

# ENABLING DIGITAL ADOPTION AMONG RURAL WOMEN ENTREPRENEURS

INSIGHTS FROM A PILOT  
ON DIGITAL LEDGERS IN  
ASSOCIATION WITH THE  
DEENDAYAL ANTYODAYA  
YOJANA - NATIONAL RURAL  
LIVELIHOODS MISSION

**BASELINE REPORT | JULY 2023**





## Acknowledgements

This study was undertaken as part of LEAD at Krea University's Solutions for Transformative Rural Enterprises and Empowerment (STREE) program, which is supported by the Bill and Melinda Gates Foundation. The findings and conclusions in this publication are those of the authors and do not necessarily represent the views of the partners or LEAD at Krea University. The authors would like to thank MP Karthick, Santanu Pramanik, and Pramod Tiwari for their inputs on study design and sampling, reaching out to respondents, and their valuable feedback on our findings. The authors also thank representatives of the Deendayal Antyodaya Yojna - National Rural Livelihoods Mission (non-farm livelihoods) and the State Rural Livelihoods Missions of Maharashtra, Tamil Nadu and Karnataka for their enthusiastic support in designing and implementing the pilot intervention, and to Khatabook and myBillBook for backstopping the digital ledger component of the pilot. Our heartfelt thanks also to all the entrepreneurs and business development service providers (BDSPs) who took the time to participate in the study and share their experiences with us.

### **Copyright**

LEAD at Krea University (IFMR), 2023.

### **Authors**

Sijo John, Ryan D'souza

### **Research Team**

Mahima Chaki, Sunishtha Yadav, Aayasha Saxena, Vimisha Gohel, Aishwarya Joshi

### **Survey Team**

Santhosh Kumar, Mahantesh BS, Sayan Bhattacharjee

### **Editorial Support**

Diksha Singh, Keerthana Ramaswamy

### **Design**

Allan Macdonald, Sakthivel Arumugam

### **Suggested Citation**

John, S., & D'souza, R. (2023). Enabling Digital Adoption among Rural Women Entrepreneurs: Insights from a Pilot on Digital Ledgers in Association with the Deendayal Antyodaya Yojna - National Rural Livelihoods Mission. LEAD at Krea University.

### **Cover Photo Credit**

Paula Bronstein/Getty Images/Images of Empowerment

## **Table of Contents**

Abbreviations	6
Executive Summary	7
Background	9
Pilot Description	11
Assessment Methodology	14
Baseline Insights	18
Conclusion	32
Annexure 1: State-wise Implementation Timeline	34
Annexure 2: Baseline Factsheet - Ratnagiri	35
Annexure 3: Baseline Factsheet - Erode	39
Annexure 4: Baseline Factsheet - Tumkur	43
Endnotes	47

## List of Tables

Table 1: Sample Description (Planned)	16
Table 2: Baseline Sample Description	17
Table 3: Composition of the Qualitative Sample	17
Table 4: Top Businesses Across the Four Groups	23
Table 5: Digital Payment Use Frequency Among Entrepreneurs With Distinct Business Bank Account	29

## List of Figures

Figure 1: Intervention Design	13
Figure 2: Treatment and Control Arms for the e-FMS Pilot	15
Figure 3: Income Categories and Median Income	22
Figure 4: Education Attainment	23
Figure 5: Enterprise Premises	24
Figure 6: Enterprise Location	24
Figure 7: Number of Employees (Outside Family)	25
Figure 8: Formal Loan Uptake	25
Figure 9: Source of Loan	26
Figure 10: Transaction Type	26
Figure 11: Access to Smartphone (Sole or Shared Ownership)	27
Figure 12: Access to Smartphone (Sole or Shared Ownership)	27
Figure 13: Phone Usage	28
Figure 14: Digital Payment Usage	28
Figure 15: Record-keeping Frequency	29

## Abbreviations

B2B	Business-to-Business
B2C	Business-to-Consumer
BDSP	Business Development Service Provider
DAI	Development Alternatives Incorporated
DAP	District Anchor Person
e-FMS	e-Financial Management System
GST	Goods and Services Tax
KII	Key Informant Interview
MCRP	Master Community Resource Person
NRETP	National Rural Economic Transformation Project
DAY-NRLM	Deendayal Antyodaya Yojana-National Rural Livelihoods Mission
SHG	Self-Help Group
STREE	Solutions for Transformative Rural Enterprises and Empowerment
USAID	United States Agency for International Development

## Executive Summary

Entrepreneurs require access to timely and accurate financial information to make informed business decisions. However, many small business owners lack the technical skills to maintain financial records, and the process is time-consuming. They rely on recall rather than record. Innovations in computing technologies have helped in replacing error-prone and bulky manual bookkeeping practices with computerised accounting systems, available even on phones. Such cost-effective apps also offer services such as invoicing, inventory managements, follow-up services for receivables and producing financial statements.

In India, mobile phone usage has filled due to affordable devices and low-cost mobile data. It has also become a source of information and is used for obtaining education, healthcare and financial services digitally, particularly in the aftermath of the COVID-19 pandemic. However, there is a stark gender gap in phone usage in India, with 61% of men having phone access, as against 31% of women. Only one-third of the internet users are women, who tend to use cheaper, basic-features phone for calls and messaging. They also feel that their phone usage is surveilled; male members often receive messages and OTPs to monitor women's bank balances. Therefore, women entrepreneurs in particular, require focused support through their peer networks to embrace digitally transformative solutions, while tackling the inherent social norms-based challenges.

Under the Solutions for Transformative Rural Enterprises and Empowerment (STREE), LEAD is testing the efficacy of adopting digital ledgers by women entrepreneurs associated with the National Rural Economic Transformation Project (NRETP), implemented by the Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM). The pilot aims to a) utilize the competitive private app space to identify an easy-to-use solution, b) understand the digital adaptability of Self-help Group (SHG)-run enterprises, c) assess major bottlenecks in bookkeeping by nano entrepreneurs, and d) measure the ease of performance tracking for NRETP enterprises by BDSPs using transparent records. It uses the Business Development Service Providers (BDSP) trained under NRETP to acquire users for the two partner apps – Khatabook and MyBillBook. Khatabook is being tested with cohorts in Ratnagiri, Maharashtra and Tumkur, Karnataka, while myBillBook is being tested in Erode, Tamil Nadu. These states were selected based on the following criteria: a) whether they were implementing the National Rural Economic Transformation Project (NRETP), b) mobile usage among women in the state (derived from the NFHS-5 round, 2020-21) and c) internet connectivity (reported by the Internet and Mobile Association of India, 2020).

The pilot is designed for a duration of five months, with Business Development Service Providers assisting the entrepreneurs in using the digital ledger app. In the first two months, BDSPs will contact the entrepreneurs on a weekly basis to support them in adopting the digital ledger. In the next two months, LEAD's personnel will call the entrepreneurs over the phone and nudge them to use the app. In the last month, the entrepreneurs will be left free to use the app of their own volition. Throughout this period, the usage stats of the pilot cohort is tracked by the app partners. A scalability assessment report will be prepared and shared with the partner states and the DAY-NRLM.

This baseline report presents insights from the implementation sites on the entrepreneurial profile, phone use patterns, and bookkeeping practices before the intervention rollout.



## KEY INSIGHTS

At the baseline, across all states, the difference between the treatment and control arms was negligible. Therefore, the baseline findings do not distinguish between the two arms in this report. We demarcate four categories of SHG entrepreneurs based on the parameter of “income earned from business in the preceding month”. More than 80 per cent of the entrepreneurs across the three districts- Ratnagiri, Tumkur and Erode - earned under INR 25,000 in the preceding month. In the subsequent analysis, we have segregated the practice insights across the four categories using the analogy of an airplane taking to the skies: a) taxiing entrepreneurs (income less than INR 10,000), b) lift-off entrepreneurs (income between INR 10,000 to INR 25,000), c) ascending entrepreneurs (income between INR 25,000 to INR 40,000) and d) airborne entrepreneurs (income greater than INR 40,000).

### ***Enterprise and Entrepreneur Profile -***

Nearly 50 per cent of the entrepreneurs are concentrated in the production sector in the sub-INR 25,000 stage; the preponderance of trading units increases with higher income levels. Across all categories, most entrepreneurs have completed matriculation; entrepreneurs drawing higher income from the business in the preceding month are more likely to have higher education levels. The likelihood of operating a home-based enterprise decreases as the income increases; nearly half the highest-income entrepreneurs operate outside the home premises with a temporary structure/kiosk/stall, with 73% of the enterprises in this category operating near a highway or main road. Most enterprises across all four categories operate as solopreneur-run enterprises or with labour drawn from the family. Across all categories, most entrepreneurs have received a loan from a formal banking channel including from SHGs, banks or other financial institutions. The likelihood of obtaining formal loans from banks is three times higher for airborne entrepreneurs as compared to taxiing entrepreneurs. More than 70% of the entrepreneurs across all four categories sell directly to end customers.

### ***e-Readiness -***

More than 60% of the entrepreneurs, across all categories, have access to smartphone. The percentage of entrepreneurs having primary ownership of the phone is lower, with more than 50% of the respondents sharing the smartphone with other family members. The most common use of the phone was reported to be for calling, followed by the use of social media applications such as WhatsApp and Facebook. Although digital payments rank low in the overall preferred usage, there is a gradual increase in uptake as income increases. While more than half the entrepreneurs profess maintaining transaction records, lift-off entrepreneurs are most likely to be maintaining daily records. Qualitative insights indicate a guarded approach to transparent record-keeping owing to taxation worries. Only two out of the 294 entrepreneurs who maintain written records mentioned using a digital book-keeping solution. Most entrepreneurs require specific training on financial management. Marketing, packaging, labelling and sales lead generation, in addition to the financial management of the business, emerged as major areas requiring training and support during the qualitative interviews with the entrepreneurs. BDSPs reiterated their need for refresher training sessions to offer better consultancy services to entrepreneurs. They felt the challenges faced by entrepreneurs in maintaining financial records are primarily owing to a lack of education, followed by entrepreneurs juggling between household work and business, thereby facing time constraints in noting down expenses.



# 1 Background



Photo credit: Paula Bronstein/Getty Images/Images of Empowerment

The success of any business enterprise lies in its ability to manage its resources in an effective way. In order to make important business decisions, entrepreneurs should have access to financial information such as the estimation of input costs and the requirement of capital to be raised ([Rachapaettayakom et al., 2020](#)). This is only possible when enterprises have an adequate record of their business transactions which in turn helps them ascertain whether the enterprise is profitable. The absence of financial records can often lead to enterprises hitting a cash flow crisis, burning money, and failing to utilize business expansion opportunities ([Seman et al., 2019](#)). Although record keeping is a fundamental skill for entrepreneurs, many small enterprises are not obligated to maintain records and hence do not keep proper books of records. They find record keeping to be time-consuming, difficult to maintain, and lack the necessary technical skills ([Rajaram & O'Neill, 2009](#)). Such entrepreneurs are already so busy with the day-to-day operations of the business that they are unable to gain the necessary financial skills ([Rachapaettayakom et al., 2020](#)). Besides, they also feel that any disclosure of their financial records can reveal the tax liabilities of the enterprise ([Chhabra & Pattanayak, 2014](#)). Thus, it is a general practice among small entrepreneurs to maintain their financial records in their minds rather than through written records.

Innovations in computer, internet, and mobile technologies have paved the way for considerable development in ICT (Information and Communication Technology) for business. This has supported the exchange of large amounts of data and information within and among different organizations ([Vadgama et al., 2019](#)). Computerized accounting systems have replaced manual accounting systems which were time-consuming and prone to errors. Financial data can now be processed faster and more accurately than before while also saving time and cost. Moreover, for auditing and taxation purposes, financial statements can also be shared digitally with external accountants rather than submitting stacks of manual documents ([Rahmayanti & Rahmawati, 2018](#)). The development of mobile applications that provide record-keeping services has also made it easier for small enterprises to avail of these services without having to invest in information technology infrastructure ([Kamau et al., 2023](#)). Apart from being cost-effective, such applications also offer other benefits such as invoicing, inventory management, reminders for receivables, and producing financial statements ([Rahmayanti & Rahmawati, 2018](#)) ([Kholid et al., 2020](#)) ([Kamau et al., 2023](#)) ([Rajput et al., 2022](#)). Small enterprises are more likely to adopt mobile applications if they find them easier to use and does not require high technical accounting knowledge for the same. Since such enterprises prefer to use a single-entry system, mobile applications are helpful in changing single-entry records into double-entry records in order to generate financial statements ([Kamau et al., 2023](#)).

The digital space in India has seen tremendous growth in the past few years primarily due to the increase in the use of smartphones. This can be credited to the availability of affordable phones coupled with low mobile data prices ([GSMA, 2019](#)). The COVID-19 pandemic also highlighted the importance of phones for accessing information and obtaining education, healthcare, and financial services digitally ([GSMA, 2022](#)). While the overall reach of mobile phones has significantly increased, there is a stark gender gap with 61% of men having a mobile phone compared to 31% of women. Additionally, only one-third of internet users are women, and 33% less likely to use mobile internet services than men ([Oxfam India, 2022](#)). The gap also widens with the sophistication of mobile tasks. Women tend to use less expensive mobile phones whose usage is primarily limited to calls and messaging ([Tyers-Chowdhury & Binder, 2021](#)). Besides, gendered social norms also have played a role in dictating digital access to women. While women do not feel that their usage of the phone is being directly monitored by their family members, they often use the phones inside their homes to avoid any suspicion. While in the case of unmarried women, usage of mobile phones is viewed as a risk to her reputation, married women too have to face the brunt of normative behavior where prolonged phone use in the public indicates to the community that she is not focused on her household work ([Barboni et al., 2018](#)). Although the pandemic has pushed the usage of digital financial applications for women who operate smartphones, male family members often receive messages and OTPs so as to monitor their bank balance ([Sonne, 2021](#)). Women with limited digital literacy have to often rely on their family members to teach them to use a mobile phone. In most cases, where husbands are unwilling to assist them, they rely on their children ([Barboni et al., 2018](#)) ([Sonne, 2021](#)).

Digital adoption by women entrepreneurs, therefore, cannot rely on popularity-based diffusion alone, and should harness the federated networks nurtured under the Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM).

# 2 Pilot Description



*Photo credit: Paula Bronstein/Getty Images/Images of Empowerment*

## Overview

A variety of private mobile-based apps provide entrepreneurs with a performance-tracking system at their fingertips. This can potentially do away with the arithmetic overload of keeping track of copious manual ledgers and assist in settling debtor and creditor accounts efficiently. Proper documentation of financial records can assist the entrepreneur in establishing their creditworthiness with formal financial institutions for availing growth and working capital.

