

Enabling Adoption of Digital Financial Services by Underserved Micro, Small, and Medium Enterprises in India



April 12, 2022

Prepared by:

Nirali Desai

Master in Public Policy Candidate,
Harvard Kennedy School

Prepared for:

Client: Accion

Harvard Faculty Advisor: Professor Asim Khwaja

PAC Seminar Leader: Professor Janina Matuzeski

This PAE reflects the views of the author(s) and should not be viewed as representing the view of the PAE's external client(s), nor those of Harvard University or any of its faculty.

Acknowledgements

I would like to express my gratitude to my Faculty Advisor, Professor Asim Khwaja, for his encouragement and feedback throughout the project. I am also thankful to Professor Janina Matuszeski, my Policy Area of Concentration Seminar Leader, for her support and generosity. I am grateful to Accion for giving me the opportunity to work on this project and contribute in a small way towards building the digital financial capacity of MSMEs in India. I am particularly thankful of Emma Morse for helping me narrow down the idea and making sure the research gets used in practice. I would also like to acknowledge Accion's India partners who spent hours giving me insights from the field.

Lastly, I would also like to thank Ashutosh Bhuradia, Tushar Vohra, and Harman Bhullar for acting as my sounding board and always being available to discuss ways to bring financial inclusion to the undeserved populations, especially women.

Table of Contents

Acknowledgements	1
Table of Contents	2
Executive Summary	4
Introduction	8
Landscape Analysis and Literature Review	11
The Micro, Small, and Medium Enterprises (MSME) Sector in India	11
Challenges faced by MSMEs	11
Macro-ecosystem in which MSMEs operate in India	13
Role of financial inclusion for MSMEs growth	14
Government and regulatory policy enablers of digitization and financial inclusion in India	14
Impact of Digital Financial Services	17
Scope of the Study	19
Financial Service Providers and their Product Offerings	19
Problem Statement	19
Methodology	20
Findings	24
General characteristics of my sample	24
Low utilisation of current digital financial products	26
Distrust of technology among nascent MSME customers	33
Lack of enabling ecosystem	35
Supply-side barriers	37
Perceived benefits of digital financial products	38

Recommendations	41
Criteria	41
Policy Solutions	41
Final Recommendation	48
Appendix	49
Appendix A: Interview Questions Guide for MSMEs	49
Appendix B: Interview Questions Guide for Financial Service Providers	50
Appendix C Detailed Digital Segmentation	50
Appendix D: Ethics and Transparency Statement	53
Bibliography	54

Executive Summary

Financial inclusion refers to the ability of individuals and businesses to access and use financial products to meet their daily needs. These financial products include payments, savings, credit, insurance, and securities. Micro, small, medium enterprises (MSMEs) across developing economics **face many challenges to grow and scale, with access to finance to meet their business needs being the top one. Around 90% of MSMEs in developing economies that are underserved are owned by women and rural populations**, which are segments that are not financially included because of many barriers they face. As access to digital products across the world has increased, **digital financial inclusion has been identified as an important tool to bridge the gap in financial inclusion** by making use of cost-effective technologies and affordable solutions through mobile phones to reach previously excluded beneficiaries. However, **financial literacy among underserved MSMEs is low** because of many reasons, including exclusion from formal financial markets at household and business levels. **Increased financial literacy and the ability to establish creditworthiness** could transform the sector by making affordable finance available for their business needs.

I work with Accion's financial service provider (FSP) partners to answer the following research question.

What are the barriers and enablers for MSMEs in the adoption of these digital financial products and how can we better serve their needs?

The PAE focuses on addressing this problem and identifies avenues to improving access **using three approaches for increasing the reach of digital financial services:**

1. Increasing digital financial product usage of current customers.

This approach looks at making the current digital financial product offerings of the financial service providers work better for the customers through altering these offerings

based on feedback and literature, and creating sustainable feedback loops

2. Increasing customers through better utilization of current products.

This approach attempts to expand access to current digital financial products to more MSME customers by targeting MSMEs who “look” like the biggest user segments of the current offers in neighboring communities

3. Expanding customer base by developing new better-catered products and partnerships.

This approach suggests ways to expand digital financial services by creating an enabling ecosystem and lasting partnerships that will create long-term pathways to digital financial inclusion of all MSMEs

The analysis also divides customers into the following **4 stages of digital maturity** based on the segmentation developed by Accion called ‘Digital Maturity Score’.

