what the respondent thinks are the consequences for not behaving according to the perceived norm. We use as the reference group the community and people whose opinions matter to the respondents.

(2024). While existing studies often treat firm and household dynamics separately, we recognize the blurred boundaries between business and family decision-making in our context. By collecting data from both entrepreneurs and their spouses, and by measuring outcomes such as spousal involvement in business decisions and resource allocation, we unpack the intra-household mechanisms that may reinforce or constrain women's economic agency. This approach allows us to move beyond firm-level outcomes and trace how soft skills interventions can reshape bargaining dynamics, aspirations, and perceived roles within the family—factors that are critical to understanding gender gaps in enterprise performance in South Asia (Badarinza et al., 2019). Our work adds to that of (Giné and Mansuri, 2021) who show that in rural Pakistan business training for women increases knowledge but showed no improvements in any other outcomes, such as income and assets, business practices, and business operations. The authors conjecture that differences in the degree of involvement in the business, and other barriers may explain this result.

Finally, we contribute to the literature on social norms by introducing a novel, multi-concepts measurement strategy embedded within a randomized controlled trial. While prior work has focused on misperceptions around women's labor force participation (Bursztyn and Jensen, 2017), we extend this by developing new tools to capture social norms specifically related to women's entrepreneurship. Our survey instrument distinguishes between first-order beliefs, second-order beliefs, empirical expectations, normative expectations, and perceived sanctions—drawing on the framework of Bicchieri et al. (2014) and adapting recent innovations by Alaref et al. (2024) to the entrepreneurship context. We complement this with a lab-in-the-field spousal decision-making game to quantify intra-household bargaining power and belief updating. Together, these innovations allow us to rigorously test whether soft skills training shifts not only behavior, but also the underlying normative constraints faced by female entrepreneurs—a key but under-measured mechanism in explaining persistent gender gaps in firm performance.

The remaining sections of this paper describe more the context, the intervention and its implementation. We also describe all hypotheses, primary and secondary outcomes,

analysis strategies (including intent-to-treat (ITT) estimation, treatment heterogeneity by gender and spouses, and multiple hypothesis testing corrections). Survey instruments are pre-specified in this Stage 1 proposal and registered with the AEA RCT Registry (AEARCTR-13390).

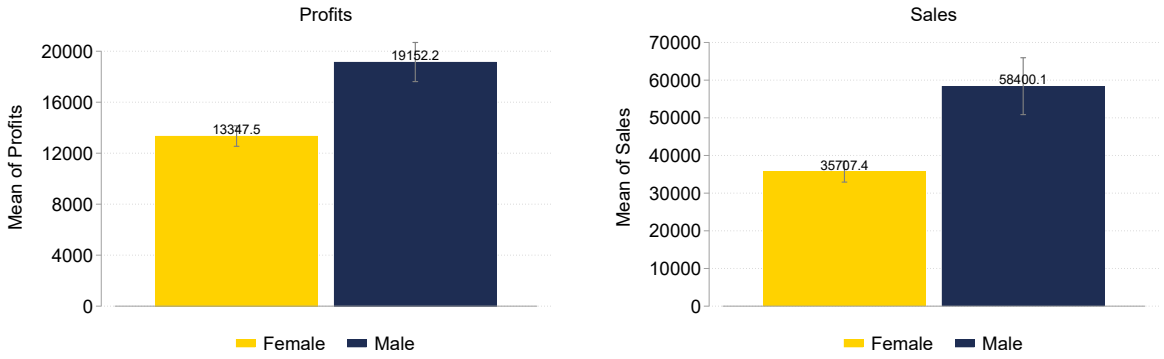
2 Background

2.1 Context and Study Sample

Entrepreneurs in our study operate non-farm micro-businesses in rural areas across 10 districts of the state. In Figure A1 we present the distribution of blocks where the study took place, and the spread in the location of businesses. Defining entrepreneurship is challenging and even more so female entrepreneurship (Sanyal, 2019). We follow the literature and define entrepreneurs as individuals who are owners, main managers or that are highly involved in the day-to-day decision making of the business. In addition, the business is their main occupation and the entrepreneur has been engaged in the business for at least a year. Our eligibility criteria also included the entrepreneurs being married and able to travel short distances. These eligibility criteria are used to screen potential participants during the screening survey. Focus groups revealed that in our context, women tend to co-own a business with their own spouse. For this reason, sampling business owners that are on title owners would have created a sample of female-owned businesses that is not reflecting the reality of female entrepreneurship. Thus, we define entrepreneurs as those who consider themselves owners or main decision-makers/managers in day-to-day tasks. In Section 3.3, we define the eligibility criteria in details for entrepreneur selection and Table A9 summarizes the baseline characteristics of the entrepreneurs. Our definition follows standard practice in the literature on female entrepreneurship, see for example (Friedson-Ridenour and Pierotti, 2019; Sanyal, 2019; Field et al., 2016). On average businesses in our sample have been established for 10 years, and only 19 percent of businesses have paid employees. Women are more likely to co-own businesses, and do so jointly with the spouse.

Gender gap in profitability: Women own 26 percent of enterprises in Tamil Nadu [4] among which, most enterprises are categorized as micro-enterprises and men own over 70 percent of these. A significant share of women who are self-employed (13.6 percent in urban areas and 21 percent in rural areas) are informal wage workers in household enterprises. Furthermore, there is disparity in the success of women-led and men-led enterprises. In fact, in our study sample, we observe that female led enterprises have significantly lower levels of sales and profits relative to male-led enterprises (Figure 1). Female led enterprises report profits from last active month, on average, to be INR 13,347, which is around INR 5800 lower than that reported by male led enterprises (31 percent gap). Similarly, female entrepreneurs report sales of INR 35,700, whereas men report INR 58,400 on average, suggesting a substantial gap of INR 22,700. While these differences could be due to gender-sectorial segregation, in our sample we do not observe substantial differences in type of enterprises operated by men and women, and conditioning on the type of firm does not mitigate the observed gender gaps. The majority of the firms in our sample operate tailoring/knitting shops (around 26%), followed by food vending, tea or refreshment shops (around 17%) and and retail and wholesale merchandising (around 13%).

Figure 1: Business Outcomes - Profits and Sales.



Note: The figure presents profits and sales of female and male entrepreneurs with 95 percent confidence intervals. Source: Baseline survey conducted with a sample of 2,558 entrepreneurs.

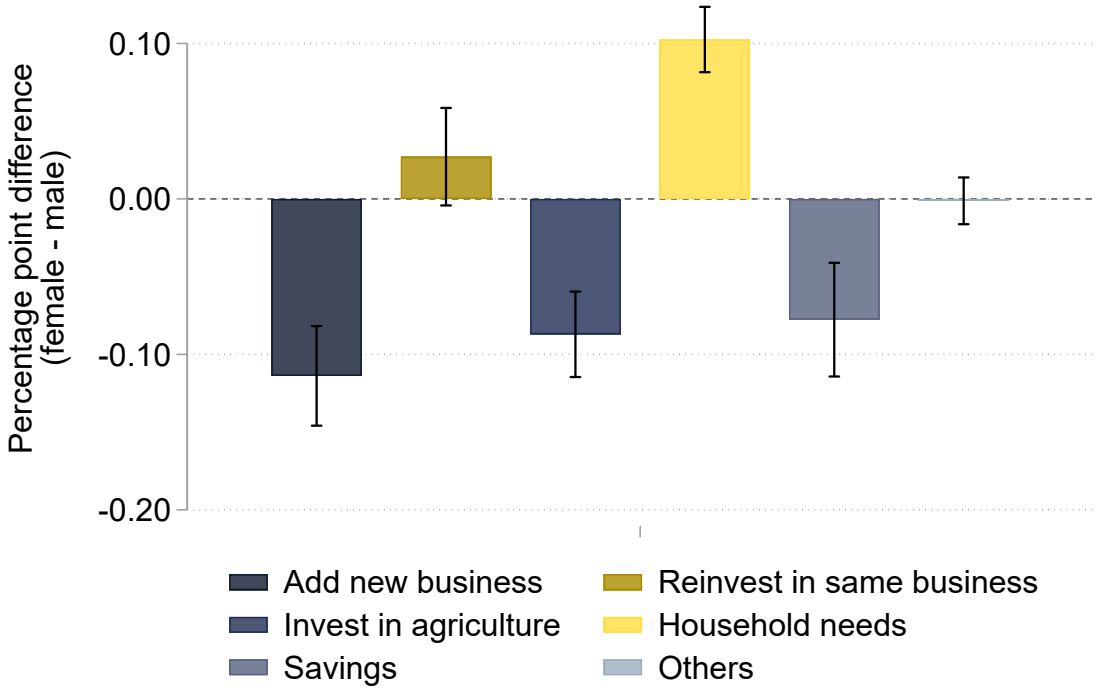
[4]Within India, this rate is the highest above other southern states like Kerala (11 percent), Andhra Pradesh (11 percent), West Bengal (10 percent), and Maharashtra (8 percent).

There are many reasons why gender gaps persist. Financial access is likely an explanation. We find that while female entrepreneurs are more likely to have bank accounts they are less likely to have mobile money accounts, possibly due to lacking in digital inclusion. Furthermore, we find that while there is no significant difference in the amount of expenditure male and female entrepreneurs can make without borrowing, female entrepreneurs are only able to borrow roughly half of what men can – see Table A12. This is consistent with previous findings that women receive higher number of loans but of smaller amounts (Herath Bandara, 2024).

In Tamil Nadu, women's role within the firm and the household is highly intertwined (Delecourt and Fitzpatrick, 2021) and women businesses' financial gains are expected to be shared within the household or with the spouse (de Mel et al., 2008; Friedson-Ridenour and Pierotti, 2019). We clearly observe this duality within our sample. As shown in Figure 2, relative to men, a significantly higher proportion of women report using their business profits for household needs as their top priority. On the other hand, more men relative to women report adding new business, investing in agriculture and savings among their top three priorities. Such gender differences in the use and intra-household sharing of business profits could give rise to differences in returns to capital between male and female entrepreneurs (de Mel et al., 2008; Bernhardt et al., 2019).

Entrepreneurial soft skills and practices: In our sample we find a mixed picture when it comes to entrepreneurial soft skills and practices. Unlike in other contexts where PI was studied, in our sample we observe that female entrepreneurs have scored higher on a business practice index, confidence and entrepreneurial self efficacy relative to males, while males score higher on grit (Table A12). While significant, the magnitude of these differences are very small. Female entrepreneurs score significantly higher by 0.213 in entrepreneurial self-efficacy, where the levels of this score appear somewhat high for both males and females (3.82 and 4.03 out of 5 respectively). While we do not see any significant difference in the personal initiative scale, the individual components provide meaningful insight. Female entrepreneurs are less likely to try something new, actively observe environment to see what might affect their business in future, set business goals,

Figure 2: Gender Gap in Use of Profits (Top 3 Priorities).