Solutions for Transformative Rural Enterprises and Empowerment (STREE) provides technical assistance to the DAY-NRLM in the implementation of interventions for scalable enterprises under the National Rural Economic Transformation Project (NRETP). NRETP relies on a cadre of Business Development Service Providers (BDSP) to provide an array of consultancy services to rural entrepreneurs affiliated with the DAY-NRLM federations. In the NRETP design, one-stop facilities (OSFs) have been established for 2-4 contiguous blocks across 13 states in the country. Each block within the OSF is served by 5-10 BDSPs, with the OSF being their headquarters. The number of blocks under a single OSF varies as per the district's context. For instance, in Tumkur (Karnataka) and Ratnagiri (Maharashtra), the OSF to block ratio is 1:1. In Erode (Tamil Nadu) and Rajsamand (Rajasthan), the ratio is 1:2. A district may have more than one OSF. In each block, at least 150 growth-potential enterprises are selected for support under NRETP in consultation with the managing committee of the OSF.

In the e-Financial Management Pilot, STREE has partnered with two digital ledger applications, Khatabook and myBillbook, to test the efficacy of digital ledgers to improve the record-keeping practices of growth enterprises within the NRETP. The pilot is under implementation in three districts: Ratnagiri (Maharashtra), Erode (Tamil Nadu), and Tumkur (Karnataka).

## Objectives

The pilot intends to achieve the following objectives:

1. Utilize the competitive private app space to identify a performance tracking system that is easily downloadable and maintainable
2. To understand the digital adaptability of the SHG-run enterprises
3. Assess the major bottlenecks that impede the practice of bookkeeping by nano/micro-entrepreneurs
4. Measuring the ease of performance tracking for NRETP enterprises by BDSPs using transparent records

The research questions, drawing from the above objectives are:

1. What is the monthly and daily usage rate among entrepreneurs?
2. What is the frequency of usage of each of the apps?
3. How much time do entrepreneurs spend on the app for each day and session?
4. Is the application interface user-friendly and easily accessible by entrepreneurs?
5. Is business information being adequately collected using the apps?
6. Can apps replace manual daybooks for the purpose of bookkeeping?
7. Which set of specifications is most optimal for bookkeeping by DAY-NRLM entrepreneurs? For instance, a) do they require a symbol and heuristic-based UX design, b) are any specific tweaks required in the current apps (catering largely to an urban/ peri-urban audience) to make it more accessible to rural entrepreneurs with varying literacy attainment levels?

## Implementation Design

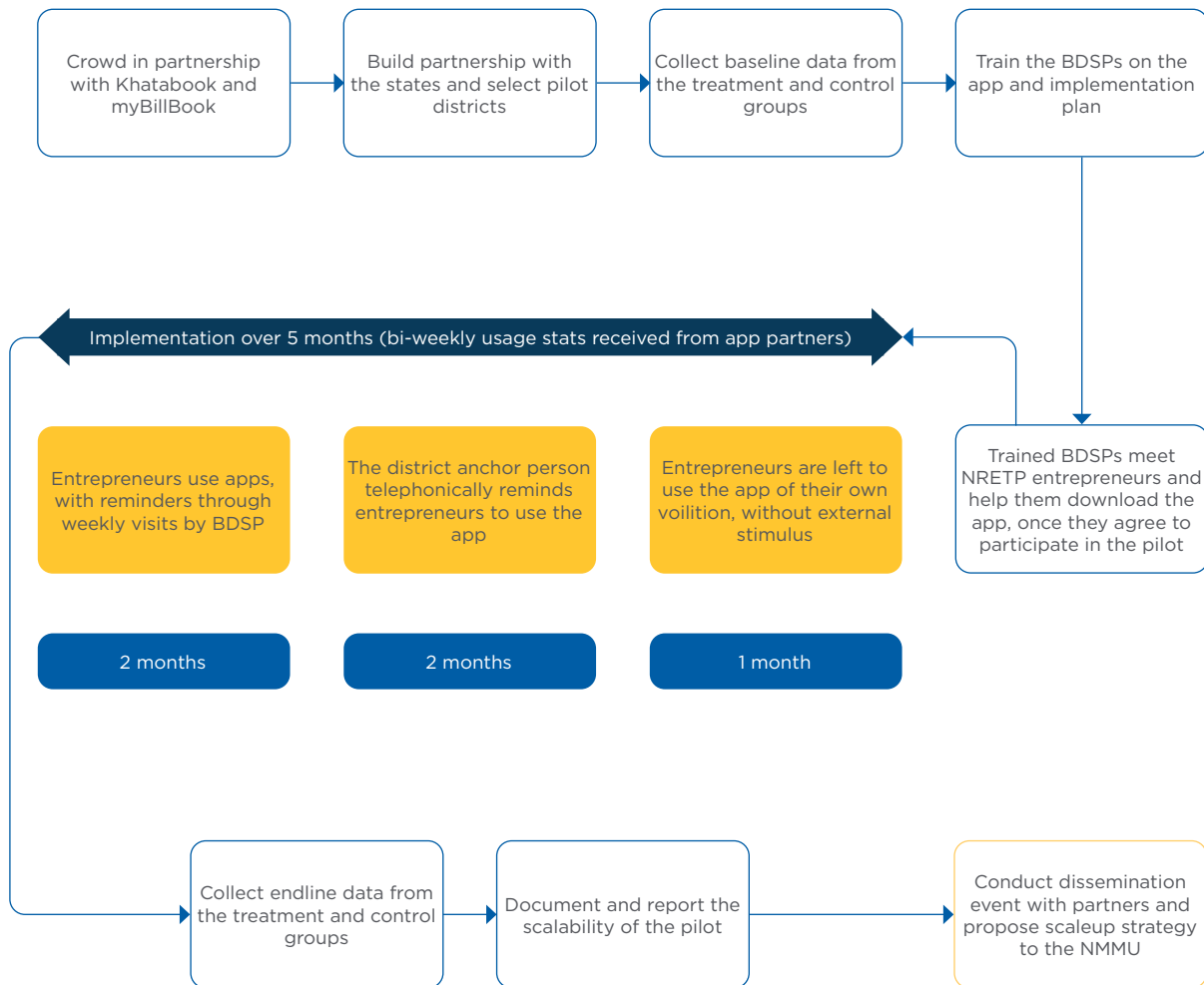
The pilot is designed as a layered intervention, leveraging existing apps and the DAY-NRLM cadre. LEAD has partnered with two leading apps, **Khatabook** and **myBillbook** to test their apps with women entrepreneurs from rural India. Khatabook is a digital ledger app that helps micro, small, and medium enterprises track transactions safely and efficiently. MyBillBook is a GST billing & accounting software that allows users to record all cash/bank/credit transactions and track

growth. BDSPs perform the function of the feet-on-street team to mobilize entrepreneurs to use the apps. They are supported by the District Anchor Person (DAP) placed in each district by LEAD in planning the visits and for refresher training sessions on the pilot.

For entrepreneurs to become sticky users, they are nudged through multiple, continuous touchpoints. In this pilot, BDSPs are expected to visit entrepreneurs in their catchment area every week for 2 months; this translates into eight touchpoints and reminders for the entrepreneurs. In addition to app sensitization, LEAD is also making use of the content designed by [USAID and DAI's Digital Frontiers](#) on financial management using digital means.

In months 3 and 4, the entrepreneurs receive telephonic nudges to continue using the app through the DAP. In month 5, the entrepreneurs are left to use the app of their own choice.

**Figure 1:** Intervention Design



## Partners

This pilot is being conducted in partnership with the DAY-NRLM and the State Rural Livelihoods Missions (SRLM) of Maharashtra, Tamil Nadu, and Karnataka. STREE has partnered with myBillbook and Khatabook, popular digital ledger services offered through mobile devices to track usage statistics of the pilot cohorts.

# 3

# Assessment Methodology



Photo credit: Paul F. Connerdin, Getty Images/ Images of Empowerment

## Pilot Sites

The states were selected by the DAY-NRLM based on the following criteria:

- Should be an NRETP implementing state
- Should have mature federations, assessed through prior experience in implementing enterprise programs
- High internet connectivity, based on data from the Internet and Mobile Association of India, May 2020
- High mobile phone usage by women, based on indicators from the National Family Health Survey - round 5 (2020-21)

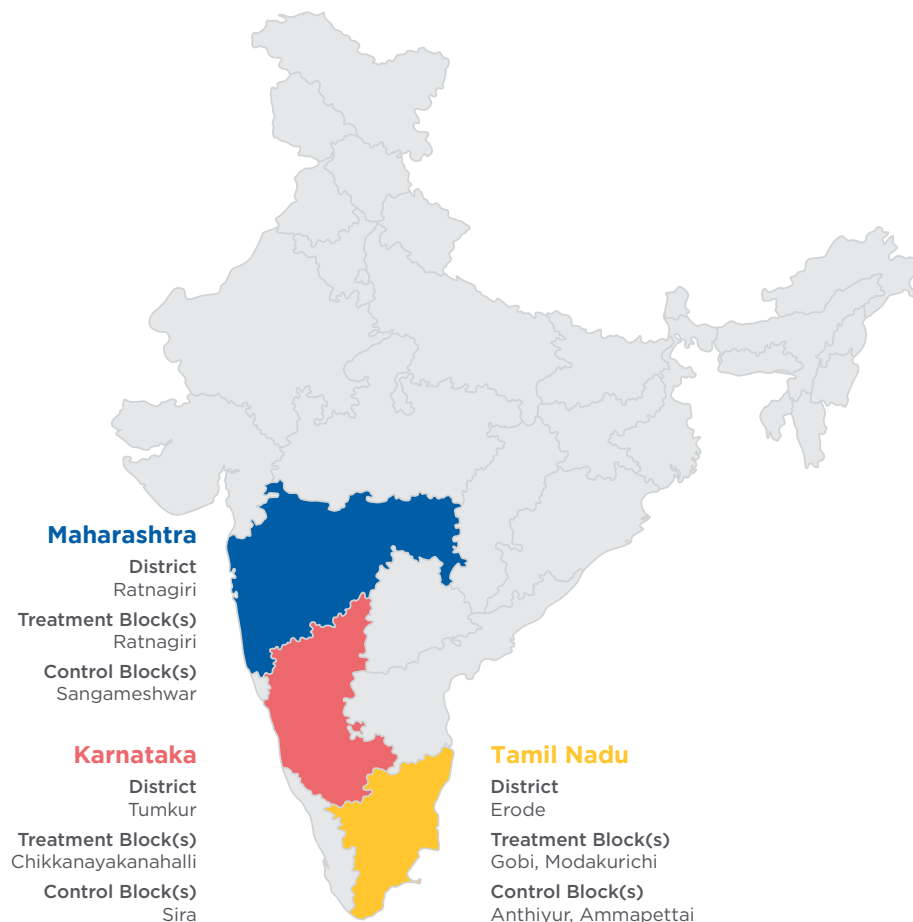
Karnataka, Tamil Nadu, and Maharashtra were the selected states.

## Evaluation Design

The pilot is being evaluated using a quasi-experimental design. Within each state, the SRLM selected the intervention district such that each district adhered to the state-level selection criteria and had at least 2 comparable OSFs (similar socio-economic background, level of urbanization, etc). The two comparable OSFs were assigned as **treatment** and **control** in consultation with the district administration. In the intervention blocks, entrepreneurs are trained on using the selected digital ledger by the BDSP, coupled with regular follow-ups to encourage usage over 4-5 months. The usage stats for the enrolled entrepreneurs is tracked by the app partners. In Tamil Nadu, myBillBook is being tested and in Maharashtra and Karnataka, Khatabook is the app under use for this pilot. In the control blocks, no intervention is delivered beyond the usual DAY-NRLM training sessions on bookkeeping.

Baseline and endline data will be collected from both the treatment and control arms in all three states to facilitate comparison over time and to control for any externalities. Figure 2 shows the treatment and control arms across the three states.

**Figure 2:** Treatment and Control Arms for the e-FMS Pilot



## Methodology

The pilot uses a mixed-methods approach to assess the effect of the intervention.

### Quantitative inquiry

Short surveys will be conducted to assess the effectiveness of each of the two digital ledger applications. The assessment will cover the ease and frequency of book-keeping in the app-based methods as compared to book-keeping in the manual method.

We will assess the information on the key indicators at the beginning (baseline) as well as at the end of the project (endline) to inform the project progress using the difference-in-difference (DID) method. This method is used to estimate the effect of a specific intervention by comparing the changes in outcomes over time between a population that is enrolled in the program (the intervention group)<sup>1</sup> and a population that is not (the control group). We will compare the change in indicators over time to control for externalities such as training sessions/refreshers on bookkeeping organized by the state missions, the introduction of a performance tracking system by DAY-NRLM for OSF enterprises, etc. The methodology assumes that the program was the only factor influencing changes in the outcome over time. If the program did not exist, outcomes would be the same before and after the study period.

### Qualitative inquiry

Key informant interviews will be conducted with entrepreneurs and BDSPs across the control and treatment areas at both the baseline and endline. The goal of the assessment would be to assess each application's usage, accessibility, and features.

## Sampling Design

The intervention is planned for NRETP entrepreneurs, i.e., SHG entrepreneurs who've sought some degree of formalization for their businesses. Therefore, the sampling frame comprises enterprises that have been identified for support under NRETP. The sampling frame for the survey is drawn from the NRETP enterprise listing data received from the district mission management units. The sample distribution is summarized in Table 1.

**Table 1:** Sample Description (Planned)

		Quantitative	Qualitative
<i>Baseline</i>		# Surveys	# KII
State 1	OSF 1 (1T)	75	25
	OSF 2 (1C)	75	
State 2	OSF 3 (2T)	75	25
	OSF 4 (2C)	75	
State 3	OSF 5 (3T)	75	25
	OSF 6 (3C)	75	
<b>Baseline Total</b>		<b>450</b>	<b>75</b>
<i>Endline</i>			
State 1	OSF 1 (1T)	75	25
	OSF 2 (1C)	75	
State 2	OSF 3 (2T)	75	25
	OSF 4 (2C)	75	
State 3	OSF 5 (3T)	75	25
	OSF 6 (3C)	75	
<b>Endline Total</b>		<b>450</b>	<b>75</b>



Using the enterprise listing data for NRETP, the proportion of production, services and trading units in the block is estimated. The sampled enterprises were proportionally allocated to three types of enterprises. For the qualitative survey, 25 key informant interviews were conducted with the BDSPs and entrepreneurs across the treatment and control groups.

### **Specifics of the Baseline Sampling**

The total sample size at baseline is 503. Table 2 shows the sample distribution across the states and between treatment and control arms.

**Table 2:** Baseline Sample Description

	<b>Maharashtra</b>	<b>Tamil Nadu</b>	<b>Karnataka</b>
<b>District</b>	Ratnagiri	Erode	Tumkur
<b>Time period</b>	November 2022	January 2023	February 2023
<b>Sample size (quantitative)</b>	154 T:80 C:74	178 T:92 C:86	171 T: 87 C:84
<b>Sample size (qualitative)</b>	25	25	25

Key informant interviews with women entrepreneurs and BDSPs were conducted across the treatment and control blocks. The composition of the qualitative sample is given in Table 3. In Ratnagiri, we also interacted with Master Community Resource Persons (MCRP), an additional cadre supporting enterprise-related activities in the district.