1. **Nascent** – the stage comprises of customers who have low comfort with digital technologies, do not have full access to mobile phones, and do not have a strong understanding of the linkage of digital financial services to business growth.
2. **Experimenting** – the stage comprises of customers who have moderate levels of technology usage, mostly for social media and communication, do show some willingness to try digital financial services, and face moderate barriers to accessing technology.
3. **Emerging** – the stage comprises of customers who have high levels of technology use for multiple purposes, feel confident in using simple digital financial services for business, and only sometimes face barriers to accessing technology
4. **Enabled** – the stage comprises of customers who have strong confidence across both financial and non-financial use of digital technology.

Key Insights drawn from the study.

1. **The majority of MSME customers share a mobile phone with their families.** Women have the lowest smartphone ownership and use help from other family members to

make digital transactions.

2. **There still exists large distrust of technology and digital transactions** among the MSME customers.
3. Although the majority of the MSME customers are rural women who are in the nascent stage of digital maturity, they make up the lowest number of transactions, showing us **that a large number of customers remain untapped.**
4. There is a **lack of an ecosystem to support the transition** of MSMEs as digital financial users.
5. While most of the digital financial inclusion effort is through a supply-side push from the government and fintech providers, there exist **many constraints in the ecosystem including resistance from field staff agent networks** to train, retrain, and handhold the MSMEs to support their transition into the digital world.
6. The top-down push from the financial service providers and the government to expand digital financial **inclusion yields medium- to long-term results.**
7. **Digital financial tools have helped MSMEs plan their finances better and grow their business.**
8. **Positive spillovers are observed, including increased familiarity with other digital products like GooglePay and Paytm.**

The study offers recommendations for Accion to implement through its digital financial service providers upon assessing each approach using the insights outlined above, digital maturity and product impact survey data of MSMEs, and interviews with MSMEs and other key stakeholders in the financial services ecosystem like the leadership of financial service providers and field agents. The recommendation is also evaluated against operational feasibility, financial feasibility, and financial inclusion criteria.

My final recommendation

The overarching recommendation is that the **financial service providers should continue to collect the data about digital segmentation, (from lowest digital maturity to highest) nascent,**

experimenting, emerging, and enabled stages, and design and implement tailored solutions based on the needs of each stage. Additionally, in the short term, I recommend increasing the adoption and usage of digital financial services by underserved MSMEs by modifying current product offerings and training sessions. I propose:

1. big and small changes in the current product offerings to cater to underserved MSMEs like **availability of payment receipts, communication message to communicate all transaction failures, reduction in the size of the app, verification of phone numbers every few months**
2. focusing on transitioning nascent and experimenting (low levels of digital maturity) MSMEs to emerging and enabled stages (high levels of digital maturity) through **differentiated clustered training that involves stronger handholding and trust-building efforts.** Specifically, working closely with the MSMEs in their first three transactions, creating awareness about digital safety, smartphones should be incorporated in the training modules.

Building internal alignment to get the field agents on board with the vision of MSME digital transition is key to implementing this solution. **In the long-run, the focus should be on building enabling ecosystems by creation of lasting partnerships between governments, financial service providers, and mobile operators** to meaningfully include all MSMEs, especially women-owned and rural-based, in the digital financial inclusion.

Introduction

The role of financial inclusion in creating pathways for economic development and poverty reduction has been well identified in the literature. (International Trade Centre 2020) Financial inclusion refers to the ability of individuals and businesses to access and use financial products to meet their daily needs. These financial products include **payments, savings, credit, insurance, and securities**. (World Bank 2022) In India, more than 80% of the population has bank accounts but about 48% of bank accounts in India are inactive, the highest percentage in the world. (Demirgüç-Kunt et al. 2018) As the access to digital products across the world has increased, **digital financial inclusion has been identified as an important tool to bridge the gap of financial inclusion** by making use of cost-saving technologies through mobile phones to reach those previously excluded. (Consultative Group to Assist the Poor (CGAP) 2014) Digital financial inclusion is critical to join the new digital economy. This has opened doors for underserved communities to access formal financial services. COVID19 has pushed 97 million people into poverty. (Daniel Gerzon et al. 2021) This has made financial and digital inclusion an imperative to deliver financial tools and safety net payments to those in need and create an ecosystem where the poor build resilience against future shocks.