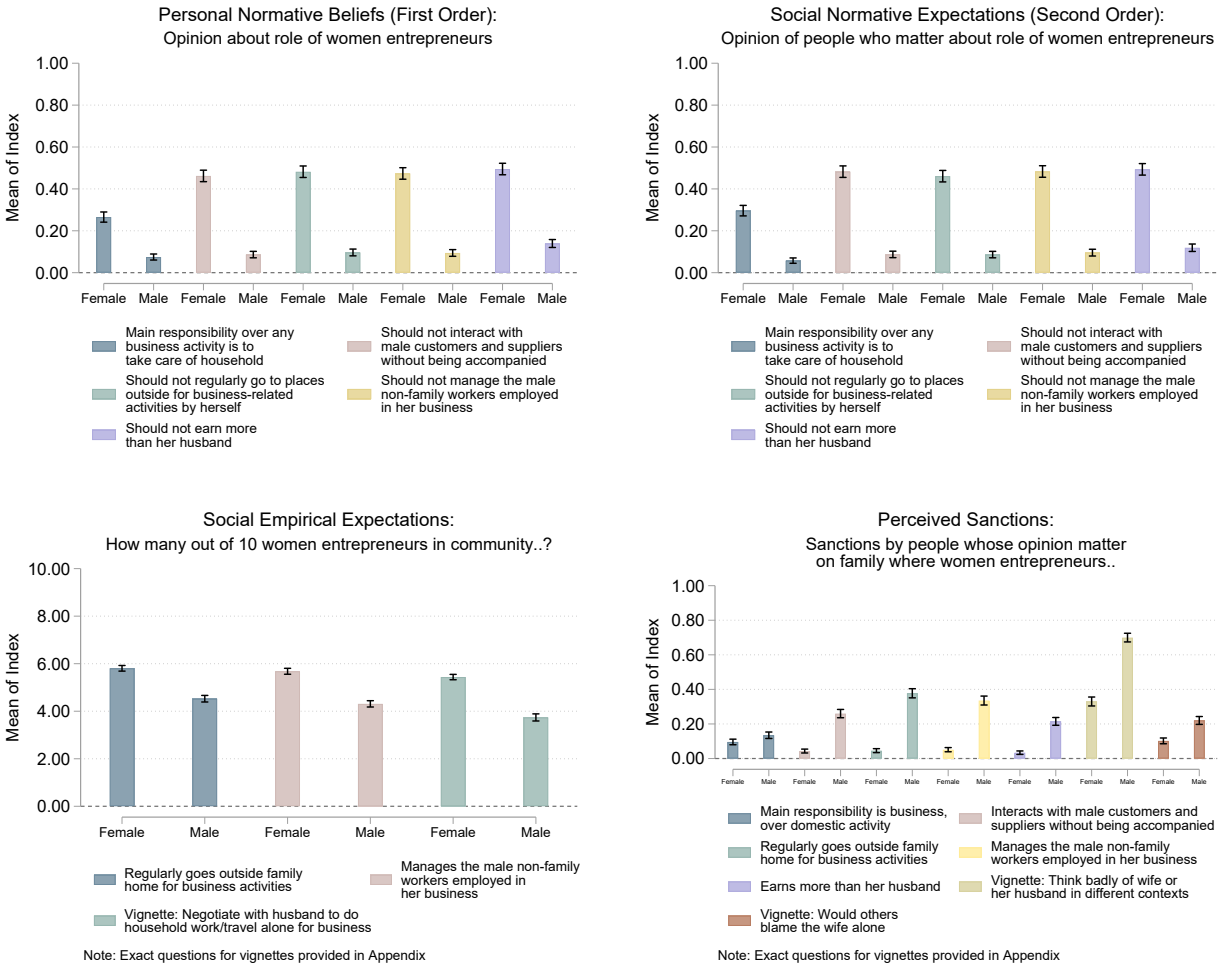
Note: This figure shows the gender gap in the use of profits for the top three priorities reported by respondents. The gender gap is calculated as the difference in the proportion of female respondents compared to male respondents who selected each category as one of their top three uses of profit. A positive value indicates that a larger proportion of females selected the category compared to males, while a negative value indicates the opposite. Source: Baseline survey conducted with a sample of 2,558 entrepreneurs.

seek information and feedback from others about business and make plans on how to accomplish what they need to do for their business. On the other hand, they are more likely to look for information about customers and competitors and spend time planning how to prevent problems occurring in their business. These descriptive show that while men outperform women in some aspects, the reverse is also true in other skills. Friedson-Ridenour and Pierotti (2019) argue that women's business decisions and thus gender profit gaps are influenced by complex intra-household dynamics, such as a desire to conform to traditional gender norms. In our study, we aim to unpack this puzzle and better understand if there are gender differences in the returns to soft skills programs due to spousal interactions and underlying social norms regarding women's and men's role in society, as further discussed below.

Social norms around women in business: Qualitative evidence from the scoping work and the baseline indicate various ways in which social norms impact firm growth. First, we observe significant gender gaps in individual behaviors. For instance, women are less likely than men to agree that women's main responsibility is to take care of the household, they should not interact without being accompanied with male customers and suppliers or not manage male non-family workers and that they should not earn more than their husbands. As a result, female entrepreneurs have more progressive first order beliefs about gender norms relative to male entrepreneurs (Table A12). In terms of second order beliefs, that is, regarding people whose opinion matter to them, female entrepreneurs in our sample believe these people are more progressive about gender norms than the male entrepreneurs. We also observe that the perception of norms around women entrepreneurs in the community held by males is much more regressive relative to that held by females. These findings suggest that women may have misperceived conceptions of the barriers to firm growth when it comes to norms related to women finding new clients, engaging with suppliers or successfully securing credit, etc. At the same time we also observe that males also perceive business related sanctions against women to be much higher than females do - i.e., on average 30 percent of males (relative to 10 percent of females) believe female entrepreneurs' business related actions will lead to social sanctions. This perception may impact women's behaviors in ways that it does not for male entrepreneurs. The patterns in gender norms from our sample is illustrated in Figure 3. These pre-existing norms can potentially hamper female entrepreneurs' business ventures, particularly in contexts where there are fewer female-owned businesses. How will these over-optimistic views of society interact with the intervention is ambiguous. While women's less conservative views about society may incentivize them to better exercise the newly acquired soft skills; the realization of the new skills may also backfire as women are presented with a new social reality that is more conservative than they initially expected. At the same time, if female entrepreneurs are more likely to engage with other women, then this over-optimistic view is well-explained by the social environment in which women operate. Yet, the action-oriented PI intervention may still have an ambiguous effect depending on

whether female entrepreneurs become more likely to engage with male customers, and entrepreneurs. We aim to investigate these two channels.

Figure 3: Gender Norms



Note: This figure presents items of indices related to gender norms across several dimensions: first-order beliefs, second-order beliefs, perceptions of norms around women entrepreneurs, and perceived sanctions on women in business. Higher index values for first-order beliefs, second-order beliefs, and perceptions of norms indicate less biased gender norms. In contrast, for business-related perceived sanctions, higher index values reflect a greater perception of sanctions imposed on women entrepreneurs. Source: Baseline survey conducted with a sample of 2,558 entrepreneurs.

3 Experimental Design

3.1 Intervention Details

The Personal Initiative (PI) training is a psychology-based entrepreneurship program designed to strengthen key behavioral skills linked to business success. Unlike traditional business training, which focuses on technical knowledge, PI training develops soft skills that influence entrepreneurial decision-making and resilience. The curriculum focuses on developing the following skills among participants: i) growth mindset; ii) perseverance, ambition, and leadership; iii) organization; iv) communication; v) self-efficacy; vi) confidence; and, vii) future-oriented thinking. PI training was originally developed by psychologists at Leuphana University of Lüneburg, Germany, and has been tested across multiple contexts (Campos et al., 2017). To support its implementation globally, the founding team established Doorways GmbH in 2022, a non-governmental organization focused on adapting the training for diverse entrepreneurial environments.

For this study, the curriculum was tailored to microentrepreneurs in Tamil Nadu, incorporating locally relevant content to reflect regional market conditions and socio-economic constraints. Women, in particular, face barriers shaped by social norms that limit their economic decision-making and access to business resources. The original intervention was adapted to address these challenges in mind, to ensure accessibility and practical relevance.

The adaptation process involved field visits, stakeholder consultations, and a preliminary soft skills assessment to assess the specific needs of microentrepreneurs. Focus groups with entrepreneurs in Tamil Nadu provided insights into business challenges and training preferences, while consultations with the Enterprise Development Institute of India and the Government of Tamil Nadu's Tamil Nadu Rural Transformation Project (TNRTP) helped align the training with support structures of the World Bank currently existing there.

PI training is expected to influence business growth, profitability, and entrepreneurial mindset, particularly in contexts where formal education and managerial training

opportunities are limited. Traditional business training and financial assistance programs have shown mixed results—especially for female-owned enterprises (Javed et al., 2023)—highlighting the need for alternative approaches. This study contributes to the literature by evaluating PI training in a South Asian context, measuring its impact on business performance, gender disparities, and intra-household decision-making.

3.2 PI curriculum in Tamil Nadu

The training consists of 12 sessions, each lasting 3 hours, delivered over 12 weeks. Sessions take place in small-group settings, led by trained facilitators who were selected through a rigorous screening process and trained to maintain consistency in the curriculum. The facilitators use interactive teaching methods, including role-playing exercises and guided discussions to encourage participants to apply what they learn to their businesses between sessions. The sessions cover the following topics:

1. Introduction to Personal Initiative Training
2. Self-Starting Behavior in Business
3. Identifying and Seizing Business Opportunities
4. Future Orientation and Anticipating Obstacles
5. Problem-Solving and Overcoming Barriers
6. Goal-Setting and Business Strategy
7. Financial Resource Management and Bootstrapping Techniques
8. Marketing, Customer Relations, and Sales Expansion
9. Negotiation and Persuasion Skills
10. Balancing Household and Business Responsibilities
11. Gender Norms and Social Perceptions of Female Entrepreneurs
12. Long-Term Planning and Commitment to Personal Initiative

The curriculum is designed to build both cognitive and behavioral skills essential for business growth, such as strategic planning, financial management, resilience, and

proactive decision-making. It also incorporates social norms components, allowing the study to examine how entrepreneurship is shaped by intra-household bargaining and community expectations. In order to follow the curriculum of Campos et al. (2017) and preserve the comparability of results, the social norms aspects where integrated by providing examples specific to women and men in the classroom. The group would then be stimulated to discuss the barriers and solutions that could help men and women. This allowed participants to gain perspectives from both men and women.

Participants are expected to apply the PI principles in real-world scenarios, including business experiments, financial tracking, and peer accountability mechanisms. Each session includes structured self-assessments and weekly action plans, ensuring that entrepreneurs engage with the material beyond the classroom. The final session focuses on long-term goal-setting, where participants commit to implementing at least eight new business strategies learned during the training.

The sessions are interactive and application-focused, combining discussions, hands-on exercises, role-playing, and peer collaboration. Entrepreneurs engage in problem-solving tasks, scenario-based decision-making, and structured goal-setting to apply PI principles directly to their businesses. Homework assignments require them to test new strategies—such as identifying opportunities related to their business ventures, negotiating deals, or adjusting marketing approaches—between sessions, reinforcing learning through real-world application. Participants also share experiences, provide peer feedback to each other, and discuss challenges, fostering a collaborative learning environment. Trainers offer structured guidance and feedback, ensuring that entrepreneurs stay engaged and actively work toward improving business practices.

Besides the main trainer, participants were exposed to Enterprise Community Professionals (ECPs). ECPs are a trained network to promote business development and operate at the village-level across the state, and are available to support any business. For instance, if a person wants to initiate the process of acquiring credit, ECPs are trained to accompany and guide the participant to One Stop Facility services – a TNRTP arm aimed to help rural business owners apply for loans or build a business plan. For the study, the

ECPs were also engaged to facilitate the logistics with respect to attendance of sessions.

3.3 Sampling

The study takes place in the state of Tamil Nadu and participants are from rural areas across 10 districts. The sample consists of 2,558 entrepreneurs. All entrepreneurs enrolled in the study were required to meet the following criteria:

(i) the firm they operate is the entrepreneur's main occupation and they have been engaged in the business for at least the past 12 months;

(ii) the firm employs less than 5 employees;

(iii) the type of business has to be non-agriculture;

(iv) the entrepreneur is either the sole or main owner of the firm, or alternatively has a high degree of decision-making within the firm;

(v) the entrepreneur is able to travel short distances;

(vi) the entrepreneur is married;

(vii) the individual provides consent to participating in the study.[5]

We used a two-step procedure for sampling entrepreneurs. In the first step, we make use of a list of entrepreneurs selected from applicants to TNRTP. To validate that participants met the above criteria, a screening survey was conducted between September and November 2023. Based on these criteria, individuals were enrolled in the initial sample of the study. The second procedure involved sampling entrepreneurs that met criteria i)-vi) through direct interviews similar to the screening survey. We drew a radius of 2 km from the pre-determined training venues. This distance was confirmed to be

[5]Criteria (iv) was imposed in order to avoid accounting for female entrepreneurs who would not be *de jure* owners. In practice this difference is minimal and most entrepreneurs report being owners of the business. In our sample we observe that 8 individuals report they are not the main owners of the business, out of which 5 are principal manager and 3 are responsible for day-to-day operations of the business.

approximately within 30 minutes of travel time from an entrepreneur to a training venue. This criterion was set to satisfy eligibility criteria (v). Next, from this radius enumerators were instructed to screen entrepreneurs and if they met all the eligibility criteria, the entrepreneur is enrolled in the baseline survey. The sampling exercise was done in a way that no two participants in the study can be within a minimum of 5 streets/street segments of each other in order to minimize the potential for spillovers. To identify entrepreneurs, enumerators were instructed to seek for businesses with open shops identifiable from the street. The experimental design is stratified based on these two sampling procedures.

3.4 Randomization

We employed a cluster randomized assignment of entrepreneurs into one of two groups.

Treatment Group: Entrepreneurs in this group received 36 hours of contact with the PI training over the course of 12 weeks. A total of 1,300 entrepreneurs were assigned to the treatment group.

Control Group: Entrepreneurs in this group did not receive the training during the study period and served as a benchmark for comparison.