**Table 3:** Composition of the Qualitative Sample

<b>State</b>	<b>District</b>	<b>Production</b>	<b>Trading</b>	<b>Services</b>	<b>BDSP/M-CRP</b>
Maharashtra	Ratnagiri	13	4	5	3
Tamil Nadu	Erode	12	8	1	4
Karnataka	Tumkur	8	7	2	9
<b>Total</b>		<b>33</b>	<b>19</b>	<b>8</b>	<b>16</b>

# 4

## Baseline Insights



Photo credit: Paula Bronstein/Getty Images/Images of Empowerment

# PROFILE OF THE RESPONDENTS ACROSS ALL 3 STATES

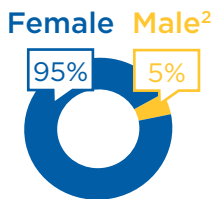
(Sample Size - 503)



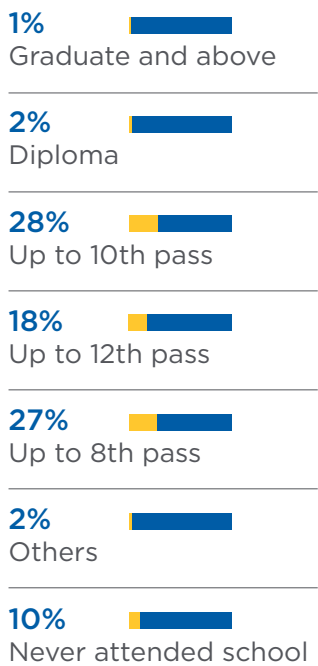
## ENTREPRENEUR PROFILE



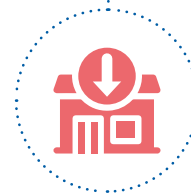
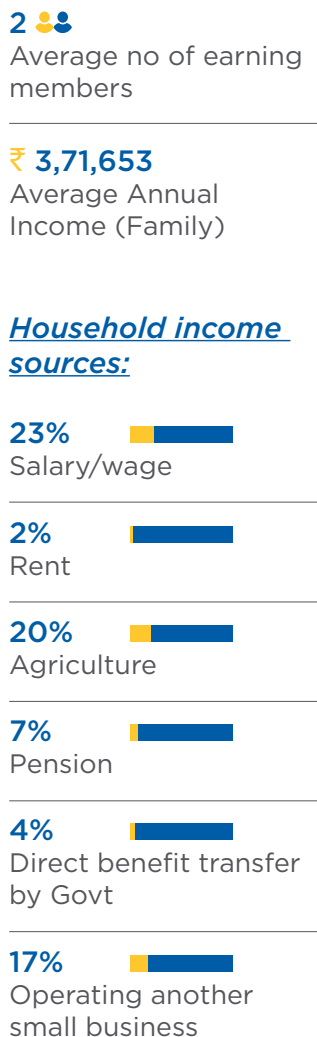
### GENDER



### EDUCATION

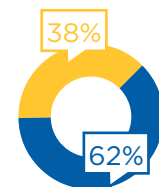


### HOUSEHOLD FEATURES



### ENTERPRISE IMPORTANCE

Primary source of income for the entrepreneur



Secondary source of income for the entrepreneur

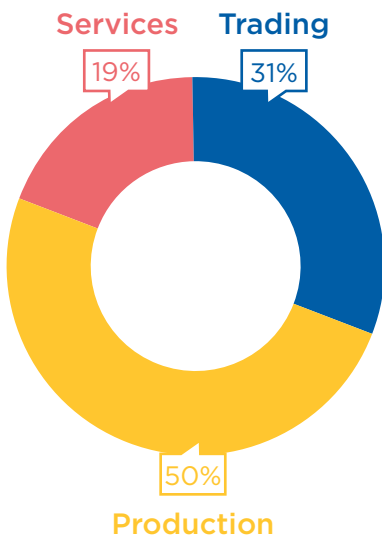
₹ 14,786: Average earning from enterprise in the month preceding data collection



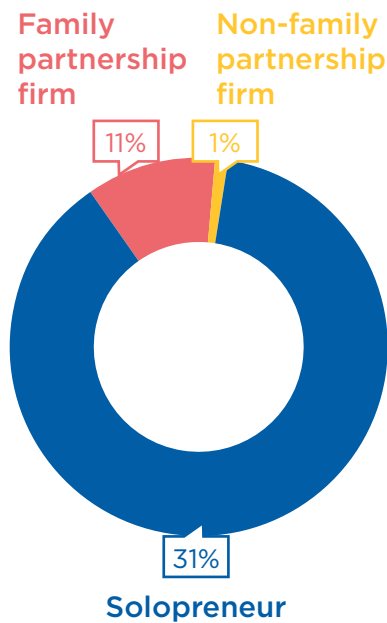
## ENTERPRISE PROFILE



### TYPE OF ENTERPRISE



### OWNERSHIP TYPE



### CREDIT

**82.50%** Whether any loan ever received for enterprise

#### Source of loan:<sup>3</sup>

**71%** Self-help group

**15%** Bank

**27%** Other Financial Institutions



## KEY INSIGHTS

### ***Enterprise and Entrepreneur Profile -***

1. Most entrepreneurs are concentrated in the production sector in the sub-INR 25,000 stage
2. Across all categories, most entrepreneurs have completed matriculation; entrepreneurs drawing higher income from the business in the preceding month are more likely to have higher education levels.
3. The likelihood of operating a home-based enterprise decreases as the income increases; nearly half the highest income entrepreneurs operate outside the home premises with a temporary structure/kiosk/stall, with 73% of the enterprises in this category operating near a highway or main road.
4. Most enterprises across all the four categories operate as solopreneur-run enterprises or with labor drawn from the family
5. Across all categories, most entrepreneurs have received a loan from a formal banking channel including from SHGs, banks or other financial institution
6. More than 70% of the entrepreneurs across all four categories sell directly to end customers

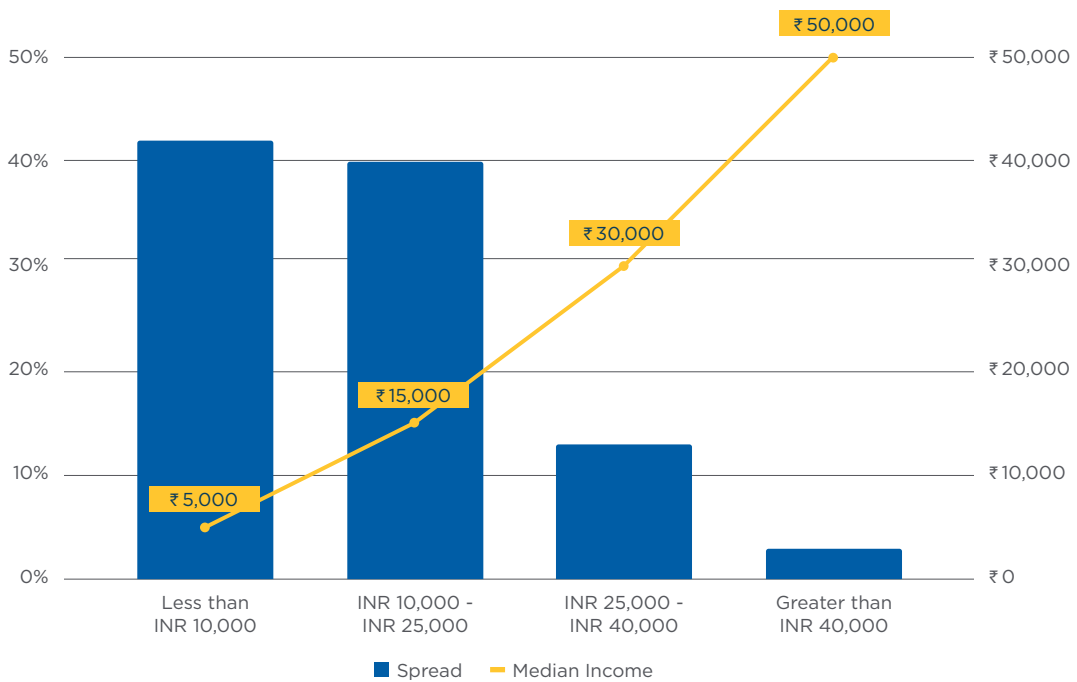
### ***e-Readiness -***

1. More than 60% of the entrepreneurs, across all categories, have access to smart phone
2. The most common use of the phone was reported to be for calling, followed by use of social media such as WhatsApp, Facebook etc.
3. While digital payments rank low in the overall preferred usage, there's a gradual increase in uptake as income increases
4. While more than half the entrepreneurs profess maintaining transaction records, entrepreneurs earning between INR 25,000 to INR 40,000 are most likely to be maintaining daily records. Qualitative insights indicate a guarded approach to transparent record-keeping owing to taxation worries
5. Only 2 out of the 294 entrepreneurs who maintain written records mentioned using a digital book-keeping solution
6. Most entrepreneurs require specific training on financial management

At the baseline, across all states, the difference between the treatment and control arms was negligible. Therefore, the baseline findings do not distinguish between the two arms in the following summary. This section outlines key insights across all the states. State-wise factsheets are added as annexures to this report.

We demarcate four categories of SHG entrepreneurs based on the parameter of “income earned from business in the preceding month”. We’ve used the analogy of an airplane taking off towards its destination and broken the income categories to *taxiing*, *lift-off*, *ascending*, and *airborne entrepreneurs*. In the subsequent analysis, we have segregated the practice insights across the four categories. Figure 3 showcases the four categories and their median incomes the month before the data collection. More than **80%** of the entrepreneurs earned under INR 25,000 across the three districts in the preceding month.

**Figure 3:** Income Categories and Median Income



## INCOME CATEGORIES



**TAXIING ENTREPRENEURS**



**LIFT-OFF ENTREPRENEURS**



**ASCENDING ENTREPRENEURS**



**AIRBORNE ENTREPRENEURS**

*Income from the business in the preceding month*

Less than INR 10,000

INR 10,000 - INR 25,000

INR 10,000 - INR 25,000

Greater than INR 40,000

# Enterprise and Entrepreneur Profile

## 1. Most entrepreneurs are concentrated in the production sector in the sub-INR 25,000 stage

Entrepreneurs are most likely to be in the production sector in the taxiing and lift-off categories. Nearly 50% of taxiing entrepreneurs engage in this sector, with tailoring, food processing, and foot mat production emerging as the top enterprise choices among them. The preponderance of trading units increases as the income level rises, with 1 in 5 airborne entrepreneurs running a Kirana store.

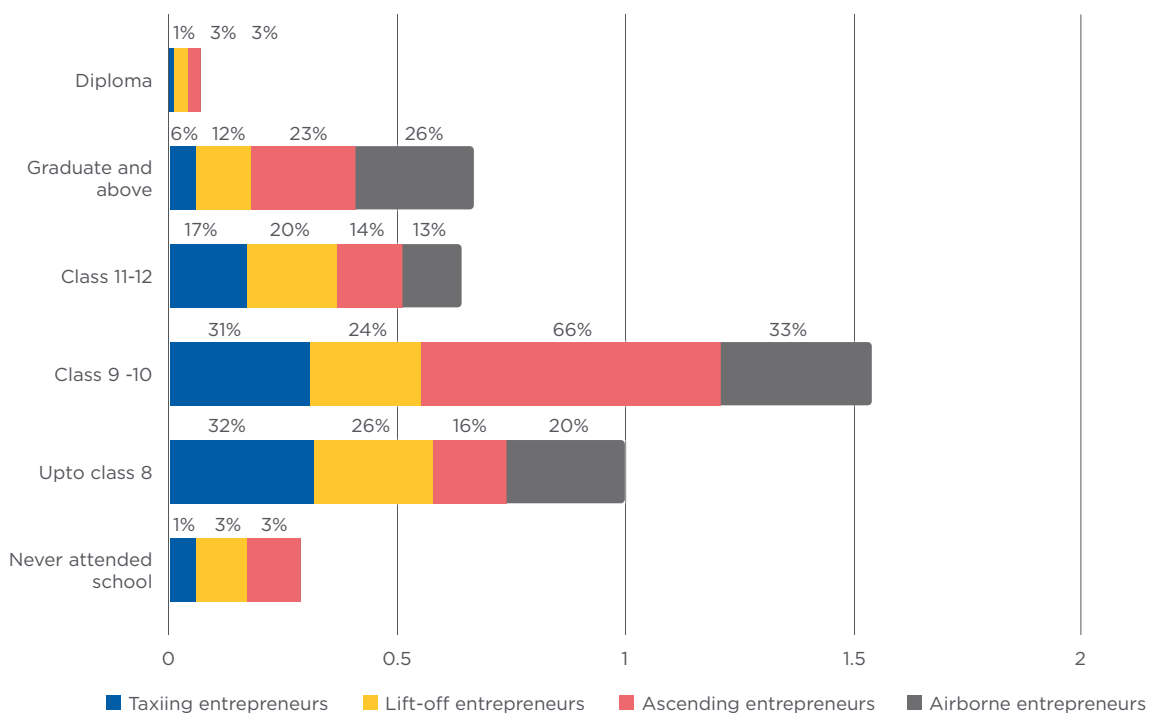
**Table 4:** Top Businesses Across the Four Groups

Category	Top Businesses
<b>Taxiing entrepreneurs</b>	Tailoring (bags and clothes) - 25% Production of papad/masala/Konkani products/food items - 14% Foot mat manufacturing - 10%
<b>Lift-off entrepreneurs</b>	Kirana store - 19% Production of papad/masala/Konkani products/food items/snacks/pickles - 11% Readymade garments store - 8%
<b>Ascending entrepreneurs</b>	Kirana store - 21% Readymade garments store - 11% Tailoring (clothes) - 8%
<b>Airborne entrepreneurs</b>	Kirana store - 20%

## 2. Across all categories, most entrepreneurs have completed matriculation; entrepreneurs drawing higher income from the business in the preceding month are more likely to have higher education levels

Among entrepreneurs earning less than INR 25,000 in the preceding month, there’s a near-equal split between those who’ve completed schooling up to class 8 and those who’ve completed matriculation (see Figure 4). In the higher than INR 25,000 groups, the likelihood of being a graduate nearly doubles in comparison to the sub-INR 25,000 groups.