Financial inclusion is important for individuals as well as enterprises, especially in large parts of the developing world. The Micro, Small, and Medium Enterprises (MSME) sector, which is largely comprised of women and rural entrepreneurs, contributes immensely to the socio-economic development, economic output, employment, and exports in low- and middle-income countries. (Obi et al. 2018) Yet, they face myriad challenges and are unable to fully scale and grow. (Maheshkar and Soni 2022) One of the **biggest challenges they face is getting timely and adequate access to finance to maintain ups and downs of their business cash flows and to create working inventory**. They also need access to tools that let them easily save and thus plan for business needs. (Barry 2019) Moreover, their lives are precarious because of irregular incomes, unreliable demand, and limited market access.

Digital financial inclusion has the potential to transform the sector by offering affordable solutions like access to finance through the expansion of digital footprints, expanding the market beyond what is physically reachable. **Currently, the MSMEs operate largely through in-cash transactions instead of secure digital ones.** (Accion 2021) **Around 90% of MSMEs in developing economies that are underserved are owned by women and rural populations,** which are segments that are not financially included because of many barriers they face. (Mobile for Development 2016) The need to address the barriers faced by MSMEs is even more urgent with the pandemic hitting them disproportionately. The COVID19 pandemic put around 42 percent of the world’s micro, small, and medium enterprises (MSMEs) at the risk of failure in 2021. (Morse and Ajmera 2020) The COVID-19 pandemic has accelerated the adoption and use of technology in the world, as some MSMEs have started building a digital footprint. However, financial literacy among underserved MSMEs is low because of many reasons, **including exclusion from formal financial markets at household and business levels.** Furthermore, underserved micro-entrepreneurs in the developing world lack access to digital services. **While smartphone ownership is increasing (still low among women entrepreneurs), it is not enough to build the digital maturity needed to smoothly adopt digital financial services.**

Thus, there is a **strong need to reduce barriers and build digital and financial readiness of underserved micro, small, and medium enterprises in emerging economies like India** so that they can access digital financial services and thereby grow their business and build resilience. This report is aimed to help Accion increase the impact of the financial service providers to reach vulnerable and underserved MSMEs in India through digital financial inclusion. This report also enriches the broader learning around making digital financial services work for those at the bottom of the pyramid.

Accion

“Accion is a global nonprofit committed to creating a financially inclusive world, with a pioneering legacy in microfinance and impact investing. Accion works to empower families, small businesses, and communities overlooked by the global financial system. Accion works in three main ways to achieve its goal of financial inclusion:

- find, fund, and grow companies creating new ways to meet the financial needs of the underserved.
- advance inclusive financial services through rigorous research and advocacy for evidence-based change.
- work with partners around the world who believe in the importance of creating a financially inclusive world.”

Accion Global Advisory Solutions (GLAS) team comprises over 50 full-time financial inclusion experts and access to a similar number of consultants, globally, with hands-on experience and deep technical and managerial expertise in building and supporting financial service providers (FSPs) in underserved markets across Latin America, Africa, and Asia. GLAS's clients include banks and corporations, fintech, multi-lateral organizations, and governments that want to accelerate and deepen the penetration of financial services such as payments, savings, lending, and insurance products through digital delivery methods.