Randomization was stratified by gender to ensure an equal distribution of male and female participants across treatment and control groups, resulting in a balanced 50 percent split. The treatment group comprised of 1300 entrepreneurs, with 650 entrepreneurs of each gender while the control group comprised of 1258 entrepreneurs with 635 males and 623 females. Additionally, treatment assignment was stratified by blocks within districts to ease the logistics of forming group training sessions. The randomization process was conducted in STATA following the completion of baseline data collection.

3.4.1 Balance Tables

In Table A9 we provide a balance test for the full sample where column (8) highlights that the baseline characteristics are almost completely balanced across control and treatment

group through randomization. The only significant difference is that years since business founded is approximately 0.8 years (9.6 months) higher among the treated entrepreneurs. Given the average years of operation is 10.5 years, this is not a very huge difference and will be controlled for in the empirical analysis. In Table A10 we provide a balance test by gender and treatment assignment. We show that the baseline characteristics of individuals are once again orthogonal to the treatment assignment, within gender, across 22 of 23 variables (96 percent).

Table A11 and A12 presents similar balance tests for the outcome variables. Column (8) of table A11 highlights that the outcomes are balanced across control and treatment group at baseline. Columns (4)-(9) of table A12 show that the control and treatment group is balanced among males and females across 90% and 93% of the outcomes of interest respectively. Among the males, the treated group scores slightly higher on grit and confidence and is somewhat more progressive in their perception of gender norms around women entrepreneurs in their community. Among the females, the treated group scores slightly higher on locus of control. While these differences are statistically significant, the magnitudes are quite small and we would not expect them to strongly affect the empirical analysis.

3.5 Statistical Power

After collecting baseline data and after implementation, we estimated the minimum detectable effect (MDE) for all primary outcomes, and business outcomes. Results are presented in Table 1. The MDE that would be required to detect effects with power at 80 percent, given baseline ICC, and accounting for the experimental design is much lower for the primary outcomes measured in the literature - for instance, the effects for business practices, personal initiative, and access to finance are in the order of 0.054, 0.124, and 0.147 respectively.

In addition to the power calculations, it is worth mentioning three additional features of our design. First, our sample is derived from a pre-screening survey which would allows us to lower attrition across survey rounds, and reduce different sources of

heterogeneity that may be unobservable. Second, our sample is among the top 3 studies with the largest number of treated individuals (McKenzie, 2021). Finally, we also envision pooling data from multiple rounds of follow-up surveys (baseline, tracking survey, and endline). Together, these solutions look to estimate confidence intervals that are narrower and for which we are able to identify MDE.

Table 1: Summary of Power Calculations

Outcome	Power	Significance	Baseline ICC	N	Clusters	Estimated MDE
Direct Outcomes						
Business Practice Score	80%	.05	.277	2558	82	.0281
Entrepreneurial self-efficacy	80%	.05	.173	2558	82	.0696
Grit	80%	.05	.249	2558	82	.0404
Confidence	80%	.05	.116	2558	82	.0524
Locus of control	80%	.05	.202	2558	82	.0455
Personal Initiative	80%	.05	.25	2558	82	.0663
Business Outcomes						
Financial Index	80%	.05	.133	2558	82	.0531
Sales	80%	.05	.04	2558	82	9240.0723
Profits	80%	.05	.026	2558	82	2441.7605

Notes: Estimates are controlling for strata (gender and block).

4 Implementation

4.1 Trainer Selection and Mobilization

The intervention was implemented in close collaboration with a non-governmental organization Hand-in-Hand (HiH), based in Tamil Nadu with extensive experience in fostering self-help groups and training entrepreneurs in both hard skills – such as financial and digital literacy, and business management – and in soft skills – such as self-improvement, behavior change, communication skills and leadership. Trainers were recruited from a pool of agricultural and entrepreneurship experts that works with HiH and are skilled in local communication and the cultural context. Through various channels and a competitive process, in alignment with the requirements set forth by Doorways and the World Bank, 15 qualified English-speaking trainers were selected based on their experience in the field and their skill set to deliver the content effectively.

The HiH team took significant efforts to translate the 12 modules of the PI training book from English to Tamil. The process included converting Word documents, PowerPoint presentations, trainers' manuals, and picture cards, all aimed at making the content accessible to Tamil-speaking audience and ensuring that the terminology was accurate and relevant. Selected trainers then underwent a comprehensive one to two weeks preparatory program designed to equip them with tools to effectively deliver the PI curriculum. This included a 5 day Training of the Trainers (ToT) conducted by Doorways and each trainer completed baseline and post-training surveys assessing their entrepreneurship knowledge, socio-economic awareness, understanding of gender norms, and social desirability biases. Furthermore, two pilot training sessions were carried out in Chengalpattu and Villupuram where various activities were observed including language use, training methodology, content delivery, exercise effectiveness, timing of activities, and the start and end time of each session. This thorough evaluation was used to refine the training approach and enhance the learning experience of the entrepreneurs.

With the support of the Vazhndhu Kaattuvom Project (VKP), district officials, team leaders and young professionals, the HiH team prepared a training schedule for 50 batches across 10 districts and 41 blocks, taking into consideration local holidays, and availability of both trainers and trainees. This planning methodology ensured that the training sessions would be accessible and convenient for all participants. Once the training plan was finalized, it was promptly circulated among all the key stakeholders to ensure smooth implementation of the training program.

The PI training targeted 650 female and 650 male entrepreneurs, organized into small groups of 15-20 trainees each, for a total of 50 batches. These groups were in a mixed-gender format to facilitate cross-gender learning and exposure to diverse experiences. Fifty one Enterprise Community Professionals (ECPs)[6], community members with experience in community mobilization were appointed as HiH's Training Assistants to actively engage with the selected trainees to ensure participation.

[6]Details provided in Appendix A1.6

Engagement included sharing important information about the 12-week training program, including the training dates, benefits, financial support, and how it could elevate their businesses, personal visits and follow-up calls to motivate participation and ensure mobilization for all the sessions. Engaging ECPs in the mobilization of training participants was crucial for informing a potentially sustainable model for scaling up the intervention. Through this study, we built the capacity of 52 community members who can subsequently support training mobilization during future expansions.

Throughout the training, HiH's team communicated regularly, using messages and WhatsApp to encourage attendance and share important information, including daily support of INR 160 for food and travel expenses. For those who did not have a WhatsApp number, updates were sent to a family member's WhatsApp number. To improve the mobilization plan and to ensure male and female participants in all 12 sessions, the HiH team shared digital posters, training benefits video, reels, 30 seconds promotional videos to all the selected trainees. The Training Assistants also visited the trainees who were absent for the training and motivated them to attend the training for all the days.

Sessions took place in facilities with a central location in order to ease accessibility and suitability. Training centres included Panchayat buildings and e-Seva centers and in cases where government buildings were unavailable, rented spaces, suitable for conducting the training were used. To effectively track attendance, we utilized the KOBO tool, ensuring accurate records of participant engagement. The take-up rate of the training, defined as 1 if attended at least one session, was 73.5%. It was higher for females at 83.00%, while among males, take up was 64.17%. Conditional on take-up, average attendance rate over all 12 sessions was quite high at 86%. As shown in Table 2, attendance rate was also significantly higher for females by 5.8 percentage points.

Table 2: Attendance Rates by Gender.

	Male		Female		Difference		
	Mean	SD	Mean	SD	Difference	P-val	N
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Attendance rate	0.828	(0.237)	0.886	(0.183)	0.058	(0.000)***	8,099

Note: The attendance rate is calculated using trainer-entered data from the attendance tracking system (KOBO) recorded for each session of each batch. Statistical significance: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

4.2 Monitoring

After each training session, trainers completed a short survey to measure aspects related to session quality, including perceptions about participant engagement in session and homework, and overall session quality. This information was assessed, along with attendance data from KOBO on a weekly basis to monitor and address potential concerns with respect to heterogeneous implementation quality and to address mobilization challenges, absenteeism, and strategize to improve attendance. The HiH team visited all district batches to ensure that training was being conducted according to schedule. Daily geo-tagged photographs of trainers and the training programs were shared via WhatsApp. To facilitate communication, branch-specific WhatsApp groups were created, including trainees, training assistants, district VKP officials, World Bank representatives, and HiH officials, allowing for close monitoring of training activities.

Additionally, a separate WhatsApp group for trainers was created to provide regular updates on training execution as part of the monitoring mechanism. The HiH team held weekly virtual calls with the Doorways team to review the training with trainers, sharing feedback and highlighting challenges, for which suggestions and solutions were provided. Briefing sessions for trainers were provided prior to the start of training sessions in each district. The World Bank team also conducted weekly meetings with officials to assess project progress, address challenges related to funding and budgeting, and coordinate with the VKP and Doorways teams. HiH also collected video testimonials, case studies, and feedback to showcase the training's impact and how it has

transformed participants' lives.[7]

5 Data and Main Outcomes

5.1 Screening Survey

The screening survey was conducted between September and October 2023 where enumerators surveyed 6,387 entrepreneurs across 54 blocks in 113 districts. The survey gathered demographic information, business characteristics, access to finance and other necessary information on the eligibility criteria mentioned in Section 3.3. We also gathered information on interest in the PI training through the survey. Among those surveyed who were eligible for the intervention, 3,531 entrepreneurs showed interest and availability for attending the in-person training. Recontact information of these entrepreneurs were collected through the survey to facilitate our sampling procedure and consequently conducting the baseline survey.

5.2 Baseline

The baseline survey was then conducted over January and February 2024 across 41 blocks in 10 districts. Out of the eligible and interested entrepreneurs from the screening survey, the baseline survey was conducted with 2,558 entrepreneurs, out of which, 380 respondents were sampled from the first method (from the applicants to VKP) and 2,178 from the second procedure (through spatial sampling). The baseline survey includes modules on demographics and business characteristics, access to finance and additionally collected data on both primary and secondary outcomes of interest covering business practices, entrepreneurial self efficacy, personal initiative, gender norms, time use, grit, decision making, confidence, locus of control and social desirability. Summary statistics are provided in Appendix A1.5.

[7] Testimonials and case studies provided in Appendix A1.7.

5.3 Tracking Respondents

To mitigate concerns over attrition at endline, we track individuals before endline to verify their addresses and current labor status. This exercise will allow for a more effective endline data collection given that we require extensive coordination for the couple. During the tracking exercise, we will collect information on business outcomes - numerical data. This information will be used jointly with the endline data in order to mitigate measurement concerns due to recall bias associated with numerical data. This is done to increase the power in our main outcomes using business-related numerical data. In person surveys are preferred over phone surveys to mitigate concerns over recall biases and possible measurement errors in reporting of numeric outcomes. This data will be analyzed at endline jointly with endline information.

We take advantage of the short tracking exercise, to measure the impact of entrepreneurship training on attention to business-relevant information, we design a behavioral task embedded within the tracking survey. Respondents are shown four short videos resembling content commonly encountered on social media platforms such as TikTok, Instagram Reels, or YouTube Shorts. The videos cover diverse topics, including a movie teaser, a cooking recipe, and other non-business-related subjects, along with one video that provides practical tips for improving their business operations. The videos are shown in random order to control for order effects, and no explicit instructions are provided about the purpose of this task. At the end of the survey, participants are asked to recall and list, using just a word or phrase, the content they remember the most. The outcome of interest is whether entrepreneurs who undergo the personal initiative training are more likely to recall the business-related video, reflecting greater attunement to information relevant to improving their businesses. By comparing the treatment group with the control group, we will assess whether the training fosters selective attention to business-improving opportunities in everyday life. This design provides an unobtrusive measure of attention, aiming to capture the real-world implications of entrepreneurial training interventions. This behavioral measure will allow us to test for intermediate effects of the intervention. This will be done after the endline data collection has been

completed.

5.4 Endline Surveys

We plan to conduct the endline survey with the baseline respondents and their spouses. For spouses who also run businesses, we will collect information on their businesses profits and sales. We will also conduct interviews with women - participants and spouses of participants - to understand how the intervention impacts decision-making and investments in children. The remaining of the endline survey will mimic the baseline.

5.5 Enumerator and Facilitator Surveys

As part of the study, we also collected information on enumerators and facilitators. This data will be used to address concerns with respect to experimental demand, and implementation quality, respectively. The summary statistics of this information is provided in Appendix - see Appendix A1.3.

5.6 Outcomes

This section outlines outcomes used to assess the impact of Personal Initiative (PI) Training. For detailed definitions and measurement methods, see Appendix A1.2. Most outcomes are measured using the average of relevant survey items. For composite measures, we construct indices following the approach of Anderson (2008), also detailed in the appendix.