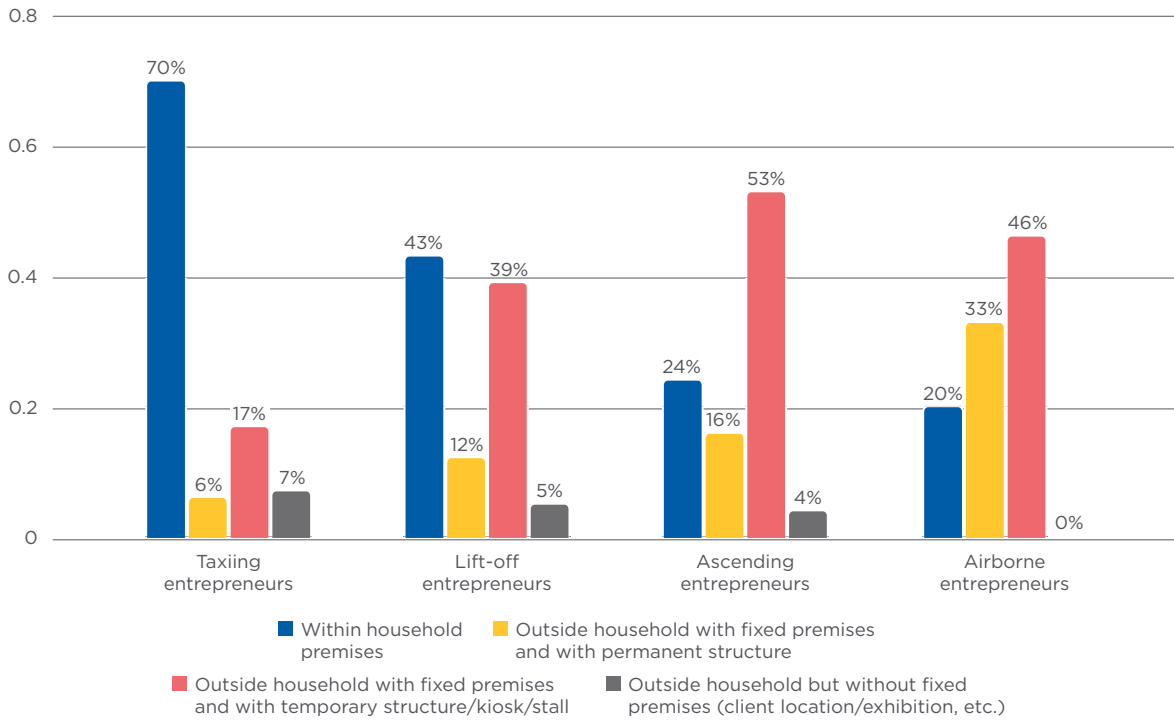
**Figure 4:** Education Attainment



**3. The likelihood of operating a home-based enterprise decreases as the income increases; nearly half the highest-income entrepreneurs operate outside the home premises with a temporary structure/kiosk/stall, with 73% of the enterprises in this category operating near a highway or main road.**

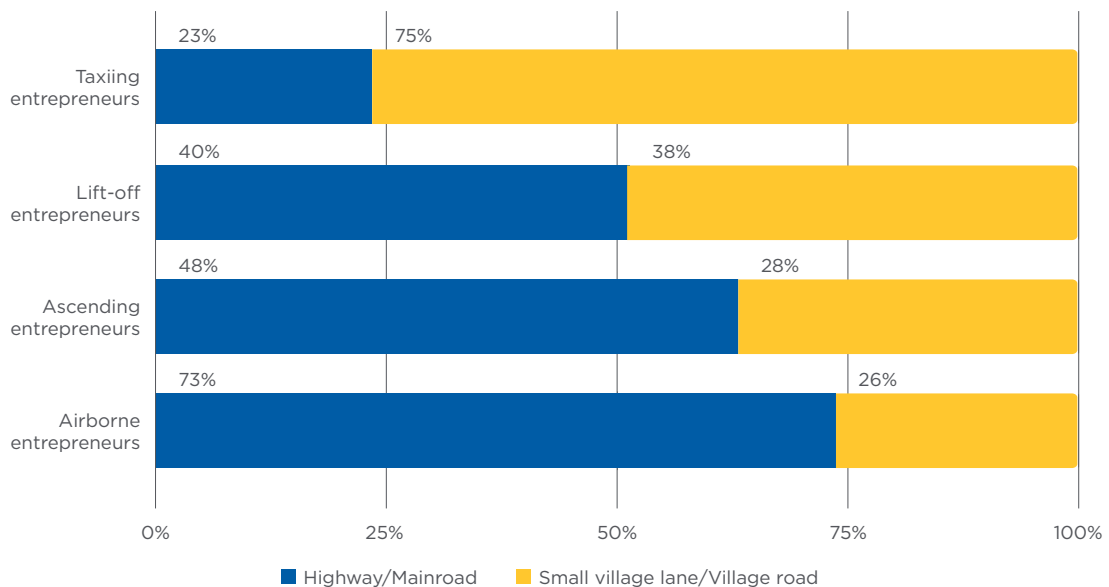
There is a clear linear progression in enterprises operating from fixed premises outside of the home income category progresses (Figure 5). There is a greater preference for operating out of temporary structures in fixed places such as kiosks/ stalls than fixed premises with permanent structures in the higher income groups.

**Figure 5:** Enterprise Premises



We also see that most of the taxiing entrepreneurs are located on either small village lanes or village roads, while the higher-income group entrepreneurs operate from main roads or highways (Figure 6).

**Figure 6:** Enterprise Location

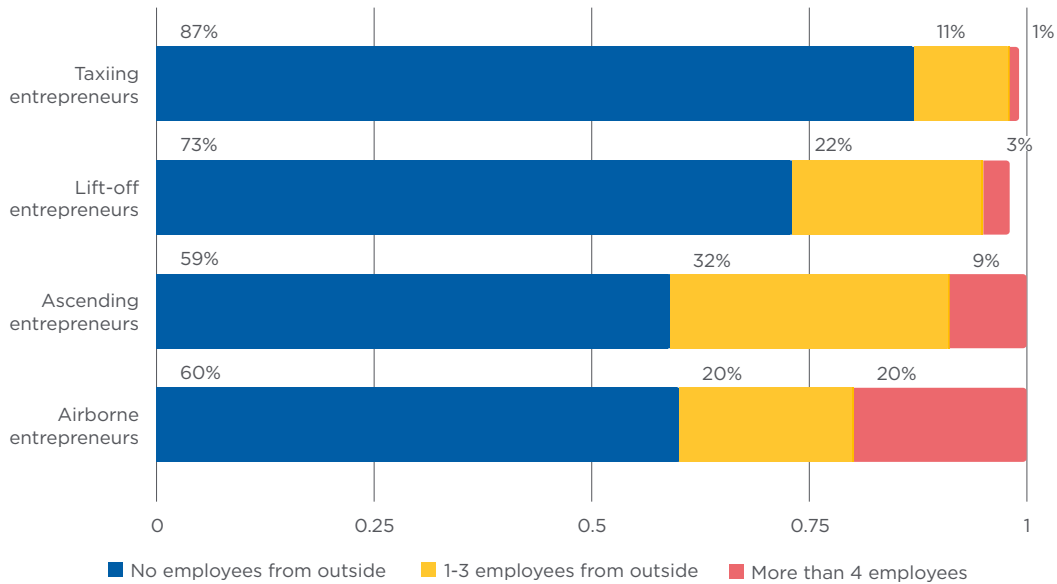




**4. Most enterprises across all four categories operate as solopreneur-run enterprises or with labor drawn from the family**

In the four categories, a bulk of the entrepreneurs rely on only family labor running the enterprise. However, this reliance seems to decrease as the enterprise jumps up the income ladder (Figure 7). Among airborne entrepreneurs, 2 in 5 entrepreneurs hire at least 1 or more employees from outside the family fold.

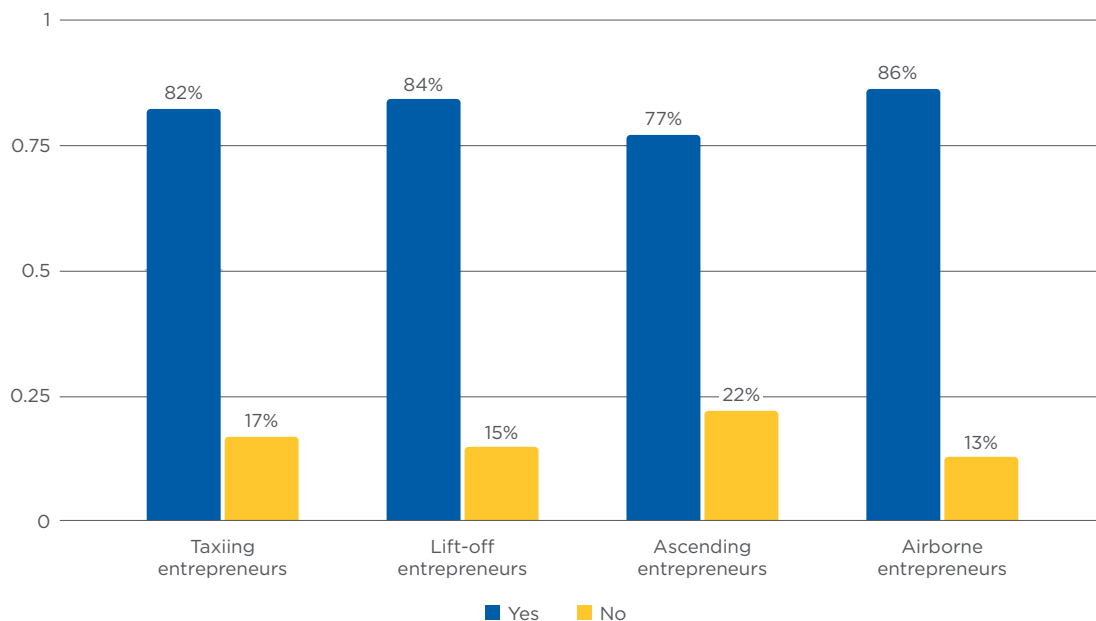
**Figure 7:** Number of Employees (Outside Family)



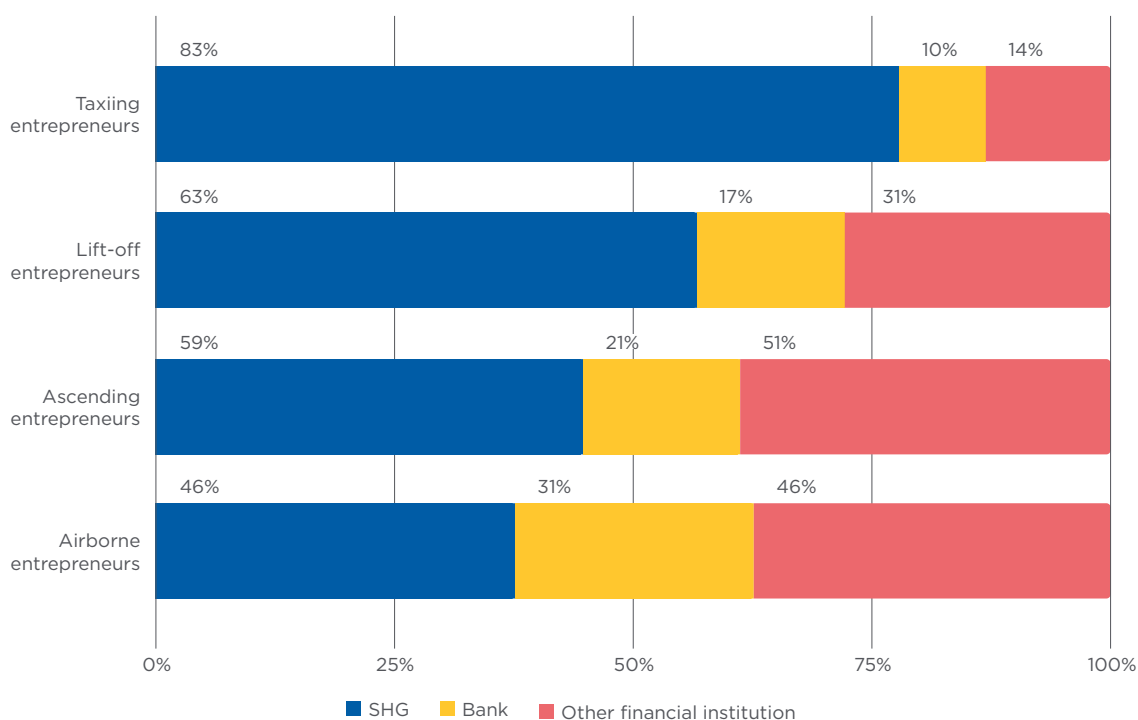
**5. Across all categories, most entrepreneurs have received a loan from a formal banking channel including from SHGs, banks, or other financial institutions**

Most entrepreneurs had sought and received formal loans through various channels in all categories. However, the use of SHG loans reduces as the income groups progress (Figure 8). While 83% of the taxiing entrepreneurs have received SHG loans, among the airborne entrepreneurs, this value falls to less than half, and the likelihood of receiving loans from banks and other microfinance institutions more than triples (Figure 9).

**Figure 8:** Formal Loan Uptake



**Figure 9:** Source of Loan

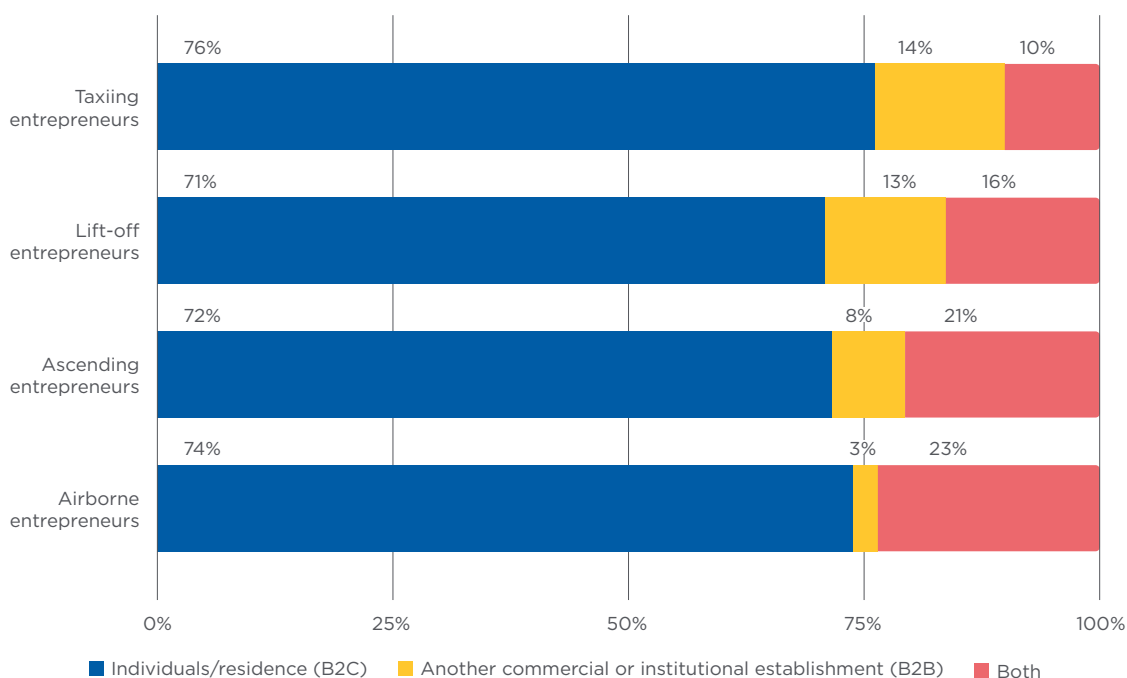


Findings from the key informant interviews with entrepreneurs also indicate the use of SHG loans for buying equipment such as flour-milling machines, sewing machines, etc, or for purchasing raw materials. While the ticket size varies according to enterprise scale, the source for this capital largely remains SHG-linked loans. In some cases, personal savings or income from agricultural practices is also used to finance initial investments in the enterprise. The assets were reported to be purchased by the entrepreneurs in most cases.