The PAE aims to enable underserved micro, small, and medium enterprises to adopt digital financial services by building the financial and digital readiness of the firms. It will aim to understand the barriers that exist for MSMEs against adoption, evaluate the impact of each digital financial product on MSMEs, and outline solutions to create effective products and strategies for financial service providers to cater to the needs of the sector. The PAE will inform Accion's programmatic strategy toward building new and improving existing digital financial products through its financial service provider partners to better serve the needs of MSMEs and expand services to the underserved

Source: Accion's website

Landscape Analysis and Literature Review

The Micro, Small, and Medium Enterprises (MSME) Sector in India

The Micro Small and Medium Enterprises (MSME) sector contributes to the socio-economic development of India. MSMEs are function in the production, manufacturing, processing, or sale of goods and basic services like hairdressing. The sector is made up of people at the bottom of the pyramid and is often dependent on local inherited skills to run these businesses. In India, the sector has gained significant importance as it contributes 30% to Gross Domestic Product (GDP) and accounts for 40% of exports. (Ministry of Micro, Small and Medium Enterprises 2013) The MSME sector has promoted entrepreneurship among the youth of rural and semi rural India. (Ministry of Micro, Small and Medium Enterprises 2013) Moreover, it also contributes greatly to providing employment opportunities to a large population of India. MSMEs contribute to employment of around 120 million people, which is the second-largest share of employment after agriculture. (Ministry of Micro, Small and Medium Enterprises 2013) MSMEs are thus a source of all-inclusive growth in India.

India has about 63 million MSMEs. However, more than 99% of MSMEs are micro or small, and only a fraction of them are registered. Most of the sector does not utilize its potential due to factors like low productivity, low efficiency, and limited access to capital. (Economic Times 2021) As a result, 99% of the enterprises in India are micro and small and do not grow to become medium in their life cycle. **Women-owned and rural businesses have the least resources and access and tend to be least digitized.** (World Bank 2021)The focus of the study will be on micro-enterprises, that have investments of less than 10 million INR (130k USD) and turnover of less than 50 million INR (660k USD).

Challenges faced by MSMEs

MSMEs operate under many significant constraints. One of the **biggest constraints is access to finance through banks or other financial institutions.** Other challenges include the **low quality**

workers and management, and technical skills, and poor infrastructure. (Business Standard 2019) These challenges prevent MSMEs from realising their potential.

The Asian Development Bank studied the access to finance problem faced by MSMEs in India and found that **inadequacy of collateral assets and lack of financial awareness of entrepreneurs are the main reasons for their dependence on informal channels of securing finance.** (C. Singh and Wasdani 2016)

COVID-19 posed a crucial shock that hampered the growth of the MSMEs in India and affected their sustainability. The challenges that they faced because of the pandemic and subsequent economic downturn include non-procurement of raw materials, reduced production and supply of final products, non-availability of employees to carry out operations, and reduction in demand. (Behera, Mishra, and Mohapatra 2021) The challenges they face in general are exacerbated by the additional burdens posed by the pandemic because they did not have the capacity to move online or sustain their business during lockdowns.

Table 1. MSMEs and their challenges

Challenges faced by MSMEs	Description
Access to finance	MSMEs have low access to finance from formal banking system. Lack of inadequacy of collateral assets and low financial awareness are the biggest reasons for their reliance on informal channels for financing their needs.
Inability to attract talented manpower	The inability to pay competitive wages means that MSMEs are not able to attract talent
Poor infrastructure and utilities	The lack of finance and unavailability of investment capital leaves MSMEs with poor infrastructure
Lack of marketing power	Lack of marketing know-how, competition from bigger firms, expensive production costs and low

	product quality
Lack of access to technology	The lack access to technology to run their businesses efficiently due to lack of awareness about technology, lack of technological knowledge. (Mukharjee 2018)

Macro-ecosystem in which MSMEs operate in India

The Indian government has recognized the role of the MSMEs in India’s growth and have adopted many policies to enable their work. The Atma Nirbhar Bharat Abhiyan’ or the Self-Reliant India Scheme of 2020 by the Government of India explicitly provided access to credit to both manufacturing and service units, including collateral-free loans, increases in repayment tenure 100% credit guarantee, as well as reclassified them as manufacturing and service to decrease checks and inspections. (Lending Cart, n.d.) The Ministry of MSME also runs multiple schemes and programs that cater to the needs of the MSME sector in India. These include initiatives in digitization, design consultation, entrepreneurship, property rights, credit guarantee, and many other sector specific schemes. (Invest India 2020b)

NASSCOM, India’s Industry Association for IT and IT-enabled services is set up to support MSMEs with end-to-end assistance in aspects of their needs. Assistance to Training Institutes (ATI) scheme of the MSME Ministry aims to strengthen programs that are catering to the skills development of MSMEs. (Invest India 2020a) Moreover, the private industry’s corporate social responsibility efforts and Indian non-profit sectors have also focused on the MSME sector’s skills development and upskilling, providing access to markets and finance, helping with digitization, etc.