5.6.1 Primary Outcomes / Direct Outcomes

The direct outcomes focus on shifts in entrepreneurial mindset and personal skills, which are central to the training's theory of change and are directly targeted through the sessions. These are:

Business Practice Index To measure proactive business behavior and strategic

decision-making, we construct a Business Practice Score Index, which captures key actions such as seeking customer feedback, using promotional strategies, negotiating supplier prices, maintaining financial records, and setting business targets. The measure is taken from McKenzie and Woodruff (2017) and details on index components are in Appendix Table A1.

Entrepreneurial Self-Efficacy, reflects an individual's confidence in their ability to start, manage, and grow a business. This is based on a set of questions assessing perceived capability in key areas such as business expansion, financial management, problem-solving, and marketing. The index construction and components, taken from Zhao et al. (2005) are detailed in Appendix Table A1.

Personal Skills We evaluate personal attributes linked to entrepreneurial success:

1. **Grit:** Captures perseverance and passion for long-term goals, with items assessing resilience in the face of setbacks, consistency in interests, and commitment to long-term projects. This measure is taken from Duckworth and Quinn (2009) and Alan et al. (2019).

2. **Confidence:** Assesses belief in one's own abilities, responsibility for others, and future expectations. The source of this measure is Chioda et al. (2023).

3. **Locus of Control:** Measures the extent to which individuals believe they control their own outcomes versus attributing success to external factors. This measure is drawn from Sapp and Harrod (1993).

4. **Personal Initiative:** Evaluates proactive behaviors such as goal setting, problem-solving, and seeking new opportunities. This scale is developed from multiple sources including Frese et al. (1997), Miron et al. (2004), George and Zhou (2001), Parker and Collins (2010), Gielnik et al. (2015), and Frese et al. (1987).

Details on each of these indices, including question composition and response scales, are in Appendix Table A1.

5.6.2 Secondary Outcomes / Downstream Outcomes

In addition to mindset and personal attributes, we examine business performance and financial access, which reflect the downstream effects of improved entrepreneurial skills. **Business performance:** We track two core indicators of business performance:

1. **Profits:** Monthly earnings from business activities.
2. **Sales:** Total revenue generated in the last active business month.

This is collected 3 times, baseline, tracking survey, and endline. The data from tracking and endline is combined in order to mitigate measurement concerns associated with recall bias.

Financial Access: The Financial Access Index measures access to financial services and liquidity constraints, including ownership of financial accounts, ability to cover unexpected expenses, and borrowing capacity. The index components are detailed in Appendix Table A1 and it is adapted from Campos et al. (2017).

5.6.3 Gender-Specific Outcomes

Since the study is contextualized in a setting with gender disparities in entrepreneurship, we assess several outcomes related to women's economic agency, that are potentially affected by the PI curriculum.

Intra-Household Decision-Making: The Decision-Making Index examines control over household finances, major purchases, and personal mobility, based on who makes key decisions (Appendix Table A1). The measure is adapted from measures used in studies such as Ashraf et al. (2010), Schuler et al. (1997), Garikipati (2008), Mahmud et al. (2012) and Pitt et al. (2006).

Experimental Measure of Spousal Bargaining/Influence: We conduct a lab-in-the-field experiment, inspired from Conlon et al., 2021, to investigate how husbands and wives process and integrate each other's information when making household investment decisions. Lab-in-the-field experiments have been widely utilized to study household

decision-making dynamics (Bakhtiar et al., 2024; Afzal et al., 2022; Abbink et al., 2020; Mani, 2020; Iversen et al., 2011). Specifically, our experiment aims to identify whether intra-household information asymmetries distort financial choices and whether spouses systematically discount information provided by their partner.

The experiment consists of a one-shot investment game, where both spouses must decide independently whether to invest in a risky financial opportunity. The probability of success is determined by an urn draw, which contains an unknown mix of red and green balls. A green ball represents a high-return investment of 150, while a red ball represents a low-return investment of 50. Each participant is given an initial endowment of 100, and if they choose to invest, their return is determined by a second urn draw after their decision. If they choose not to invest, they retain their 100 with certainty. The experiment consists of three sequential stages: the information stage, the communication stage, and the individual decision stage. The information stage varies by treatment condition and determines how much information each spouse has before discussing the investment decision. In the full information condition, both spouses separately draw a ball from the urn, and observe the result privately. This condition provides a benchmark for optimal information pooling, as both partners have equal access to the investment probability. In the private information condition, only one spouse, randomly selected, draws a ball and observes the result, while the other spouse receives no direct information about the urn composition. This variation allows us to test whether the non-informed spouse appropriately incorporates their partner's information or systematically discounts it, leading to inefficient decision-making.

Following the information stage, couples enter the communication stage, where they are allowed to discuss their beliefs about the likelihood of investment success before making their individual decisions. In the full information condition, both spouses exchange their signals with equal access to information. In the private information condition, only the spouse who received the draw has direct knowledge of the investment probability, and the non-informed spouse must rely entirely on discussion to infer the likelihood of investment success. This structure allows us to test whether the non-informed spouse fully incorporates their partner's private information or exhibits

systematic biases in processing second-hand information.

In the individual decision stage, both the husband and wife independently decide whether to invest or not. The final payoff is determined separately for each spouse, ensuring that decisions are made individually rather than jointly. If a spouse chooses to invest, their return is determined by a final ball draw from the urn. If the drawn ball is green, they receive 150, and if the drawn ball is red, they receive 50. If they choose not to invest, they retain their initial 100. Importantly, because each spouse's decision is implemented independently, this setup ensures that both participants have an incentive to act on their own beliefs, rather than simply aligning with their partner's choice.

The primary outcomes of interest include investment, information updating behavior, and perceived influence within the household. If information pooling is efficient, investment decisions should reflect the available signals, regardless of which spouse receives the private draw. However, if the non-informed spouse systematically discounts their partner's information, we expect to observe different investment rates when only one spouse holds the private draw. Specifically, if husbands discount their wives' signals, investment rates should be different when the wife is the only informed spouse than when the husband holds the private draw. Conversely, if wives incorporate their husbands' signals more fully, we expect investment rates to remain stable across both variations of the private information condition.

To complement the decision data, we collect additional survey measures. Participants report whether they felt their input was considered, how confident they were in their decision, and whether they believe they made the optimal choice. This allows us to assess whether gendered differences in decision-making reflect cognitive biases in learning from a spouse or broader social norms regarding financial authority within the household.

Gender Norms and Perceptions: We measure shifts in gender-related attitudes in three ways:

1. First-Order Beliefs: Personal views on women's roles in entrepreneurship.
2. Second-Order Beliefs: Perceptions of how the community views women's participation in business.

3. Observed Social Norms: Perceptions of how many women independently engage in business-related activities.

Full question wording and scoring methods for these indices are provided in Appendix Table A1.

All primary and secondary outcome variables measuring behavioral traits will be computed through an index The aggregation into an outcome index addresses concerns of multiple hypothesis testing by combining all outcome indicators into one measure and improves the statistical power to detect effects (Anderson, 2008). Sales, profits, productivity, networks, and access to finance will be measured as continuous or discrete variables.

6 Theory of Change

The Personal Initiative (PI) training program is designed to improve entrepreneurial mindset and behavioral skills among microentrepreneurs, equipping them with psychological tools to navigate business challenges more effectively. Unlike traditional business training, which focuses on technical knowledge, PI training strengthens proactive behaviors, future-oriented decision-making, and resilience. These tools target cognitive, emotional, and motivational aspects, aiming to develop more resilient entrepreneurs by teaching them how to i) differentiate from the competition, ii) anticipate problems, iii) better overcome setbacks, and iv) improve planning for long-term goals and opportunities (Campos et al., 2017). The intervention is expected to yield improvements in business outcomes, financial access, and intra-household decision-making, particularly benefiting female entrepreneurs who face additional social and economic constraints.

The theory of change for PI training operates through the following key mechanisms:
Direct outcomes: Developing Entrepreneurial Mindset and Personal Skills

1. Business Practices: PI training encourages entrepreneurs to identify and seize

business opportunities, anticipate challenges, and take initiative in problem-solving.

Linked sessions: Session 2 (Self-Starting Behavior in Business), Session 3 (Identifying and Seizing Business Opportunities), Session 6 (Goal-Setting and Business Strategy)

2. Entrepreneurial Self-Efficacy: By increasing confidence in their ability to manage and grow a business, PI training equips entrepreneurs with the skills to navigate financial management, marketing, and business expansion more effectively.

   Linked sessions: Session 4 (Future Orientation and Anticipating Obstacles), Session 7 (Financial Resource Management and Bootstrapping Techniques), Session 8 (Marketing, Customer Relations, and Sales Expansion)

3. Personal Skills: The training emphasizes grit, confidence, locus of control, and personal initiative, all of which are critical for business success. Entrepreneurs who develop these skills are expected to demonstrate greater resilience in overcoming setbacks, commitment to long-term business goals, and improved leadership capabilities.

   Linked sessions: Session 5 (Problem-Solving and Overcoming Barriers), Session 9 (Negotiation and Persuasion Skills), Session 12 (Long-Term Planning and Commitment to Personal Initiative)

Downstream outcomes: Impact on Business Performance and Financial Access

1. Increased Business Profits and Sales: By fostering better decision-making and proactive business behaviors, PI training is expected to improve business profitability. Entrepreneurs may diversify income sources, optimize pricing strategies, and improve customer relations, leading to higher sales and profit margins.

   Linked sessions: Session 6 (Goal-Setting and Business Strategy), Session 8 (Marketing, Customer Relations, and Sales Expansion), Session 9 (Negotiation and Persuasion Skills)

2. Improved Financial Access: Training participants may gain greater confidence in applying for loans, maintaining financial records, and leveraging financial services. This is particularly relevant for female entrepreneurs, who often face barriers to accessing credit due to restrictive social norms.

   Linked sessions: Session 7 (Financial Resource Management and Bootstrapping Techniques), Session 10 (Balancing Household and Business Responsibilities)

Gender-Specific Outcomes and Social Norms

1. Closing the Gender Gap in Business Outcomes: Women entrepreneurs frequently encounter social norms that limit their business decision-making and restrict access to resources. PI training aims to empower women by equipping them with the skills and confidence to challenge these constraints, potentially reducing the gender gap in business performance.

   Linked sessions: Session 10 (Balancing Household and Business Responsibilities), Session 11 (Gender Norms and Social Perceptions of Female Entrepreneurs) The mixed-gender mode of implementation is expected to allow both men and women to gain better exposure to the different problems and solutions they each face.

2. Strengthening Intra-Household Decision-Making: Increased confidence and assertiveness gained through PI training may improve women's influence over household finances and major economic decisions. This shift in decision-making dynamics could have positive spillover effects on household well-being and child development outcomes.

   Linked sessions: Session 10 (Balancing Household and Business Responsibilities), Session 12 (Long-Term Planning and Commitment to Personal Initiative)

3. Changing Social Norms: By fostering female entrepreneurship and demonstrating successful business role models, PI training may gradually shift community perceptions about women's economic roles. The intervention's gender-mixed group sessions also provide opportunities for men and women to interact in

business contexts, potentially influencing societal attitudes toward female entrepreneurs.

Linked sessions: Session 11 (Gender Norms and Social Perceptions of Female Entrepreneurs), Session 12 (Long-Term Planning and Commitment to Personal Initiative)

7 Empirical Specification

We use the following ITT estimation to measure the effect of being assigned to the treatment:

$$Y_i = \beta_0 + \beta_1 T_i + \beta_3 X_i + e_i \tag{1}$$

where Y_i is the outcome variable of individual i, T_i is an indicator for the individual assigned to the 'PI training', and X_i is the vector of controls. Standard errors clustered at the unit of randomization.

To estimate the differential impact by gender we will estimate the following:

$$Y_i = \beta_0 + \beta_1 T_i + \beta_2 (T * F) + \beta_3 X_i + e_i \tag{2}$$

where Y_i is the outcome variable of individual i, T_i is an indicator for the individual assigned to the 'PI training', F is the indicator that takes value 1 if the individual is female and 0 if not, and X_i is the vector of controls. Standard errors clustered at the unit of randomization. In both regressions we will include as control variables to improve the precision of estimates. To decide over controls we will conduct a double LASSO estimation using the information on socio-economic demographics. All regressions will include the baseline level of Y_i.

7.1 Multiple Hypotheses Testing

We will employ two different strategies to deal with the rich set of outcome measures. First, we will group the related outcome measures into an index as mentioned above. Second, to correct for multiple hypotheses testing, we will use a step-down procedure to adjust p-values for the false discovery rate (FDR) among groups of outcomes and report the resulting "q-values" (Benjamini and Heller, 2007). We will adjust for multiple hypothesis testing within primary outcomes and within secondary outcome groups, but not across them. We consider secondary outcomes to act as potential mediators of the intervention, and/or act as additional channels that can support the understanding of the effects of the intervention.