**6. More than 70% of the entrepreneurs across all four categories sell directly to end customers**

Direct selling to customers emerged as the most common model of sales among all the four categories. We observe an increase in the share of entrepreneurs choosing to undertake both B2B and B2C sales as the income bracket improves (Figure 10). The share of B2B-only entrepreneurs curiously has an inverse relation with the income bracket.

**Figure 10:** Transaction Type



## e-Readiness

The e-FMS pilot relies on smartphone availability and usage by women entrepreneurs associated with NRETP. Therefore, in order to gauge pilot readiness, the baseline survey examined smartphone availability, popular usage, and uptake of digital payments. Alongside this, it also assesses the current record-keeping practices across the 3 districts.

### 1. More than 60% of the entrepreneurs, across all categories, have access to smartphones

Across categories, more than half the entrepreneurs have access to smartphones (Figure 11). The percentage of entrepreneurs having primary ownership of the phone is lower, with more than 50% of the respondents sharing the smartphone with other family members. The timeshare for mobile phone usage also expands along the income lines, with 50% of the airborne entrepreneurs able to spend more than 4 hours on the phone daily (Figure 12).

Figure 11: Access to Smartphone (Sole or Shared Ownership)

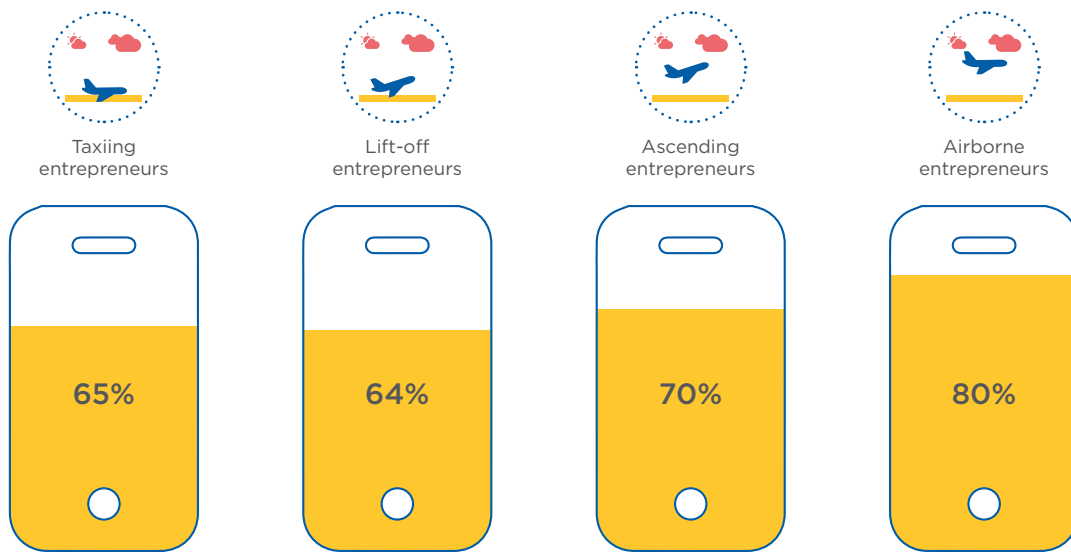
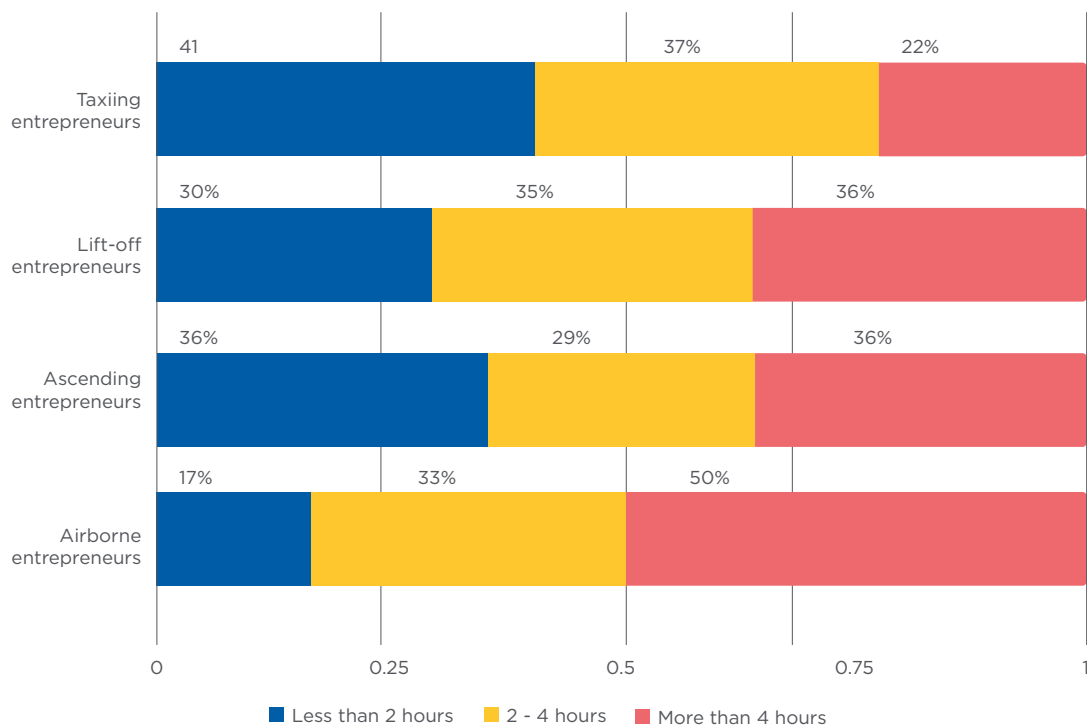


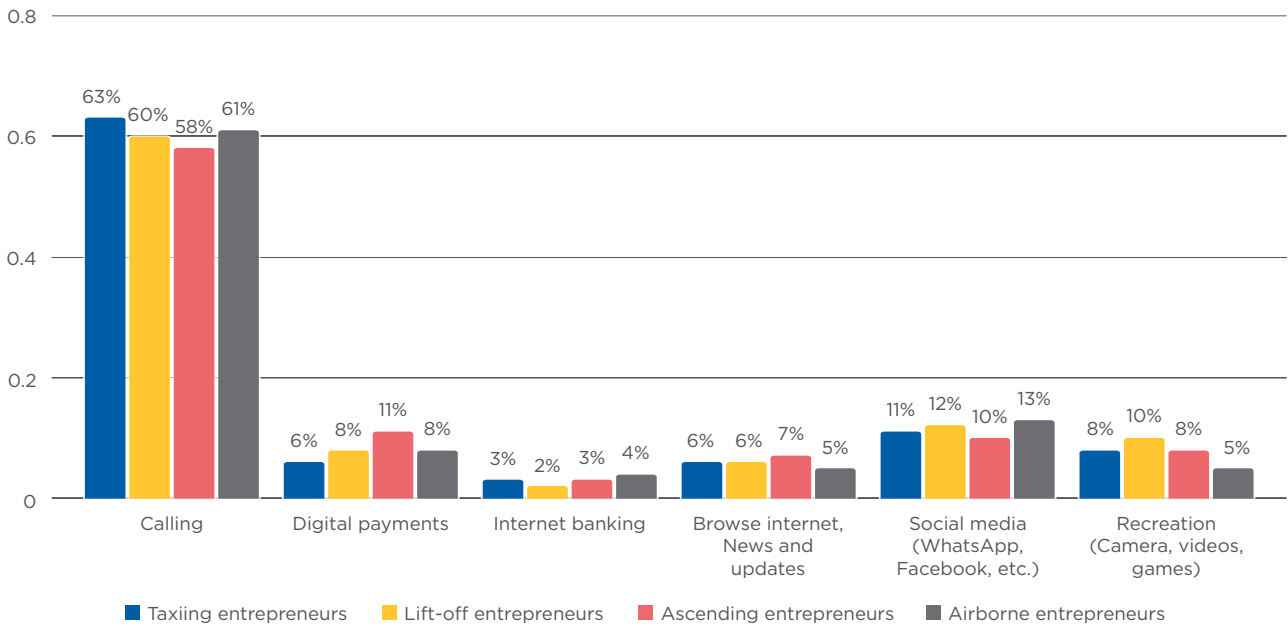
Figure 12: Access to Smartphone (Sole or Shared Ownership)



**2. The most common use of the phone was reported to be for calling, followed by the use of social media such as WhatsApp, Facebook, etc.**

Entrepreneurs use the phone for traditional reasons such as connecting with family, friends, customers, and suppliers across all categories (Figure 13). Use of social media such as WhatsApp, Facebook, etc ranks a distant second uniformly, with digital payments being the third choice of use.

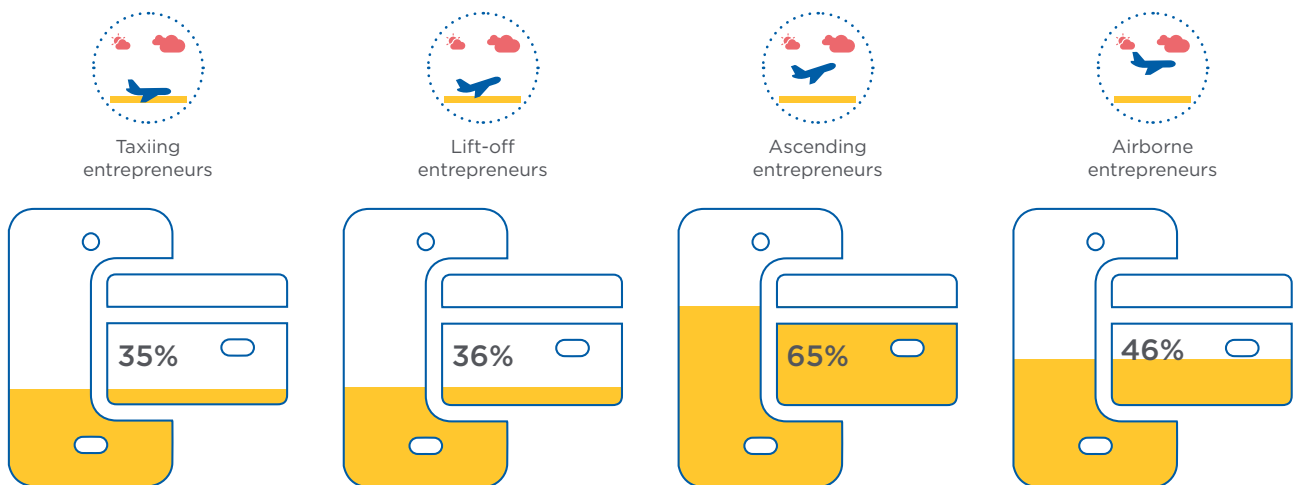
**Figure 13:** Phone Usage



**3. While digital payments rank low in the overall preferred usage, there’s a gradual increase in uptake as income increases**

More than 50% of the entrepreneurs earning more than INR 25,000 use digital payments for most transactions (Figure 14). At least half the entrepreneurs use digital payments without support from others; this share increases as income blooms. 85% of the airborne entrepreneurs who use digital payments, use it daily. Entrepreneurs with separate bank accounts for business transactions are more likely to use digital payments occasionally (Table 5).

**Figure 14:** Digital Payment Usage



**Table 5:** Digital Payment Use Frequency Among Entrepreneurs With Distinct Business Bank Account

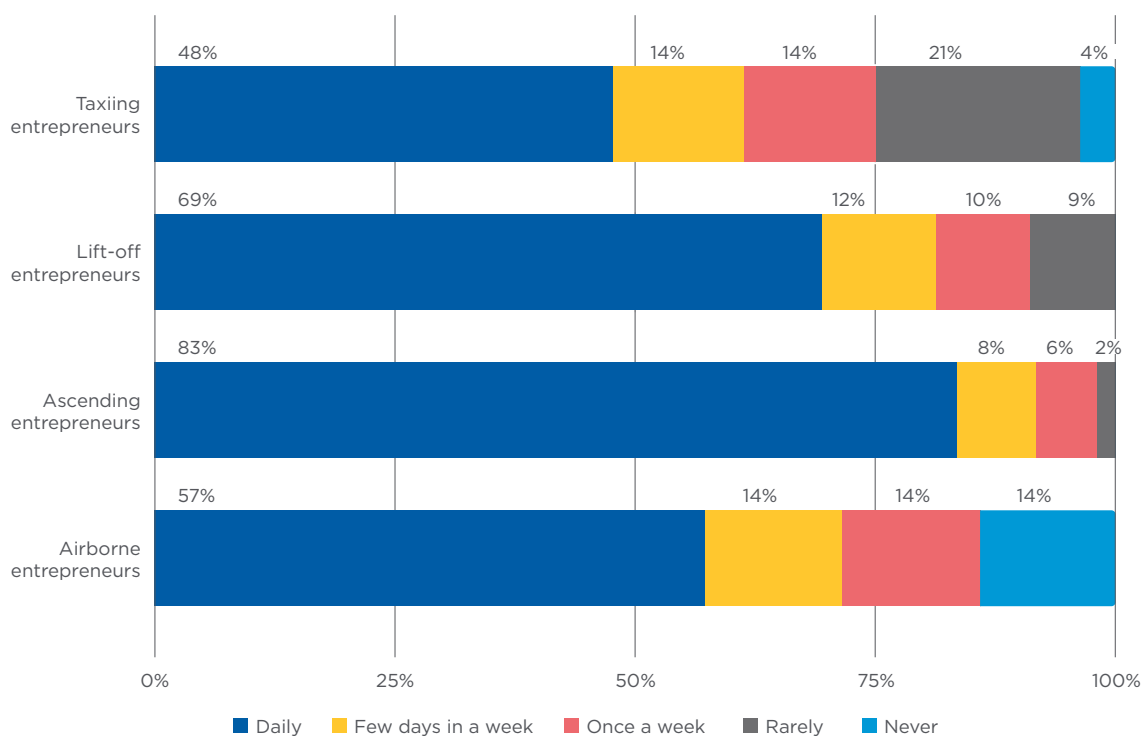
Whether entrepreneurs have a separate bank account for business	Often	Sometimes	Never
	<b>Frequency of digital payment to suppliers</b>		
No	33%	33%	33%
Yes	39%	54%	7%
<b>Frequency of digital payment from customers</b>			
No	33%	67%	0
Yes	47%	50%	3%

**4. While more than half the entrepreneurs profess to maintain transaction records, ascending entrepreneurs are most likely to be maintaining daily records. Qualitative insights indicate a guarded approach to transparent record-keeping owing to taxation worries**

14% of the top income category stated that they do not maintain any records of their enterprise’s transactions (Figure 15). Daybook was reported to be the most common type of record maintained across all income groups. The entrepreneurs in the higher income group are more likely to maintain their business records themselves, without any additional help.