Role of financial inclusion for MSMEs growth

MSMEs need financing for meeting fixed capital requirements for business, working capital for their operations and for maintaining their inventory. They also need safe financial tools (digital and non-digital) to create smooth transaction records. They also need access to tools that let

them easily save and thus plan for business needs. (Barry 2019) Access to finance has also been identified as their biggest need. However, the current banking and financial channels have failed to serve the capital needs of the sector. A report by International Finance Corporation (IFC) found that most women-owned MSMEs preferred public banks for availing of finance, they were left to rely on personal finance to meet their financing requirements while many of them borrowed from relatives and moneylenders. (International Finance Corporation, n.d.)

Digital financial services can bridge this gap by offering affordable and innovative financial solutions. However, financial literacy among underserved MSMEs is low because of many reasons, including exclusion from formal financial markets at household and business levels. Increased financial literacy and the ability to establish creditworthiness could transform the sector by making affordable finance available for their business needs. Furthermore, underserved micro-entrepreneurs in the developing world lack access to digital services. While smartphone ownership is increasing (still low among women entrepreneurs), it is not enough to build the digital maturity needed to smoothly adopt digital financial services. Taking advantage of this increased smartphone ownership to create digital awareness and increase digital footprint of the underserved MSMEs could create digital financial inclusion that serves the needs of the sector better.

Government and regulatory policy enablers of digitization and financial inclusion in India

India is the second-fastest digitizing country in the world, after Indonesia. India had about 1.2 billion mobile phone subscriptions and about 687 million internet subscriptions in 2020, who spend around 6 hours on phone each day. (Accenture 2021) Many factors have led to the spur in digital revolution in India. For example, the government's Digital India movement and a reduction in the cost of mobile data. **The Demonetization policy of the Indian Government, where the government withdrew Rs. 500 and Rs. 1000 notes from circulation in 2016 and the COVID-19 pandemic further accelerated the digitizing process in a largely cash economy.** However, the digital revolution has yet to cover about 65% of Indians. (Mckinsey Global Institute 2019) The proportion of Indian adults who has ever made or received a digital

payment is 35 percent (as of end 2018, the most recently available data). (Harihareswara and Miller 2021) The digital penetration of rural populations and women, who make up majority of the MSME sector, is the lowest. This disparity exists despite the rapid expansion of digital bank accounts and digital payments products in India.

The sectors that are most digitized or are newly digitizing include financial services, education, agriculture, retail, and logistics. (Invest India 2021) The supply-side innovations in these sectors, which have high touch points with a large population, will unlock more opportunities for citizens to access better services.

India's digital transformation is hugely credited to the Indian government's push for digitization, specifically, its flagship **Digital India program**. Digital India movement was launched in 2015 with the aim to transform India into a digitally empowered society through three key vision areas: improved digital infrastructure, availability of on-demand government services, and increasing access to digital connectivity for all citizens. (Government of India 2020) The biggest initiative under the program has been the introduction of the **Aadhar identify platform, a biometric digital identity program that covers 1.2 billion Indians today**. Other notable initiatives that have contributed to digitization in India include technology-enabled cash transfer program called **Direct Benefit Transfers (DBT)** that shifted the welfare policies in India, the rural broadband connectivity program called BharatNet project, and the launch of **MyGov Portal** where citizens can engage with the government. The DBT program has so far enabled millions of cumulative electronic cash transfers to the poor. The BharatNet project has provided broadband connection to all 250,000 Gram Panchayats (local rural government blocks) in the country. These missions are complemented by other government schemes that focus on improving government service delivery by harnessing the power of technology like the JAM trinity program. **The JAM program was targeted to implement large-scale Direct Benefit Transfers (DBT), consisting of Jan Dhan bank accounts, Aadhar unique identity number, and mobile phones**. Finally, **Pradhan Mantri Jan Dhan Yojana (PMJDY: Peoples' Wealth Scheme)**, a government scheme was launched to help the people of India with affordable financial services