7.2 Mechanisms

To better understand the impacts of the intervention we will test for mechanisms via (i) social norms; (ii) baseline level of the primary and secondary outcomes; (iii) quality of the implementation. For *(i)* we will make use of the indices on each of the components for social norms and better understand what aspect of social norms could potentially mediate the findings. For *(iii)*, we will construct an index based on information regarding the trainer experience, average session quality as perceived by students and observers, and the characteristics of the ECPs.

7.3 Intrahousehold Effects

To understand the effects on spouses outcomes we will estimate (1) where the main outcomes are defined based on survey responses of the spouse of the main study participants. In these estimates, we will separate regressions for wives and husbands.

7.4 Addressing Potential Concerns

Attrition: One of the main concern is attrition between baseline and endline. We will conduct tests of differential attrition by treatment and control, and understand its sources. We will also conduct this analysis by gender. To mitigate concerns over attrition we take two main measures. First, when sampling through the screening survey, we ensured gathering validated contact information, along with preferred contact times to ensure a high recontact rate. The survey also allowed us to select participants who consent to participate in the study and expressed interested to be a part of it. These facilitated high recontact rate and low attrition. Second, conducting an in-person tracking survey will support the identification of respondents who could have moved, or changed business.

Attendance in the training: Another key concern was low take-up and attendance of the PI training. Multiple strategies were used to mitigate this concern as well. Firstly, the screening survey pre-screened entrepreneurs for their interest in the training, availability in terms of time commitment and ability to attend the in-person training which helped address concern of low take up. Secondly, the second procedure of the sampling protocol ensured that participants were located sufficiently close to the training venue. Additionally, participants were reimbursed the cost of travel to the training venue along with being offered refreshments during the training. As discussed in Section 4, significant effort was put into mobilization of the participants through active engagement of training assistants and the VKP team who were in regular communication with the participants over WhatsApp and in-person visits. HiH team also shared motivational content digitally to encourage attendance. Additional incentive to attend all 12 sessions was also provided through raffle tickets. Trainees who attended all sessions were given raffle tickets and winners were determined through a lucky draw method where they won nutritional kits of certain monetary values. Along with this, certificate of completion in a ceremony with government officials also acted as an incentive for participants to regularly attend and complete the training. With all these measures in place, the take-up of the training and conditional attendance rate per session

was quite high (73.5% and 86% respectively).

Spillovers: Potential spillovers of the training between treatment and control group is another concern especially since the treatment group and control group participants operate within the same block. However, since the businesses of the participants are not necessarily operating in the same markets, and if they are, they are possible competitors, we do not expect significant peer effects to arise across treatment and control participants. Additionally, the second approach of the sampling procedure ensured that no two participants in the study were within a minimum of 5 streets/street segments of each other. This measure ensures sufficient geographic distance between entrepreneurs in the study to minimize possibility of spillovers.

Implementation Quality: There is growing evidence that implementation quality is key to ensure that programs are effective, and that quality is correlated with trainers' characteristics. This has also been the experience of the implementation partners and the researchers on the project. To ensure that the project has high implementation quality we ensured a thorough selection of trainers starting with a selection criteria including experience training entrepreneurs and having tertiary or a similar level of education followed by training of trainers and trainers' surveys to evaluate their knowledge and attitudes in terms of entrepreneurship, entrepreneurship skills, social norms, and other factors deemed important by the implementation partners (details in Section 4.1). The training of trainers was also conducted for more people than required and the most qualified trainers after observation during trainings was selected.

Additionally, to ensure training quality, random audit checks were carried out . This was done by a consultant working on the project who was not directly involved with Doorways/HiH, thus ensuring there are no conflicts of interest.

During each session, trainers also collected data on participants' engagement with sessions, and their own perceived and self-reported assessment of the quality of each session. Daily geo-tagged photographs of the trainers and traing was shared, and trainers regularly provided updates and also held weekly meetings with Doorways team to share feedback, highlight challenges and receive suggestions. Baseline data of the

trainers was also collected to allow us to address possible sources of heterogeneity along trainer characteristics.

Measurement Error: Our final concern is the possibility of measurement error in some of the primary and secondary data collected. We collected data on enumerator characteristics at baseline in order to address any measurement error associated with potential differences accruing from enumerator characteristics. We will follow the strategy outlined in Di Maio and Fiala (2020). For secondary outcomes, when we measure entrepreneurship skills, social norms and other indices that are more prone to social desirability bias and/or possible under-reporting, we complemented direct survey questioning tools with the use of vignettes to elicit responses with minimal measurement error. All participants were also asked to respond to a social desirability bias survey module which we will use to test for differential effects of the treatment by respondents with high-vs-low desirability bias. We will make use of the Crowne and Marlowe (1960) index for this testing.

8 Administrative information

8.1 Ethics Approval

This study received ethical approval from the DAI Research & Advisory Service on 31 October, 2023. IRB Approval Number IRB00012768.

8.2 Funding

This study is a product of the South Asia Gender Innovation Lab. We gratefully acknowledge the funding received from the World Bank's Umbrella Facility for Gender Equality and South Asia Regional Trade Facilitation Program as well from the Max Planck Institute.

8.3 Replication, and research ethics considerations

All survey instruments, training materials, and analysis code will be made available upon publication, in line with JDE's replication policy. Survey and intervention protocols are documented in the pre-analysis plan. Any necessary deviations from the pre-analysis plan or this submission will look to be minimized, and if any necessary adjustment is required this will be clearly justified in the main text body and in appendix sections.

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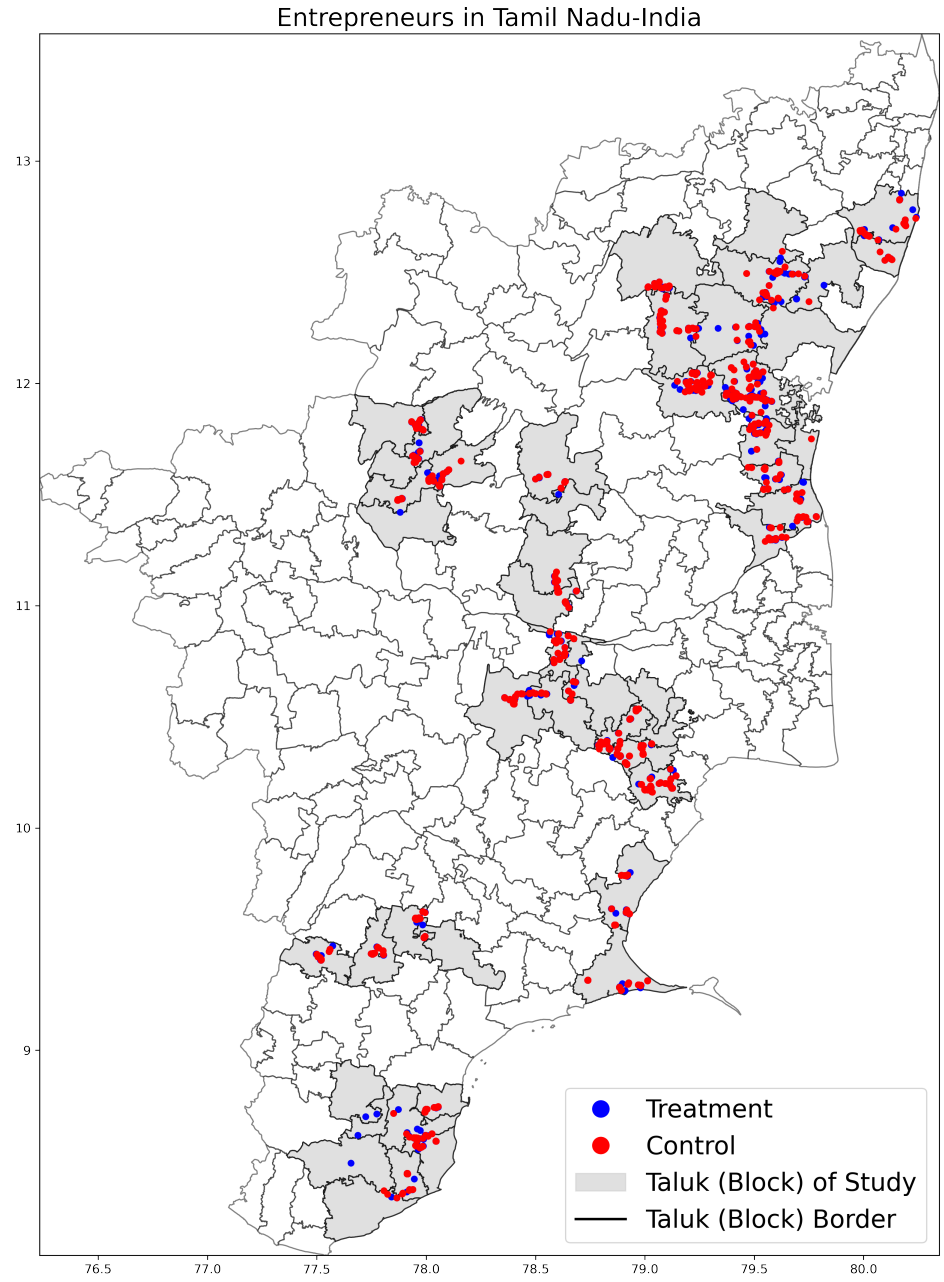
Appendix

A1.1 Study Sample

Figure A1: Study sample blocks and businesses in Tamil Nadu



Source: Author's calculations.

A1.2 Outcomes: Indices and definitions

Table A1: Primary Outcomes: Indices and Definitions

Outcome Indicator	*Definition and Survey Question*
Business Practice Score Index	Measure how proactive the respondent is with respect to new ideas and business practices.
	Average of responses to the following items (measured as Yes=1, No=0) : Which of the following have you done in the business in the last month, that is from [DATE1] to [DATE2]? 1. Asked existing customers what other products you should offer 2. Used a special offer to attract new customers 3. Attempted to negotiate with a supplier for a lower cost of goods 4. Compared the prices offered by different suppliers 5. Determined which goods you make the most profit with per item sold 6. Record every purchase and every sale 7. Set a target for sales over the next year
Financial Index	Measures respondent's access to finance
	Average of z-score of responses to the following survey questions: 1. Do you have a bank account that you use for this business? (Yes=1, No=0) 2. Do you have a mobile money account? (Yes=1, No=0) 3. If you needed to make an expense of XX Rs by next week, without borrowing, would you be able to do so? (Yes=1, No=0) The enumerator began asking with 10,000 as the XX amount and kept increasing in increments of 10,000, up to 100,000 or until the response was No. 4. What is the maximum amount you can borrow in 2 weeks' time for a business emergency? (Integer)

	5. Did you receive at least 1 loan from any source in the past 12 months for the business? (Yes=1, No=0)
Gender Norms: Personal normative beliefs (First order)	Measures gender norms based on respondent's own opinions of females' roles
	The survey asks the following questions to be rated on a scale of 1 (Strongly agree) to 5 (Strongly disagree). Average of the responses topcoded for 1 if strongly disagree and 0 otherwise: For each of the following statements, please tell me if you strongly agree, agree, neither, disagree or strongly disagree. 1. A woman entrepreneur's main responsibility over any business activity should be taking care of the household, including cooking for the family and taking care of children. 2. A woman entrepreneur should not interact with male customers and suppliers without being accompanied by her husband or other family member. 3. A woman entrepreneur should not regularly go to places outside her family home for business-related activities by herself. 4. A woman entrepreneur should not manage the male non-family workers employed in her business. 5. A woman entrepreneur should not earn more than her husband.
Gender Norms: Social normative expectations (Second order beliefs)	Measures gender norms based on respondent's own opinions of females' roles
	The survey asks the following questions to be rated on a scale of 1 (Strongly agree) to 5 (Strongly disagree). Average of the responses topcoded for 1 if strongly disagree and 0 otherwise:

	For the next set of questions, please think of people whose opinions matter to you and your family. For each statement, please tell me they would strongly agree, agree, neither, disagree or strongly disagree. 1. A woman entrepreneur's main responsibility over any business activity should be taking care of the household, including cooking for the family and taking care of children. 2. A woman entrepreneur should not interact with male customers and suppliers without being accompanied by her husband or other family member. 3. A woman entrepreneur should not regularly go to places outside her family home for business-related activities by herself. 4. A woman entrepreneur should not manage the male non-family workers employed in her business. 5. A woman entrepreneur should not earn more than her husband.
Gender norms: Social empirical expectations	Measures respondent's belief of gender norms in environment
	Average of following responses (from 0 to 10) Think about 10 women entrepreneurs in your community. 1. How many out of 10 such woman entrepreneurs regularly go to places outside their family home for business-related activities by themselves? 2. How many out of 10 such woman entrepreneurs manage the male non-family workers employed in their businesses?