The key informant interviews show that most entrepreneurs do not maintain records for sales, purchases, and expenditures on a daily basis despite having opined that doing so is important in order to determine their profits. One of the reasons identified for not writing anything down is the fear of being included under the GST bracket.

**Figure 15:** Record-keeping Frequency



In the words of a female entrepreneur **“Only my son maintains records in the diary book and you know my son gets scared that by recording everything in mobile, income tax people might ask how much tax amount and all.”**

Some entrepreneurs also mentioned that they make note of things mentally and do not feel the need to write it down anywhere at all. Those who do maintain records, note down transactions pertaining to the purchase and sale of raw materials, and expenses incurred to make a note of profit estimation. A few business owners, especially those who ran group enterprises, reported the

need for record-keeping as a means to achieve transparency among the owners of the business. A few entrepreneurs also mentioned that they write down any credit amount that is due to them in a notebook.

***“The purchase and sales records should be separate and when we purchase goods in wholesale that record should be separate, so we can check all the details and it will be easy for us to keep a record. The goods which are sold on credit, those details we can keep separately so that we can get money back in time by checking the record.”***

Most women reported recording basic accounts payable and accounts receivable information either daily or weekly, but none of them reported having differentiated registers such as cash book, stock register, cheques issued register, inventory, etc. The common practice for most small businesses is reported as being limited to keeping handwritten ledgers in a more informal manner, often in formats that suit the individual entrepreneur the most.

Even for entrepreneurs with slightly larger businesses who do record their transactions, certain expenditures such as petty expenses often are not recorded. Other expenses that are more complex to record also end up being unreported transactions: for example, enterprises that run from the entrepreneurs’ residential premises often do not keep records of electricity or water charges incurred by the enterprise since these are often subsumed in their household expenses. Several enterprises also reported not maintaining a separate cash box, which leads to the usage of money received by the enterprise (turnover or profits) being used by the entrepreneur for their household expenses.

Since most transactions are not tracked, these entrepreneurs reported applying heuristics they had come up with over time to determine if the enterprise was incurring profits or losses. For example, in the opinion of a female entrepreneur ***“We have to pay INR 120 for 1 kg sticks so we sell incense sticks for around INR 150 to 170 per KG so our profit per kg would be around INR 40 to 50. So how many kgs we sell in a day and what is our daily profit, we calculate like this.”***

Some entrepreneurs are of the opinion that their profits vary as per the season while others simply believe that deducting costs and expenses from revenue generated will help them estimate profits or ‘the balance they are left with at the end of the day after all expenses’ is their profit and thus a sign of their business doing well.

### **5. Only 2 out of the 294 entrepreneurs who maintain written records mentioned using a digital book-keeping solution**

The 2 entrepreneurs mentioned using Khatabook after viewing media advertisements. Most BDSPs were also unaware of digital bookkeeping solutions.

Largely, entrepreneurs in the qualitative sample did not identify the need for a digital e-FMS tool since most reported comfort with an analog record-keeping practice. However, a handful of entrepreneurs mentioned they would like to switch to digital means of bookkeeping since they believe it will be easier to access them.

In the words of a female entrepreneur- ***“I would prefer the computer to mobile phones since phones may have network issues in their locality whereas computers are able to store data for a longer time period. On a potential app, I would like to see bank loan info, daily transactions, daily/monthly/yearly income, the credited amount in the bank, etc.”***

Several entrepreneurs reported that they would like to try such an app provided they are given relevant training. Some respondents also mentioned in-app bank linkages would be a helpful feature albeit a significant chunk of entrepreneurs reiterated the belief that maintaining records on a digital platform may force them to file GST returns and hence perceive it to be undesirable.

### **6. Most entrepreneurs face a dichotomy of household chores and business requirements, that leads them to de-prioritize timely and exhaustive record-keeping**

Across all the three states, most entrepreneurs require training and support for optimal management of business finances. Some outlier respondents mentioned being trained in record-keeping by civil

society partners; there still remains a need for customised training, as per business type. Women entrepreneurs from multi-generation businesses have received on-the-job training, through informal apprenticeships. When asked about the desired areas of support, most entrepreneurs listed marketing, branding, packaging, sales lead generation as other areas for training, apart from financial management.

BDSPs also shared that a cycle of refresher training sessions would be useful for them as facilitators. According to them, entrepreneurs face challenges in optimal record keeping due to varying literacy and numeracy levels, and a constant juggling between household chores and business. The latter point is corroborated by point 3 of this analysis report, where we see that in the largest group, i.e, the taxiing entrepreneurs, 70% of the enterprises are located within the household premises, which are likely located in a small village lane/ village road.

Therefore, there is an appetite for flexible training that is imparted simply by well-trained facilitators, based on the entrepreneur's own pace and requirements.

***“Training should not be long and boring. It should also be imparted in local languages to actually help entrepreneurs understand the motive of these training sessions.”***



# 5 Conclusion



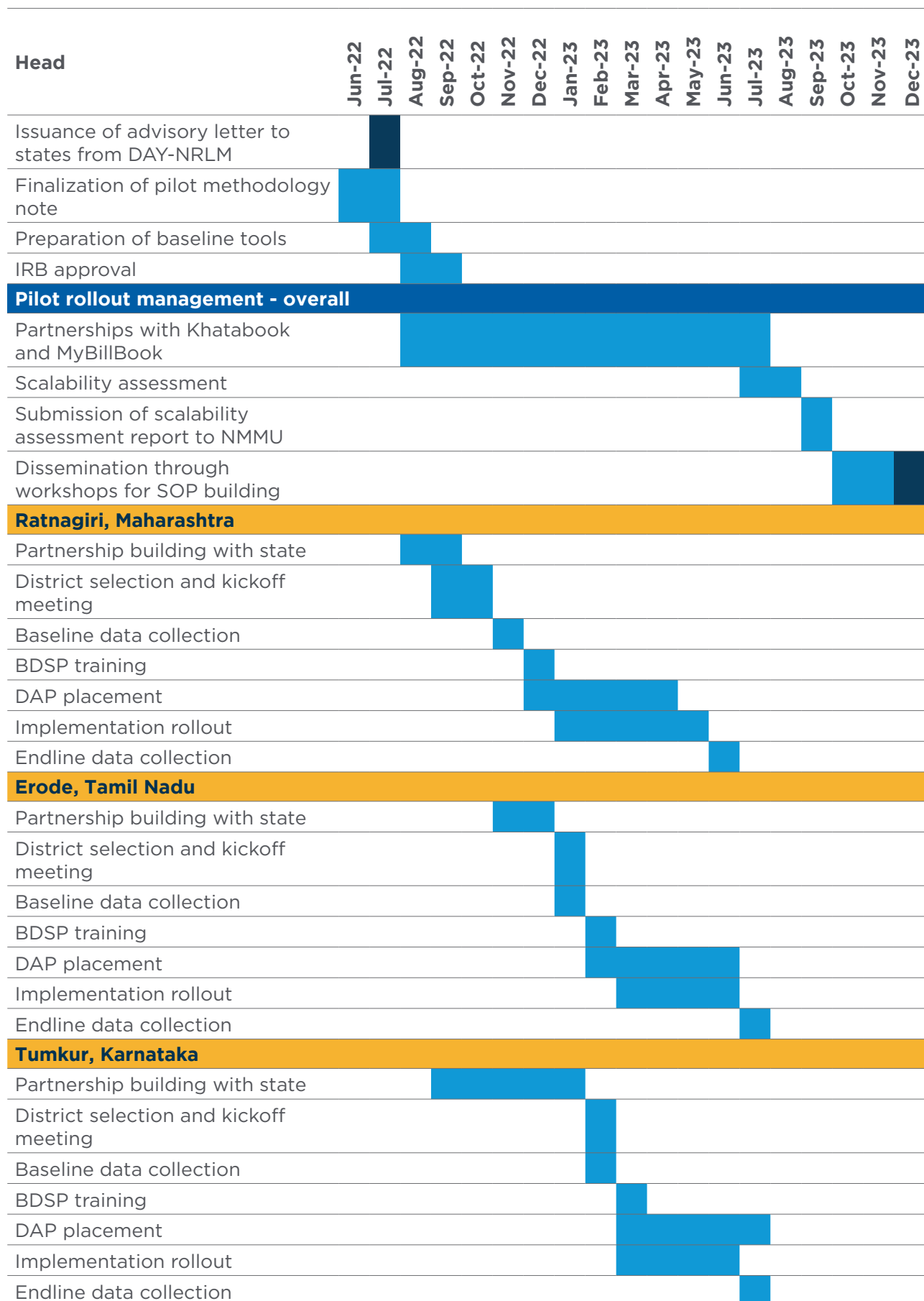
*Photo credit: Paula Bronstein/Getty Images/Maple Leaf Empowerment*



The intervention is currently underway, with the endline scheduled in July 2023. Trained BDSPs across the three pilot geographies have mobilized user cohorts. The cohort sizes in Ratnagiri, Erode and Tumkur are 114, 132 and 83 respectively. Our insights from monitoring visits informs us that entrepreneurs receiving support under DAY-NRLM are a niche group and spread widely across the blocks. This will influence the BDSP's ability to balance the weekly visit plan that the intervention proposes with their regular activities such as business plan preparation and recovery of loans for the nodal Cluster Level Federation (CLF). The pilot will follow an iterative approach to implementation, and may use dedicated resources for mobilization with a smaller cohort of dedicated users to control for BDSP unavailability.

Through this pilot, we will have firmer answers on what drives the decisions to maintain records, whether technology is accessible enough for women-run enterprises and whether single-entry based digital bookkeeping offers a simplified solution to foster their digital transformation.

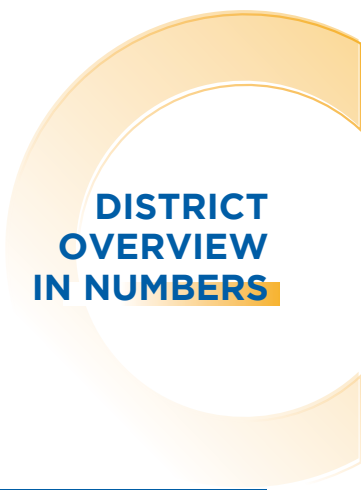
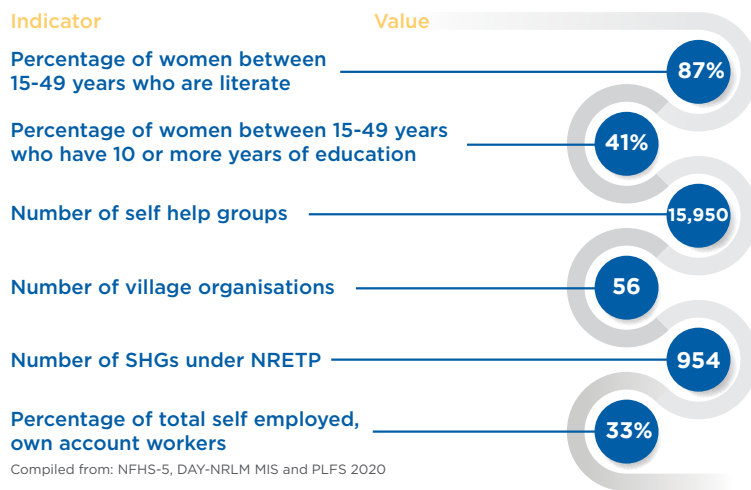
# Annexure 1: State-wise Implementation Timeline



# Annexure 2: Baseline Factsheet - Ratnagiri

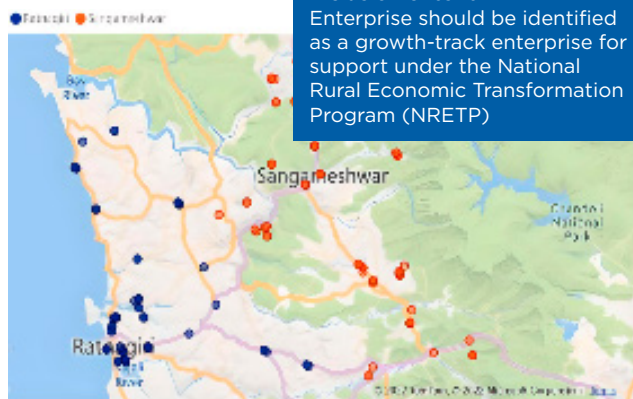
District: Ratnagiri  
Maharashtra, India  
**BASELINE FACTSHEET**

## e-Financial Management Solutions for Women-led Enterprises

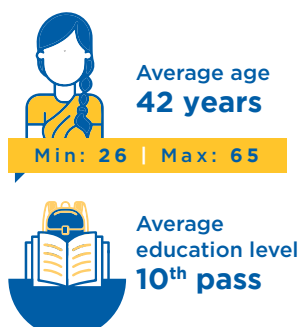


### BASELINE DESCRIPTION

SAMPLE SIZE	
Overall	154
Ratnagiri block (T)	80
Sangameshwar block (C)	74



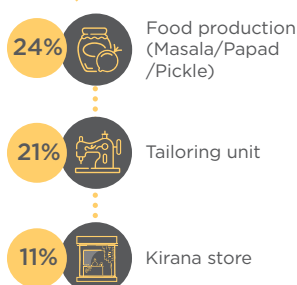
### ENTREPRENEUR PROFILE



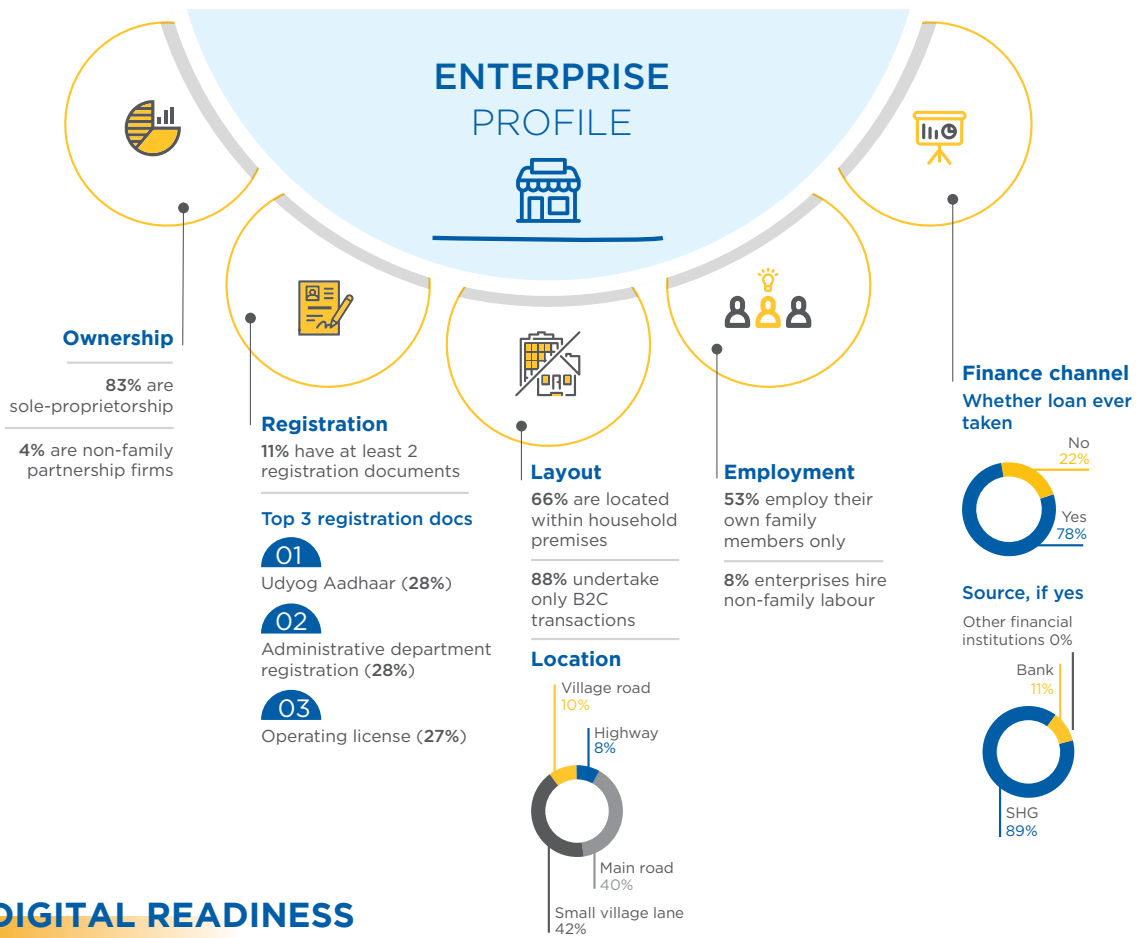
“ 2 in 3 women entrepreneurs belong to families with two earning members ”