	3a. Vignette A: Imagine a young woman named Deepa. She is married to Rajesh and has a seven-year old son. She operates a small grocery store, which she currently opens once their son is in school. She has identified a business opportunity where she can make almost double the usual amount by opening her store earlier in the morning. Her husband, Rajesh, helps her pursue this opportunity by preparing food for the family in the morning and taking care of their son until he goes to school. Out of 10 young women in your community, if they had an opportunity like Deepa, how many would negotiate with their husband to ask him to take care of domestic chores in the morning? OR 3b. Vignette B: Imagine a young woman named Anitha. She is married to Kumar and has a ten-year-old daughter. Anitha is a tailor and runs a small tailoring shop near her home. She has noticed that by traveling to a nearby town, she could buy better quality fabrics at a lower cost, which can double her usual amount of money. However, traveling to the town requires leaving home early and returning late on the days she travel. Her husband, Kumar, supports Anitha to make the trips unaccompanied. Out of 10 young women in your community, if they had an opportunity like Anitha, how many travel alone for business purposes?
Gender norms: Perceived sanctions	Measures respondent's belief about being sanctioned by people whose opinions matter to them and their family
	Average of following responses (from 0 to 1): The survey asks the following questions to be rated on a scale of 1 (Very bad) to 5 (Very good). These are top-coded as 1 if response is Very bad (1) or Bad (2), and 0 otherwise: Please continue to think of people whose opinions matter to you and your family. Please tell me what these people would say about the following families.

1. A family where a woman entrepreneur's main responsibility is her business, over any domestic activity, such as cooking for the family or taking care of children.
2. A family where a woman entrepreneur interacts with male customers and suppliers without being accompanied by her husband or other family member.
3. A family where a woman entrepreneur regularly goes to places outside her family home for business-related activities by herself.
4. A family where a woman entrepreneur manages the male non-family workers employed in her business?
5. A family where a woman entrepreneur earns more than her husband.

6a. Vignette A: Imagine a young woman named Deepa. She is married to Rajesh and has a seven-year old son. She operates a small grocery store, which she currently opens once their son is in school. She has identified a business opportunity where she can make almost double the usual amount by opening her store earlier in the morning. Her husband, Rajesh, helps her pursue this opportunity by preparing food for the family in the morning and taking care of their son until he goes to school.
i. Now please think of people whose opinions matter to you and your family. Would they speak badly of Deepa or her husband Rajesh if they knew that Rajesh was preparing food and caring for their son every morning? (1 if yes, 0 otherwise)
ii. Whom would they blame? (1 if blame the wife only, 0 if blame husband only or both)
OR

	6b. Vignette B: Imagine a young woman named Anitha. She is married to Kumar and has a ten-year-old daughter. Anitha is a tailor and runs a small tailoring shop near her home. She has noticed that by traveling to a nearby town, she could buy better quality fabrics at a lower cost, which can double her usual amount of money. However, traveling to the town requires leaving home early and returning late on the days she travel. Her husband, Kumar, supports Anitha to make the trips unaccompanied. i. Now please think of people whose opinions matter to you and your family. Would they speak badly of Anitha or her husband Kumar if they knew that Anitha travelled alone to the town for her business? (1 if yes, 0 otherwise) ii. Whom would they blame? (1 if blame the wife only, 0 if blame husband only or both)
Decision making Index	Measures respondent's decision making within the housheold
	Average of following responses (1 if respondent or respondent and spouse, 0 otherwise) I would now like to ask you some questions about decision-making for your business and in your household. *Response options are Respondent alone; Spouse alone; Respondent and spouse together; and Someone else.* 1. Who usually decides how the money you earn will be used? 2. Who usually decides how the money your spouse earns will be used? 3. Who usually makes decisions about major household purchases? 4. Who usually makes decisions about your visits to family or relatives?
Grit Index	Measures respondent's grit as a combination of passion and perseverance
	Average of the following on a 5 point scale from Not like me at all (1) to Very much like me (5):

	For each of the following statements, please respond if it is very much like you or not at all like you. The response categories are: Very much like me, Mostly like me, Somewhat like me, Not much like me, Not like me at all 1. I have overcome setbacks to conquer an important challenge 2. New ideas and projects sometimes distract me from previous ones. (*) 3. My interests change from year to year. (*) 4. Setbacks don't discourage me 5. I have been obsessed with a certain idea or project for a short time but later lost interest. (*) 6. I am a hard worker. 7. I often set a goal but later choose to pursue a different one. (*) 8. I have difficulty maintaining my focus on projects that take more than a few months. (*) 9. I finish whatever I begin. 10. I have achieved a goal that took years of work. 11. I become interested in new pursuits every few months. (*) 12. I am diligent. Items marked with (*) were reverse coded, that is Not like me at all=5 to Very much like me=1, before being included in the index.
Confidence Index	Measures respondent's confidence in themselves.
	Average of the following on a 5 point scale from Strongly agree (1) to Strongly disagree (5): For each of the following statements, please respond how much you agree or disagree. The response categories are Strongly Agree, Agree, Neither, Disagree, Strongly Disagree 1. I have confidence to be responsible for others 2. I have confidence about my future 3. I think I can do most things as well as others

	All items were reverse coded, that is Strongly agree=5 to Strongly disagree=1, before being included in the index.
Locus of Control Index	Measures the degree to which the respondent interprets events as being a result of their own actions or external factors.
	Average of the following on a 5 point scale from Totally agree (1) to Totally disagree (5): Please respond if you agree or disagree with the following statements. The response categories are Totally agree, Agree, Neither, Disagree, Totally disagree. 1. To a great extent, my life is controlled by accidental happenings. 2. My life is determined by my own actions. (*) 3. I feel like what happens in my life is mostly determined by others in my household. 4. I can pretty much determine what will happen in my life. (*) 5. Often there is no chance of protecting my personal interests from bad luck happenings. 6. My life is chiefly controlled by my family outside of the household. 7. I am usually able to protect my personal interests. (*) 8. When I get what I want, it's usually because I'm lucky. 9. I have very little chance of protecting my personal interests where they conflict with those of others in the community. Items marked with (*) were reverse coded, that is Totally agree=5 to Totally disagree=1, before being included in the index.
Personal Initiative Scale	Measures respondent's tendency to take personal initiative
	Average of the following responses recorded on a 5 point scale from Never (1) to Always (5): For the following questions, the response categories are Never, Rarely, Sometimes, Very Often and Always. In the last month, how often did you...

	1. Think about problems that might happen in the future? 2. Did you come up with new and useful solutions to problems? 3. Have new and useful ideas? 4. Try something new; something no other person in your community had done before? 5. Actively observe the environment to see how what is happening might affect your business in the future? 6. Look for information about customers and competitors of your product/service? 7. Think about what you need, what you need to do and when you need to do it for your business? 8. Set goals for what you want to achieve in your business? 9. Spend time planning how to prevent re-occurring problems in your business? 10. Seek information and feedback from other people about your business? 11. Make plans how to accomplish what you had to do for your business?
Entrepreneurial Self Efficacy Scale	Measures respondent's ability to be self-sufficient
	Average of the following items, collected on a 5 point scale from Totally agree (1) to Totally disagree (5): Please respond whether you agree or disagree with the following statements. The response categories are Totally agree, Agree, Neither, Disagree and Totally disagree. Are you confident that you can... 1. Develop new and useful products or services? 2. Start a new business activity? 3. Get money for a new business activity? 4. Overcome problems when starting and running a business activity? 5. Do the marketing of a business well? 6. Keep a good overview of your business finances?

	All items were reverse coded, that is Totally disagree=1 to Totally agree=5, before being included in the index.
Social Desirability Index	Assesses whether or not respondents are concerned with social approval Average of the following responses recorded on a 5 point scale from Totally agree (1) to Totally disagree (5) and topcoded for 1 if Totally agree and 0 otherwise: Please state how much you agree or disagree with the following. The response categories are Totally agree, Agree, Neither, Disagree and Totally disagree. 1. It is sometimes hard for me to go on with my work if I am not encouraged. 2. I sometimes feel resentful when I don't get my own way. 3. On a few occasions, I have given up doing something because I thought too little. 4. There have been times when I felt like rebelling against people in authority even though I knew they were right. 5. No matter who I'm talking to, I'm always a good listener. (*) 6. There have been occasions when I took advantage of someone. 7. I'm always willing to admit it when I make a mistake. (*) 8. I sometimes try to get even, rather than forgive and forget. 9. I am always courteous, even to people who are disagreeable. (*) 10. I have never been irked when people expressed ideas very different from my own. (*) 11. There have been times when I was quite jealous of the good fortune of others. 12. I am sometimes irritated by people who ask favors of me. 13. I have never deliberately said something that hurt someone's feelings. (*)

	Items marked with (*) were reverse coded, that is Totally agree=5 to Totally disagree=1, before being included in the index.

The table shows the outcome definitions of each of the indices that we are measuring.

Survey questions used to build the indices is also included.

A1.3 Summary statistics: enumerators and facilitator

Table A2: Summary statistics: Enumerators

Variable	N	Mean	Std Dev	Min	Max
Age (in years)	47	36.00	8.41	20	51
Gender	47	0.64	0.49	0	1
Community: SC	47	0.32	0.47	0	1
Community: ST	47	0.02	0.15	0	1
Community: OBC	47	0.45	0.50	0	1
Community: General	47	0.13	0.34	0	1
Community: Refuse to answer	47	0.09	0.28	0	1
Highest level of education					
10th / 10	47	0.04	0.20	0	1
Plus 2/ 12	47	0.06	0.25	0	1
Diploma after Plus 2/ 12	47	0.15	0.36	0	1
College completed (B.A)/ (B.A)	47	0.51	0.51	0	1
Post Graduate (M.A.)/ (M.A.)	47	0.15	0.36	0	1
Other	47	0.09	0.28	0	1
Marital status					
Never Married	47	0.13	0.34	0	1
Married and Lives Together	47	0.85	0.36	0	1
Married but Lives Separately	47	0.02	0.15	0	1
Children:Total	47	1.43	0.97	0	3
Children:Sons	47	0.81	0.58	0	2
Children:Daughters	47	0.64	0.67	0	2

Source: Survey of enumerators

Table A3: Summary statistics: Enumerators role, training and business experience

Variable	N	Mean	Std Dev	Min	Max
What is your role on the team?					
Enumerator1- I conduct the surveys one-on-one with Rural Entrepreneurs.	47	0.87	0.34	0	1
Supervisor1- I only manage the enumerators- I do not conduct any surveys.	47	0.09	0.28	0	1
Supervisor2- I manage the enumerators and conduct surveys if needed.	47	0.04	0.20	0	1
Ever worked as an enumerator before	47	0.94	0.25	0	1
How long worked as enumerator: months	44	13.59	24.65	0	84
How long worked as enumerator: years	44	6.55	6.76	0	42
Do you own a business					
Yes, I manage a business on my own	47	0.36	0.49	0	1
Yes, I manage a business with someone else	47	0.09	0.28	0	1
No, I do not own a business.	47	0.53	0.50	0	1
Refuse to answer	47	0.02	0.15	0	1