Likely to be running a production enterprise

#### TOP BUSINESSES

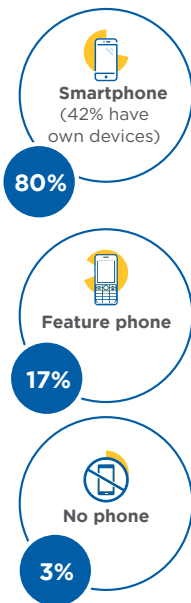


“ The primary enterprise is the only personal source of income for 61% of the women entrepreneurs ”

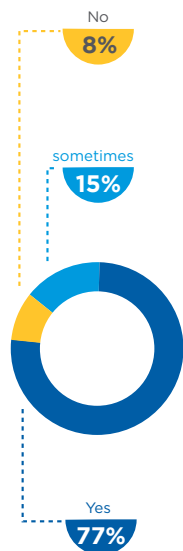


## DIGITAL READINESS

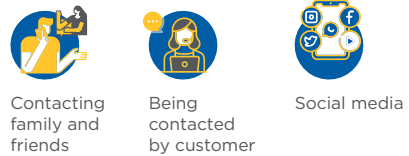
### Access to phone



### Access to internet



### Top 3 uses of phone



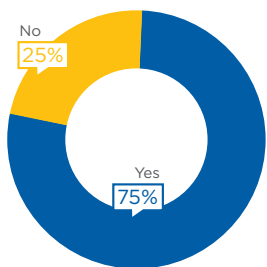
### Most used app



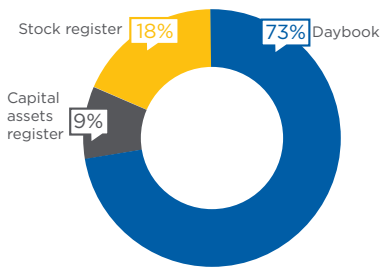
### Digital payments

- 57% have paid using digital means (common user age group: 50-59 years)
- Google pay emerged as a preferred app
- Top three uses for mobile recharge, paying utility bills and receiving money from customers
- Sector-wise, 75% trading units, 62% service units and 51% production units use digital payments

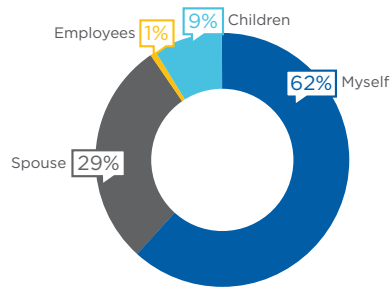
## RECORD-KEEPING PRACTICES



Maintaining separate register for book-keeping



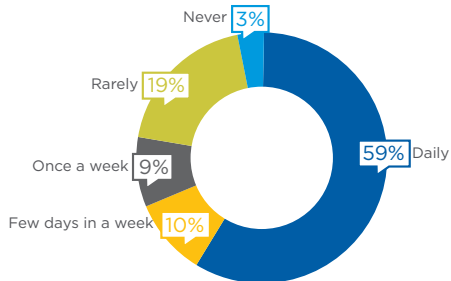
Records maintained



Self-sufficiency in record-keeping



Frequency of record-keeping



Motivation to use digital ledger

83% were willing to use digital ledgers, if provided training to do so

## CURRENT PRACTICES



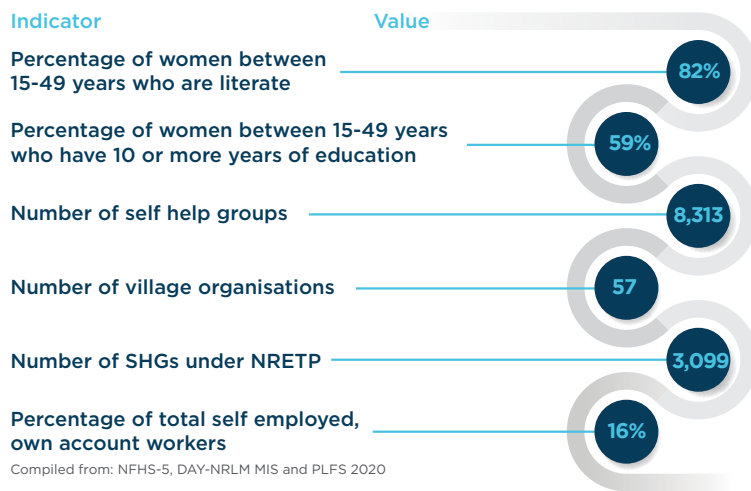
This study is being undertaken by LEAD at Krea University as part of its STREE initiative.

STREE is supported by the Bill & Melinda Gates Foundation.

# Annexure 3: Baseline Factsheet - Erode

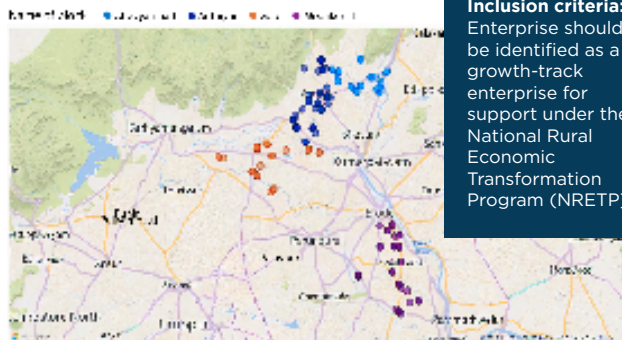
District: Erode  
Tamilnadu, India  
**BASELINE FACTSHEET**

## e-Financial Management Solutions for Women-led Enterprises



### BASELINE DESCRIPTION

SAMPLE SIZE	
Overall	178
Gobi block (T)	44
Modakurichi block (T)	48
Anthiyur block (C)	40
Ammapetai block (C)	46



**Inclusion criteria:**  
Enterprise should be identified as a growth-track enterprise for support under the National Rural Economic Transformation Program (NRETP)

### ENTREPRENEUR PROFILE

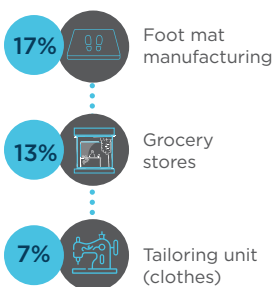
**Average age 43 years**  
Min: 25 | Max: 61

**Average education level 8<sup>th</sup> pass**

2 in 3 women entrepreneurs belong to families with two earning members

Likely to be running a production enterprise

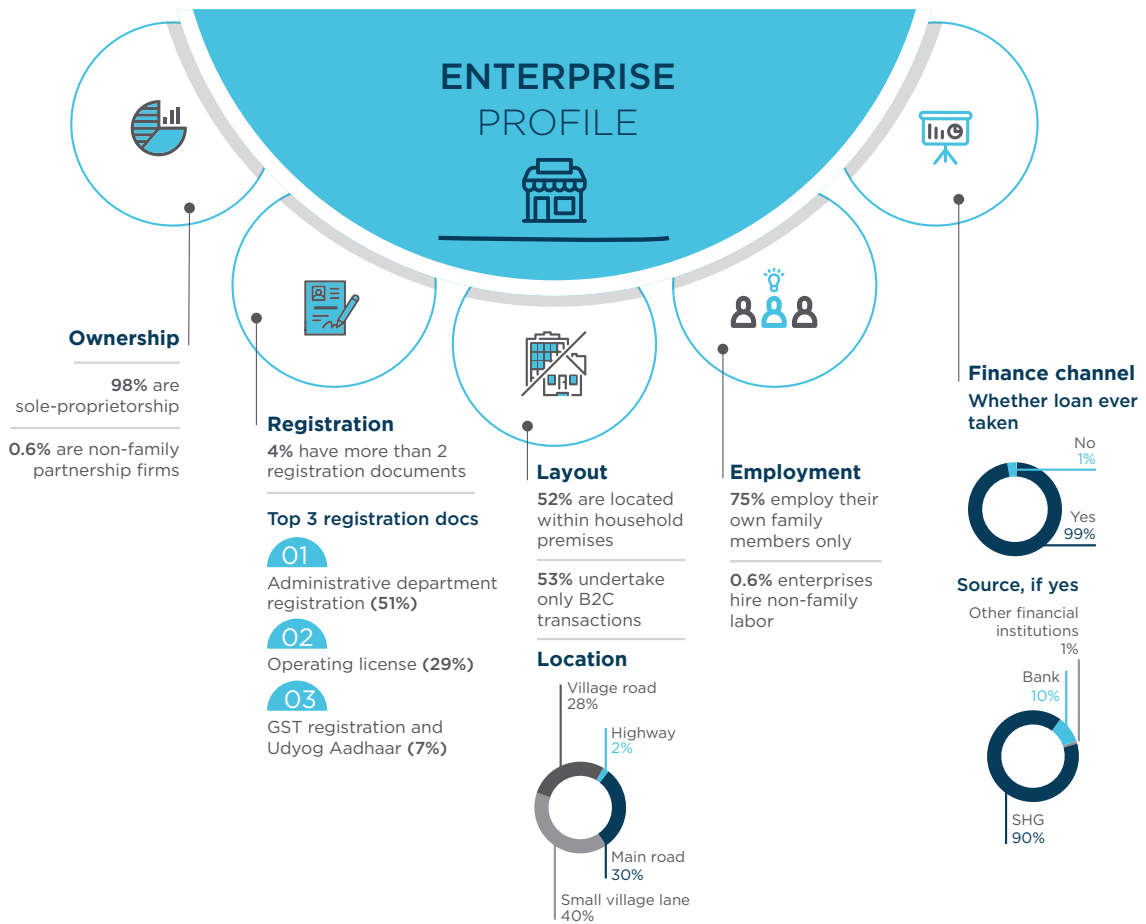
#### TOP BUSINESSES



Average household income  
**₹ INR 25,570**

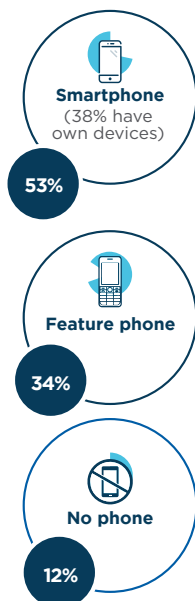
Average income from business last month  
**₹ INR 13,452**

The primary enterprise is the only personal source of income for **1% of the women entrepreneurs**

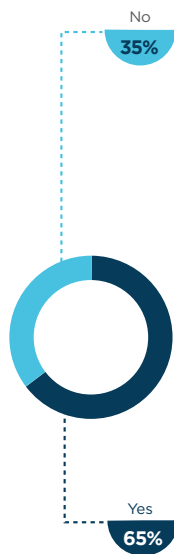


## DIGITAL READINESS

### Access to phone



### Access to internet



### Top 3 uses of phone



Contacting family and friends

Being contacted by customer

Social media

### Most used app

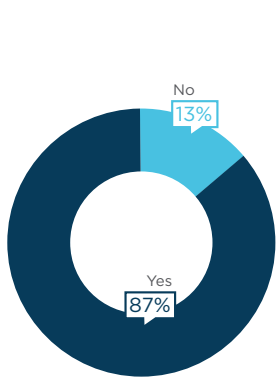


### Digital payments

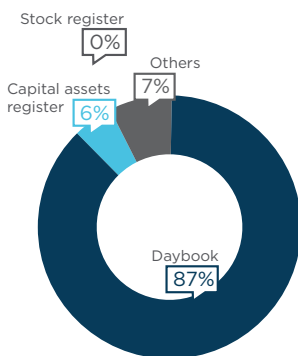
- 22% have paid using digital means (common user age group: 25-39 years)
- Google pay emerged as a preferred app
- Top three uses are money transfer to suppliers, receiving money from customers and mobile recharges.
- Sector-wise, 28% trading units, 27% service units and 18% production units use digital payments



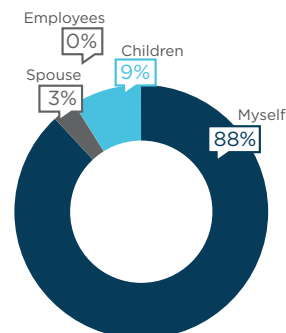
## RECORD-KEEPING PRACTICES



Maintaining separate register for book-keeping



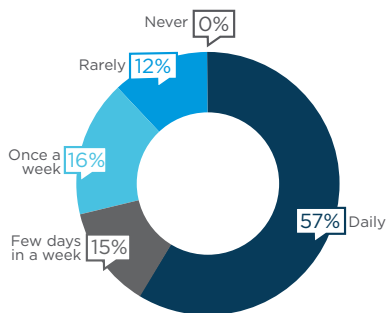
Records maintained



Self-sufficiency in record-keeping



Frequency of record-keeping



Motivation to use digital ledger

59% were willing to use digital ledgers, if provided training to do so

## CURRENT PRACTICES



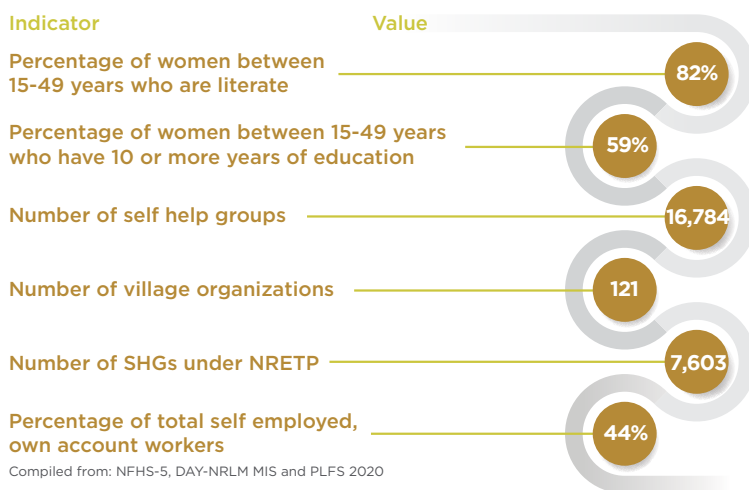
This study is being undertaken by LEAD at Krea University as part of its STREE initiative.