Source: Survey of enumerators

Table A4: Summary statistics: Enumerators' preferences

Variable	N	Mean	Std Dev	Min	Max
Life satisfaction (ladder of 0-10)	45	7.62	3.41	1	10
Expected life satisfaction five years from now (ladder of 0-10)	45	7.93	3.11	1	10
Preferences (Strongly agree (5) - Strongly disagree (1)					
Enjoy handling problems that are completely new to you	47	4.79	0.41	4	5
Try to help people understand underlying concepts behind point you are asking	47	4.70	0.86	1	5
Consider cultural or social barriers when planning your interview	47	4.53	1.06	1	5
Enjoy trying to solve complex problems	47	4.81	0.45	3	5
Try to see people's perspectives when they are talking to you	47	4.70	0.81	2	5
Strongly motivated by the money you can earn	47	4.85	0.51	2	5
Strongly motivated by the recognition you can earn from other people	47	4.64	1.01	1	5
Think that most of the unhappy things in people's lives are due to mistakes they	45	4.69	0.70	2	5
Enjoy handling problems that are completely new to you	47	0.79	0.41	0	1
Try to help people understand underlying concepts behind point you are asking	47	0.85	0.36	0	1
Consider cultural or social barriers when planning your interview	47	0.79	0.41	0	1
Enjoy trying to solve complex problems	47	0.83	0.38	0	1
Try to see people's perspectives when they are talking to you	47	0.85	0.36	0	1
Strongly motivated by the money you can earn	47	0.89	0.31	0	1
Strongly motivated by the recognition you can earn from other people	47	0.87	0.34	0	1
Think that most of the unhappy things in people's lives are due to mistakes they	45	0.78	0.42	0	1
Top 2 coded (Strongly or slightly agree is 1, 0 otherwise)					
Enjoy handling problems that are completely new to you	47	1.00	0.00	1	1
Try to help people understand underlying concepts behind point you are asking	47	0.94	0.25	0	1
Consider cultural or social barriers when planning your interview	47	0.87	0.34	0	1
Enjoy trying to solve complex problems	47	0.98	0.15	0	1
Try to see people's perspectives when they are talking to you	47	0.91	0.28	0	1
Strongly motivated by the money you can earn	47	0.98	0.15	0	1
Strongly motivated by the recognition you can earn from other people	47	0.87	0.34	0	1
Think that most of the unhappy things in people's lives are due to mistakes they	45	0.96	0.21	0	1

Source: Survey of enumerators

Table A5: Summary statistics: Facilitators

Variable	N	Mean	Std Dev	Min	Max
Age (in years)	16	43.81	8.04	30	60
Gender	16	0.38	0.50	0	1
Community: General	16	0.19	0.40	0	1
Community: OBC	16	0.56	0.51	0	1
Community: SC/ST	16	0.06	0.25	0	1
Community: MBC	16	0.06	0.25	0	1
Community: Other	16	0.13	0.34	0	1
Highest level of education					
10th	16	0.00	0.00	0	0
Plus 2/ 12th	16	0.00	0.00	0	0
Diploma after Plus 2/ 12th	16	0.00	0.00	0	0
Started college, did not complete/currently attending	16	0.00	0.00	0	0
College completed	16	0.13	0.34	0	1
Post Graduate	16	0.88	0.34	0	1
Other	16	0.00	0.00	0	0
Marital status					
Never Married	16	0.00	0.00	0	0
Married and Lives Together	16	1.00	0.00	1	1
Married but Lives Separately	16	0.00	0.00	0	0
Divorced	16	0.00	0.00	0	0
Separated	16	0.00	0.00	0	0
Widower	16	0.00	0.00	0	0
Refuse to answer	16	0.00	0.00	0	0
Children:Total	15	1.33	0.82	0	2
Children:Sons	16	0.63	0.72	0	2
Children:Daughters	16	0.69	0.70	0	2

Source: Survey of facilitators

Table A6: Summary statistics: Facilitators' training and business experience

Variable	N	Mean	Std Dev	Min	Max
Ever worked as a trainer before	16	0.94	0.25	0	1
How long worked as trainer: years	16	5.19	2.86	1	10
Ever attended a course on business skills or finance?	15	0.53	0.52	0	1
Ever acted as trainer for course on business skills or finance?	16	0.63	0.50	0	1
Do you own a business					
Yes I manage a business on my own	16	0.31	0.48	0	1
Yes I manage a business with someone else	16	0.06	0.25	0	1
No I do not own a business	16	0.56	0.51	0	1
Refuse to answer	16	0.06	0.25	0	1

Source: Survey of facilitators

Table A7: Summary statistics: Facilitators' preferences

Variable	N	Mean	Std Dev	Min	Max
Life satisfaction (ladder of 0-10)	15	7.07	2.25	3	10
Expected life satisfaction five years from now (ladder of 0-10)	15	8.40	2.32	1	10
Preferences (Strongly agree (5) - Strongly disagree (1)					
Enjoy handling problems that are completely new to you	15	4.53	0.64	3	5
Try to help people understand underlying concepts behind point you are asking	16	4.50	0.89	2	5
Consider cultural or social barriers when planning your interview	14	3.43	1.70	1	5
Enjoy trying to solve complex problems	15	4.20	1.26	1	5
Try to see people's perspectives when they are talking to you	15	4.33	1.40	1	5
Curiosity is the driving force behind much of what you do	15	4.67	0.62	3	5
Strongly motivated by the money you can earn	14	4.00	1.41	1	5
Strongly motivated by the recognition you can earn from other people	14	4.21	0.70	3	5
Think that most of the unhappy things in people's lives are due to mistakes they	15	3.47	1.36	1	5
Woman entrepreneur					
Main responsibility over business activity should be taking care of household	15	2.80	1.70	1	5
Shouldn't interact with male customers and suppliers without being accompanied	15	1.20	0.41	1	2
Should not earn more than her husband	16	1.06	0.25	1	2

Source: Survey of facilitators

A1.4 Survey data collection frequency

Table A8: Survey data frequency

Variables	*Baseline*	*Tracking*	*Endline*
Demographic characteristics	✓		
Business characteristics	✓		✓
Number of paid employees	✓	✓	✓
Number of female paid employees	✓	✓	✓
Number of male paid employees	✓	✓	✓
Sales (recall from previous survey and last month)	✓	✓	✓
Change in sales		✓	✓
Profits (recall from previous survey and last month)	✓	✓	✓
Change in profits		✓	✓
Product or production technique innovation	✓	✓	✓
Outcomes			
Business Practice Score Index	✓	✓	✓
Grit Index	✓		✓
Confidence Index	✓		
Locus of Control Index	✓		✓
Entrepreneurial Self Efficacy Scale	✓		✓
Personal Initiative Scale	✓		✓
Financial Index	✓		✓
Received business loan in past 6 months	✓	✓	✓
Loan amount	✓	✓	✓
Loan repayment period	✓	✓	✓
Interest rate on loan	✓	✓	✓
UPI:			
Have UPI account		✓	✓
UPI platform used		✓	✓
Main purpose of UPI usage		✓	✓
Frequency of UPI usage for business		✓	✓
Business payment processing through UPI		✓	✓
Types of transaction through UPI		✓	✓
UPI transaction data		✓	✓
Gender Norms (First order beliefs)	✓		✓
Gender Norms (Second order beliefs)	✓		✓
Perception of norms around women entrepreneurs	✓		✓
Business related perceived sanctions on women	✓		✓
Decision making Index	✓		✓
Social Desirability Index	✓		✓

A1.5 Baseline Survey: Summary Statistics and Balance Tests

Table A9: Summary statistics and Balance Tests

Variable	N	Mean	Std Dev	Min	Max	Control	Treatment	Difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Demographics								
Age	2558	41.13	9.25	20	77	41.172	41.085	-0.029
Age of spouse	2558	40.9	9.53	2	77	40.817	40.982	0.149
Household Size	2557	3.96	1	1	8	3.983	3.943	-0.038
No formal education or up to primary school	2558	0.07	0.25	0	1	0.062	0.071	0.009
Between 5th and 8th standard (Middle school)	2558	0.15	0.36	0	1	0.154	0.147	-0.006
Between 8th and 10th standard (High school)	2558	0.31	0.46	0	1	0.320	0.309	-0.011
Secondary school (10th-12th) or Vocational diploma	2558	0.33	0.47	0	1	0.328	0.328	0.001
Bachelor, master's or higher	2558	0.14	0.35	0	1	0.135	0.145	0.007
Child characteristics								
Number of children (total)	2558	1.7	0.86	0	5	1.688	1.706	0.020
Number of female children (total)	2558	0.76	0.8	0	4	0.745	0.767	0.021
Number of male children (total)	2558	0.94	0.76	0	4	0.944	0.939	-0.000
Number of female children (excluding firstborn)	2558	0.38	0.56	0	3	0.387	0.376	-0.011
Number of male children (excluding firstborn)	2558	0.42	0.56	0	3	0.409	0.428	0.022
Panel B: Business characteristics								
Business currently main occupation	2557	0.99	0.1	0	1	0.986	0.992	0.006
Owns business	2558	1	0.06	0	1	0.998	0.996	-0.001
Co-ownership of business	2554	0.29	0.45	0	1	0.283	0.290	0.003
Co-owned by spouse	732	0.73	0.44	0	1	0.713	0.747	0.041
Years since business founded	2557	10.45	8.6	1	123	10.053	10.838	0.817**
Engaged in business since founded	2557	0.96	0.2	0	1	0.957	0.962	0.006
Business has paid employees	2558	0.19	0.39	0	1	0.200	0.179	-0.020
Total sales in last month	1943	46020.12	85014.04	300	2500000	46,800.734	45,270.230	-887.231
Profits in the last active month	2491	16264.98	22321.04	0	850000	16,155.355	16,370.876	276.819
Business inactive in last month	2557	0.23	0.42	0	1	0.230	0.223	-0.004

Source: Baseline survey.
Notes: Differences in means are computed controlling for strata, that is, blocks and gender.

Table A10: Differences in Means by Sex at Baseline: Socioeconomic characteristics

Variable	(1) Male	(2) Female	(3) Difference	(4) Male Control	(5) Male Treated	(6) Difference	(7) Female Control	(8) Female Treated	(9) Difference
Panel A: Demographics									
Age	44.464	37.760	-6.707***	44.520	44.409	-0.068	37.759	37.760	0.010
Age of spouse	37.754	44.077	6.313***	37.826	37.684	-0.117	43.865	44.280	0.418
Household Size	3.993	3.932	-0.060	4.038	3.949	-0.087	3.928	3.937	0.010
No formal education or up to primary school	0.082	0.051	-0.030***	0.069	0.094	0.025*	0.055	0.048	-0.007
Between 5th and 8th standard (Middle school)	0.184	0.117	-0.067***	0.184	0.183	-0.000	0.124	0.111	-0.012
Between 8th and 10th standard (High school)	0.336	0.293	-0.044**	0.359	0.314	-0.046*	0.281	0.305	0.024
Secondary school (10th-12th) or Vocational diploma	0.279	0.378	0.099***	0.277	0.280	0.003	0.380	0.375	-0.001
Bachelor, master's or higher	0.120	0.161	0.042***	0.110	0.129	0.018	0.161	0.162	-0.004
Child characteristics									
Number of children (total)	1.602	1.793	0.191***	1.614	1.591	-0.020	1.764	1.822	0.061
Number of female children (total)	0.675	0.837	0.163***	0.668	0.683	0.016	0.823	0.851	0.025
Number of male children (total)	0.927	0.956	0.028	0.946	0.908	-0.036	0.941	0.971	0.036
Number of female children (excluding firstborn)	0.332	0.432	0.101***	0.342	0.322	-0.018	0.433	0.431	-0.003
Number of male children (excluding firstborn)	0.402	0.434	0.031	0.406	0.398	-0.005	0.411	0.457	0.049
Panel B: Business characteristics									
Business currently main occupation	0.991	0.987	-0.005	0.989	0.994	0.004	0.982	0.991	0.008
Owns business	0.997	0.997	-0.000	0.997	0.997	0.000	0.998	0.995	-0.003
Co-ownership of business	0.211	0.363	0.151***	0.209	0.213	0.003	0.360	0.367	0.003
Co-owned by spouse	0.559	0.831	0.238***	0.523	0.594	0.099	0.826	0.836	0.008
Years since business founded	12.218	8.672	-3.565***	11.987	12.443	0.452	8.085	9.234	1.185***
Engaged in business since founded	0.960	0.959	-0.001	0.964	0.957	-0.005	0.950	0.968	0.017
Business has paid employees	0.231	0.148	-0.083***	0.243	0.220	-0.022	0.157	0.138	-0.019
Total sales in last month	58,400.113	35,707.359	-22553.926***	57,155.938	59,624.719	3,344.883	37,976.652	33,571.062	-4,395.319
Profits in the last active month	19,152.172	13,347.486	-6,063.287***	18,568.207	19,723.223	1,185.886	13,686.669	13,023.817	-641.810
Business inactive in last month	0.301	0.151	-0.153***	0.303	0.300	-0.000	0.156	0.146	-0.008
Observations	1,285	1,273	2,558	635	650	1,285	623	650	1,273

Source: Baseline survey.

Notes: Differences in means are computed controlling for blocks.

Table A11: statistics and Balance Tests: Outcomes

Variable	N	Mean	Std Dev	Min	Max	Control	Treatment	Difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Outcomes								
Business Practice Score	2558	0.66	0.3	0	1	0.658	0.653	-0.006
Grit	2558	3.42	0.42	2	5	3.413	3.421	0.010
Confidence	2558	4.33	0.5	1	5	4.321	4.340	0.015
Locus of control	2558	3.24	0.46	1	5	3.233	3.251	0.020
Entrepreneurial self-efficacy	2558	3.92	0.7	2	5	3.925	3.920	-0.012
Personal Initiative	2558	3.12	0.69	1	5	3.126	3.120	-0.007
Think about problems that might happen in the future?	2558	2.8	1.18	1	5	2.773	2.820	0.045
Did you come up with new and useful solutions to problems?	2558	2.89	1.14	1	5	2.857	2.918	0.062
have new and useful ideas?	2558	2.99	1.13	1	5	3.015	2.972	-0.041
Try something new; something no other person in your community had done before?	2558	2.65	1.27	1	5	2.676	2.622	-0.060
Actively observe the environment to see how what is happening might affect your	2558	3.27	1.11	1	5	3.276	3.273	0.001
Look for information about customers and competitors of your product/service?	2558	3.13	1.13	1	5	3.117	3.142	0.026
Think about what you need, what you need to do and when you need to do it for yo	2558	3.38	1.03	1	5	3.406	3.354	-0.048
Set goals for what you want to achieve in your business?	2558	3.4	1.07	1	5	3.406	3.395	-0.013
Spend time planning how to prevent re-occurring problems in your business?	2558	3.2	1.11	1	5	3.217	3.179	-0.040
Seek information and feedback from other people about your business?	2558	3.36	1.04	1	5	3.365	3.365	-0.002
Make plans how to accomplish what you had to do for your business?	2558	3.28	1.08	1	5	3.279	3.277	-0.006
Financial Index	2558	0	0.52	-1	5	0.003	-0.001	-0.005
Has a bank account	2558	0.7	0.46	0	1	0.686	0.715	0.028*
Has a mobile money account	2558	0.64	0.48	0	1	0.641	0.634	-0.008
Make expense XX by next week without borrowing (in 1000)	2558	34.29	20.23	10	100	34.398	34.182	-0.205
Max amount you can borrow in 2 weeks (in 1000)	2558	51.23	88.15	-1	2000	52.070	50.408	-1.482
Received at least 1 loan in the past year	2558	0.32	0.47	0	1	0.328	0.308	-0.020
Gender norms (first order beliefs)	2558	0.27	0.34	0	1	0.262	0.270	0.009
Gender norms (second order beliefs)	2558	0.27	0.35	0	1	0.259	0.271	0.013
Perception of norms around women entrepreneurs	2558	4.91	2.24	1	10	4.851	4.973	0.089
Business related perceived sanctions on women	2558	0.21	0.25	0	1	0.209	0.212	0.003
Decision Making	2558	0.14	0.27	0	1	0.139	0.143	0.005
Social Desirability	2558	0.09	0.12	0	1	0.093	0.097	0.004

Source: Baseline survey.
Notes: Differences in means are computed controlling for strata, that is, blocks and gender.

Table A12: Differences in Means by Sex at Baseline: Outcomes

Variable	(1) Male	(2) Female	(3) Difference	(4) Male Control	(5) Male Treated	(6) Difference	(7) Female Control	(8) Female Treated	(9) Difference
Outcomes									
Business Practice Score	0.635	0.675	0.039***	0.637	0.633	-0.005	0.679	0.672	-0.006
Grit	3.450	3.384	-0.064***	3.433	3.466	0.034*	3.392	3.376	-0.015
Confidence	4.285	4.376	0.093***	4.254	4.315	0.057*	4.388	4.365	-0.027
Locus of control	3.246	3.238	-0.008	3.249	3.244	-0.003	3.217	3.258	0.043*
Entrepreneurial self-efficacy	3.816	4.030	0.213***	3.800	3.832	0.023	4.053	4.008	-0.047
Personal Initiative	3.110	3.136	0.022	3.108	3.111	0.005	3.145	3.128	-0.019
Think about problems that might happen in the future?	2.621	2.974	0.347***	2.606	2.635	0.032	2.942	3.005	0.058
Did you come up with new and useful solutions to problems?	2.829	2.948	0.116***	2.798	2.860	0.064	2.918	2.977	0.060
Have new and useful ideas?	3.044	2.942	-0.110**	3.075	3.014	-0.052	2.953	2.931	-0.030
Try something new; something no other person in your community had done before?	2.723	2.573	-0.154***	2.763	2.683	-0.079	2.587	2.560	-0.042
Actively observe the environment to see how what is happening might affect your business in the future?	3.347	3.202	-0.151***	3.337	3.357	0.025	3.215	3.189	-0.023
Look for information about customers and competitors of your product/service?	3.017	3.243	0.222***	2.990	3.043	0.051	3.246	3.240	0.001
Think about what you need, what you need to do and when you need to do it for your business?	3.385	3.374	-0.014	3.390	3.380	-0.004	3.422	3.328	-0.093*
Set goals for what you want to achieve in your business?	3.461	3.340	-0.125***	3.455	3.466	0.009	3.356	3.325	-0.035
Spend time planning how to prevent re-occurring problems in your business?	3.033	3.364	0.324***	3.050	3.017	-0.031	3.387	3.342	-0.050
Seek information and feedback from other people about your business?	3.415	3.314	-0.102**	3.409	3.420	0.008	3.319	3.309	-0.013
Make plans how to accomplish what you had to do for your business?	3.330	3.225	-0.108***	3.310	3.349	0.030	3.247	3.205	-0.043
Financial Index	0.005	-0.002	-0.009	0.007	0.002	-0.006	-0.000	-0.005	-0.004
Has a bank account	0.638	0.764	0.123***	0.625	0.651	0.023	0.748	0.778	0.033
Has a mobile money account	0.693	0.581	-0.113***	0.691	0.694	0.001	0.589	0.574	-0.017
Make expense XX by next week without borrowing (in 1000)	34.570	34.004	-0.619	34.437	34.700	0.241	34.359	33.664	-0.655
Max amount you can borrow in 2 weeks (in 1000)	65.886	36.427	-29.699***	67.514	64.296	-3.190	36.329	36.521	0.242
Received at least 1 loan in the past year	0.252	0.384	0.133***	0.266	0.238	-0.027	0.390	0.378	-0.013
Gender norms (first order beliefs)	0.098	0.436	0.337***	0.100	0.096	-0.002	0.427	0.444	0.020
Gender norms (second order beliefs)	0.089	0.443	0.353***	0.085	0.093	0.011	0.437	0.449	0.015
Perception of norms around women entrepreneurs	4.192	5.641	1.452***	4.079	4.302	0.191*	5.638	5.644	-0.013
Business related perceived sanctions on women	0.320	0.100	-0.221***	0.319	0.322	0.002	0.097	0.103	0.005
Decision Making	0.135	0.146	0.010	0.128	0.143	0.018	0.150	0.143	-0.008
Social Desirability	0.085	0.105	0.020***	0.084	0.086	0.003	0.102	0.108	0.005
Observations	1,285	1,273	2,558	635	650	1,285	623	650	1,273

Source: Baseline survey.
Notes: Differences in means are computed controlling for blocks.

A1.6 Enterprise Community Professionals (ECPs) in TNRTP/VKP

Enterprise Community Professionals (ECPs) are community members with experience in livelihoods and community mobilization. They support rural enterprise development and provide field-level assistance. Each village has 1 ECP, selected through the Panchayat Level Federation (PLF). For the Personal Initiative (PI) project, ECPs were engaged for their direct involvement at the project and community level. In the Vazhndhu Kattuvom Project (VKP), there are 9831 ECPs (both farm and non-farm) with 1 assigned to each village. For the PI project, 1 ECP was engaged per block - totaling 48 ECPs across 48 blocks. These ECPs were engaged as Training assistants and received 2 days orientation and honorarium of INR 1000 per session. If a session attains more than 80% attendance, they receive extra incentives.

ECPs act as frontline business facilitators in rural areas. They link entrepreneurs with financial, technical, and business support and strengthen rural enterprises through training and financial assistance. They are appointed through a formalized competitive process and ideally, it must be a women from the village. However, if no qualified woman is available, male household member can be chosen. ECPs must be between 25 and 45 years old. They need a degree in business administration, banking, commerce, social work, agriculture, food science or dairy. Other fields are considered if needed. ECPs must have experience in livelihood or enterprise support activities. They cannot be office bearers in community organizations or hold elected positions in local government. ECPs receive aperformance-based incentives.

ECPs received capacity-building training in various enterprise development and project and community service areas. Training topics included TNRTP/VKP project orientation, enterprise promotion training including formation and support for Producer Groups (PGs) and Enterprise Groups (EGs) and identifying individual and collective enterprises and providing business development services, technical and soft skills training, monitoring and performance evaluation and cross learnings including exchange programs within and across districts every six months and participating in peer-to-peer learning to share best practices.

Being the frontline support, ECPs play a crucial role in enterprise development, business financing and skill training at the community level. Their responsibilities are divided into individual enterprises, collectives, financing, and skills development.

1. Supporting Individual Enterprises (Nano, Micro, Small)
    - ECPs identify entrepreneurs and provide business-related information. They guide entrepreneurs in accessing business development services, including banking, government projects, and other technical support.
    - They collect and review enterprise applications. They assist in business plan preparation and provide training and ensure businesses meet environmental and social requirements.
    - ECPs help businesses secure loans and ensure timely repayment. They assist businesses in obtaining registration and certification.
2. Support for Enterprise Groups
    - ECPs assist in identifying and forming enterprise groups.
    - They provide business development support and training and help groups access financial services, including bank loans and project funds.
    - They assist with business registration and legal compliance.
3. Support for Producer Groups
    - ECPs identify and mobilize producers into groups.
    - They train producer groups and connect them with government schemes and funding
    - Help producer groups access technical and business development services.
4. Business Financing and Financial Awareness
    - ECPs spread awareness about TNRTP/VKP financial provisions. - They identify and screen potential entrepreneurs and guide entrepreneurs in

preparing loan applications. - They monitor loan usage and track business growth and ensure entrepreneurs maintain financial discipline and business records.

5. Skill Development and Employment Support

    - ECPs create awareness about job opportunities and mobilize candidates for skill training programs.
    - They track job placements (every 3 months) and monitor performance after training.
    - ECPs conduct counselling and career guidance sessions

A1.7 Testimonials and case studies of entrepreneurs

Female participant from Thandavarayathan Panchayat
I run a Xerox shop in my village. After attending the PI training, I gained valuable insights into expanding my business and exploring new opportunities. Each session provided me with new strategies and ideas to strengthen and grow my business. One of the most significant outcomes of the training was my decision to start an additional enterprise related to Computer Embroidery. The training helped me understand the steps involved and the challenges I might face. I have already completed the embroidery quotation and applied for an MGP loan. I am now awaiting the bank's approval, after which I plan to showcase the new enterprise. I am sincerely grateful to the trainer for the impactful training and guidance. I look forward to demonstrating how far I have come as a result of this training. As a mother of a child in 1st standard, this new enterprise will help me provide a better future for my family and ensure a stable livelihood for my child. My heartfelt wishes to Hand in Hand India for providing such a training.

Male participant from Thandalam, Chengalpet *My name is Raman, and I run a puncture shop at the OMR bus stop in Thandalam. I have been in this business for the past 20 years. I recently completed the Personal Initiative Training conducted by Hand in Hand India, where I learned valuable lessons on managing my business, making smart investments, and increasing profitability. The classes were very informative and motivated me to strive for greater*

success in life.

Female participant from Veerapandi, Salem

Lakshmi, residing in Raakipatti, Veerapandi, Salem, found inspiration to innovate her existing enterprise by taking part in the Personal Initiative Training. She has since conceptualized a new enterprise that deals with manufacturing natural skincare products. With support from SHG members, she is now developing a reliable and effective marketing strategy that aims to expand her team by offering employment opportunities to other women. Lakshmi is determined to effectively market her products and foster the growth of her new business.

Male participant from Musiri Block, Trichy

Mr. Perumal, aged 55, operates a Stationery Shop and Mobile Recharge Center in Musiri Block, Trichy, for the past 14 years. Throughout these years, he faced various challenges such as fire accident, that destroyed his shop and he met with an accident that led to his leg amputation. These mishaps made him lose confidence, which prevented him from concentrating on his business properly. He used to open his shop at 7:30 AM, however, he will be idle and at times sleep, whiling away time on watching videos online. He had no idea on how to gain additional revenue from his business. However, things changed once he took part in the PI training. He actively participated in the training and served as a role model for other participants. In the forthcoming months, he plans on establishing a Common Service Center (CSC) within his shop premises. Leveraging his ability to communicate in Hindi, he aims to cater to the needs of the local migrant labor force. His strategic approach includes diversifying his product offerings to specifically target this demographic, ensuring sustainable business growth. I sincerely thank the World Bank and Hand in Hand India for supporting me.