STREE is supported by the Bill & Melinda Gates Foundation.

# Annexure 4: Baseline Factsheet - Tumkur

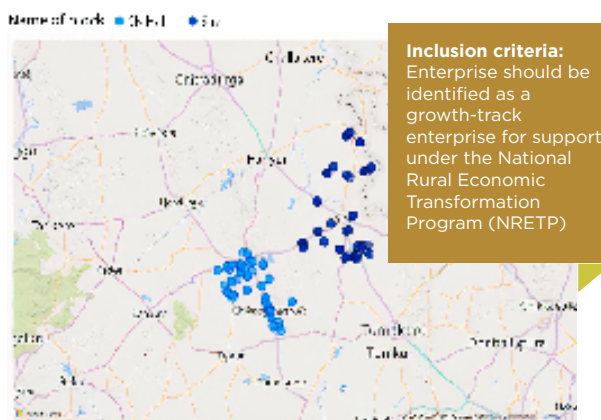
District: Tumkur  
Karnataka, India  
**BASELINE FACTSHEET**

## e-Financial Management Solutions for Women-led Enterprises

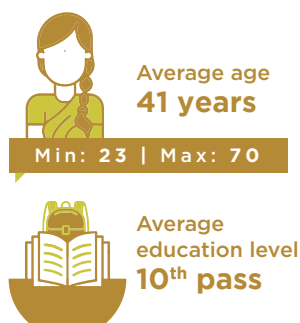


### BASELINE DESCRIPTION

SAMPLE SIZE	
Overall	171
Chikkanayakanahalli block (T)	87
Sira block (C)	84



### ENTREPRENEUR PROFILE



1 in 2 women entrepreneurs belong to families with two earning members

Likely to be running a production enterprise

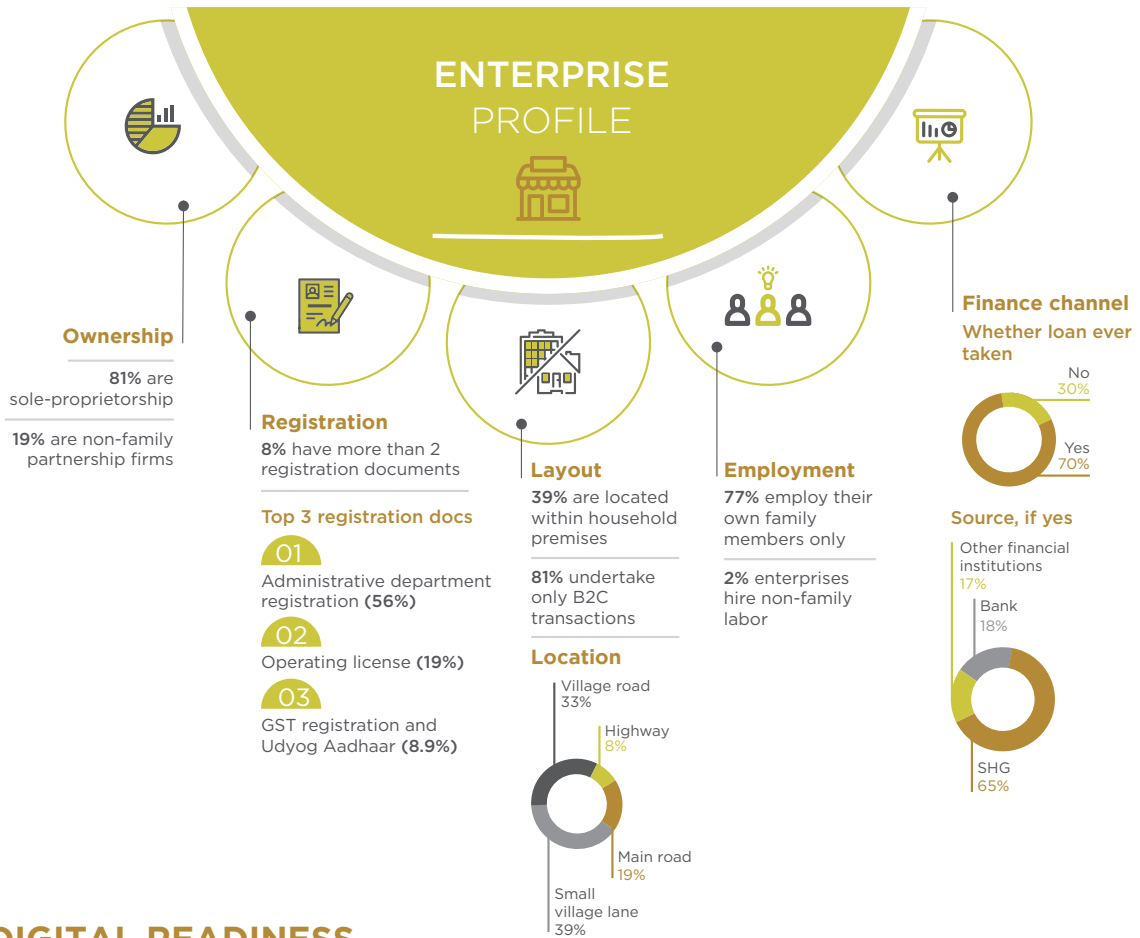
#### TOP BUSINESSES



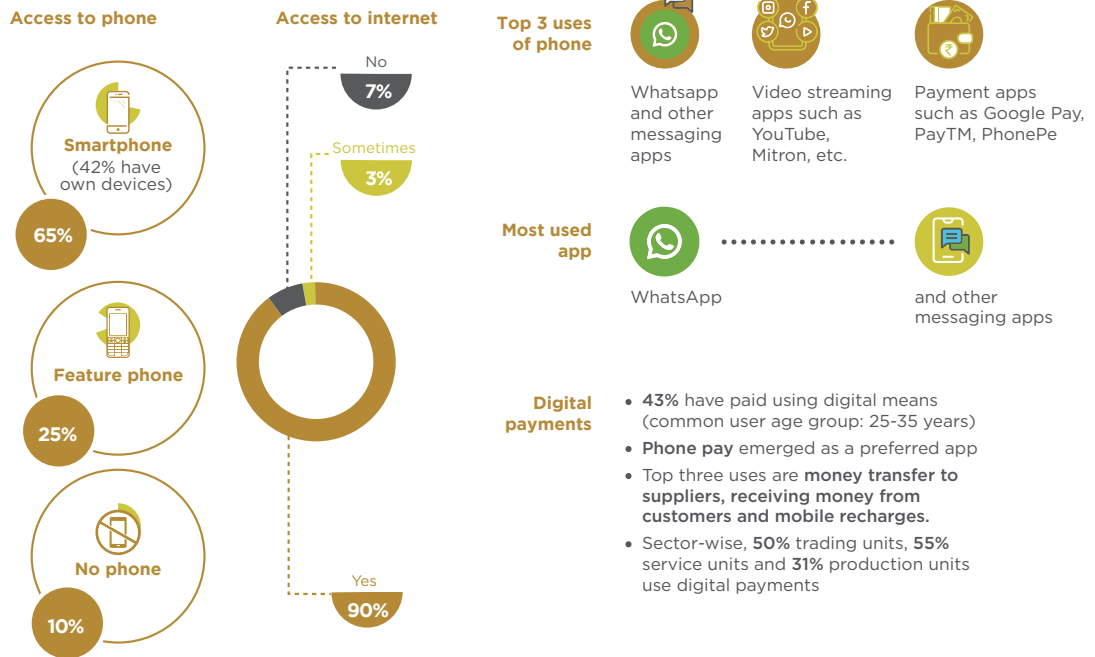
Average household income  
**₹ INR 43,480**

Average income from business last month  
**₹ INR 20,184**

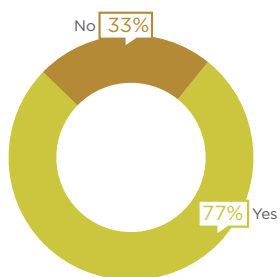
The primary enterprise is the only personal source of income for 4% of the women entrepreneurs



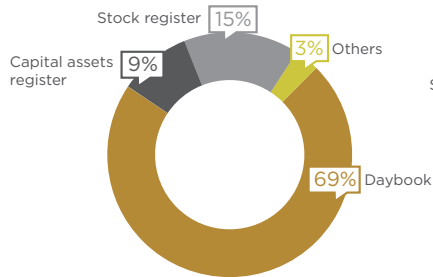
## DIGITAL READINESS



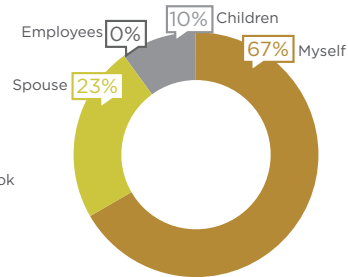
## RECORD-KEEPING PRACTICES



Maintaining separate register for book-keeping



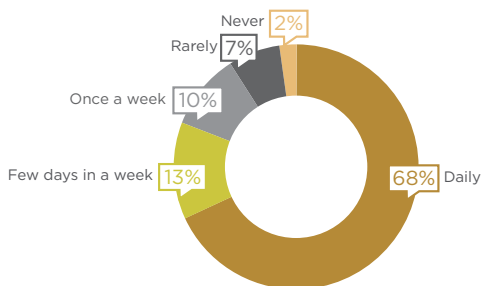
Records maintained



Self-sufficiency in record-keeping



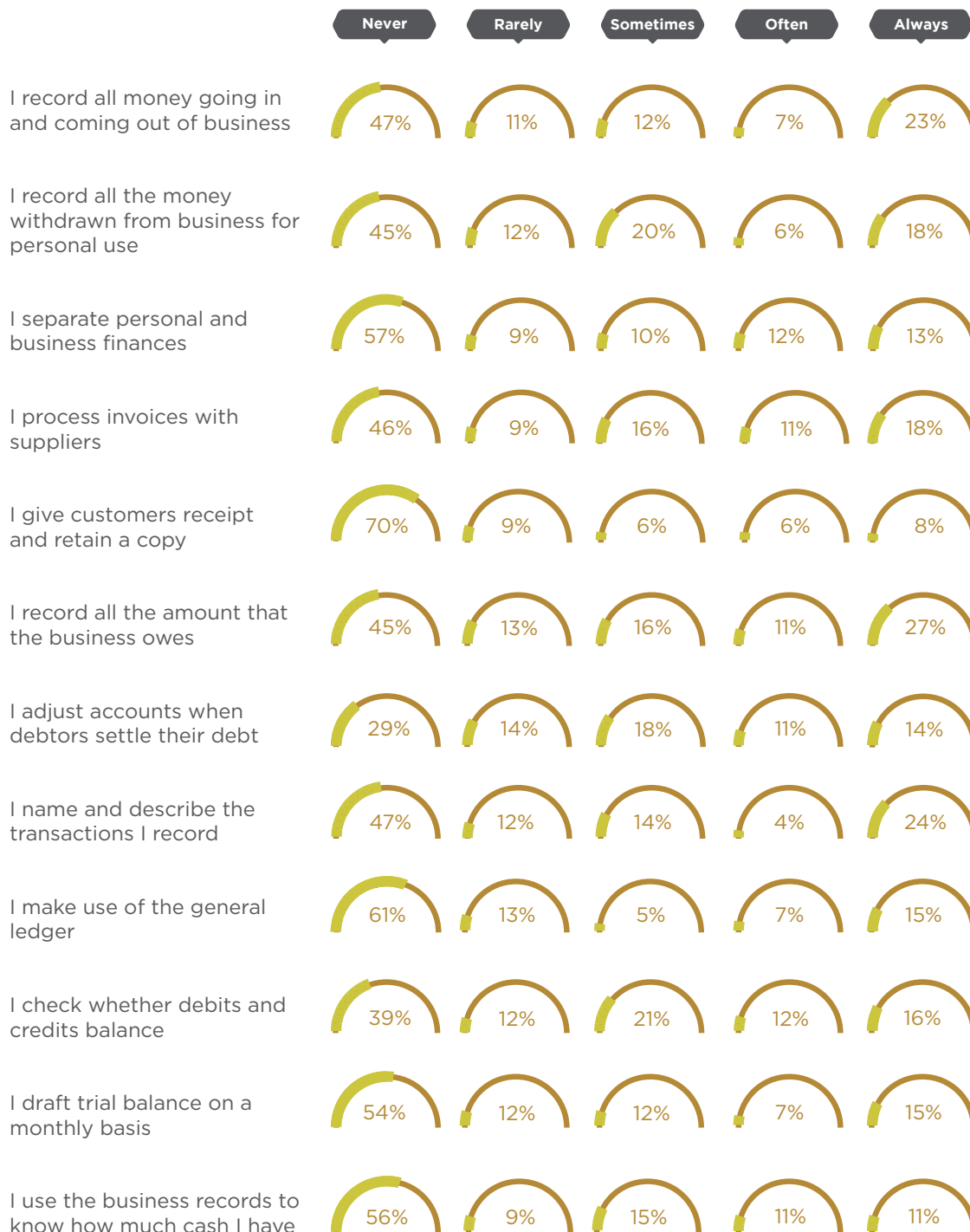
Frequency of record-keeping



Motivation to use digital ledger

85% were willing to use digital ledgers, if provided training to do so

## CURRENT PRACTICES



This study is being undertaken by LEAD at Krea University as part of its STREE initiative.

STREE is supported by the Bill & Melinda Gates Foundation.



## Endnotes

1. <https://www.publichealth.columbia.edu/research/population-health-methods/difference-difference-estimation>
2. Refers to family members of SHG members, as the NRETP guidelines allow for family member-run business to qualify for support.
3. Loan taken from multiple sources; therefore the percentage exceeds 100.



LEAD is an action-oriented research centre of IFMR Society that leverages the power of research, innovation and co-creation to solve complex and pressing challenges in development. LEAD has strategic oversight and brand support from Krea University (sponsored by IFMR Society) to enable synergies between academia and the research centre.

[www.ifmrlead.org](http://www.ifmrlead.org)

---

 LEAD at Krea University

 LEADatKrea

 LEAD at Krea University