like bank account creation, insurance, pensions, etc. (Ravi 2018) These have together enabled digital transactions using mobile phones. 80% men and 77% women have bank accounts. Another important game changer has been **the development of UPI (Unified Payments Interface) by National Payments Corporation of India (NPCI)**, which has **allowed transactions worth 4 billion INR across the country.**

The government has made considerable effort to take advantage of this digitization push to bring financial inclusion to the poor. The efforts began with the launch of the financial literacy program in 2013. Many digitization processes have directly been implemented to enable access to financial services to the poor. For example, digitization of land records of farmers was done so that farmers can access credit and other resources. Moreover, policy efforts such as the National Mission for Capacity Building for Bankers (NAMCABS) were launched to develop skills for MSME lending and improve entrepreneurial sensitivity among field-level bankers. Recognizing the prevalence of information gap that exists for small businesses, the government initiated the Certified Credit Course, which would allow intermediaries to act as facilitators and advisors to MSMEs. NITI Aayog, India's apex public policy thinktank announced a proposal of developing full-stacked digital banks (DBs) with no physical offices, where operations would run entirely on the internet. **The Reserve Bank of India (RBI) also launched the National Policy on Financial Inclusion in 2020** with the aim to provide banking access to every household within a 5 KM distance. **Specifically for the financial sector, the RBI's push to digitize banking operations has created opportunities for financial inclusion.** Implementation of the electronic payment system such as **RTGS (Real Time Gross Settlement), Mobile Banking System have contributed to making financial access easier.** These have also led to a reduction in fraud and corruption.

The Ministry of MSME of the Government of India has outlined digital payment penetration as one of its priorities. (Government of India 2021) The commitment to bring every sector of India under the formal banner of digital payment services has led the Ministry to spread awareness about different forms of payments like BHIM, and UPI.

Thus, the **strong need of the large underserved MSME sector to transform its business operations and growth using digital financial services and a strong push from the top of the government to push digitization of the sector through various policy tools.** This has created a ripe field for the financial service providers and MSMEs to bridge the current gap and speed up the process of digitization and bring the revolution to the bottom of the pyramid.

Impact of Digital Financial Services

With this backdrop of strong government and regulatory efforts to accelerate the process of digitization, digital financial services have the potential to create a large impact on serving the needs of the underserved MSME sector in India. It can create an impact in the following ways:

1. Digital financial tools **allow capturing of alternative data through payment transaction history** and other sources of data from telecom providers so that the MSMEs without a credible credit history can build a digital footprint and thereby open avenues for increased access to finance. (Asian Development Bank 2020)
2. They can **offer low-cost solutions that can be scaled easily, especially by creating innovations like wallets and digital G2P (government to persons) payment systems.** CGAP estimated that digital delivery of **last-mile solutions can reduce the costs of credit and insurance products by 5-15%.** (CGAP 2014)
3. Digital solutions, **implemented through mobile phones have the potential to serve the remotest populations without access to physical banks.**
4. It can offer **goal-based savings solutions to MSMEs** so that they can effectively plan their business finances better.

Scope of the Study

Financial Service Providers and their Product Offerings

Accion worked with **3 financial service providers in India** (and 6 other countries) to launch digital financial products to help grow underserved Micro, Small, and Medium Enterprises (MSMEs). I am working with these 3 partner institutions that Accion has invested their money in to help understand how they can serve the underserved MSMEs better.

Following are the partner and product names. All 3 of them operate in more than 5 states in India.

Table 2. Financial Service Provider Partners and their Product Offerings for MSMEs

Partner Name	Product	Description	Users
Sub-K	Sub-K Pay	Digital loan repayment tool, administer through a mobile application	50,000
Dvara	SmartGold	Microsavings plan offered through mobile application	29,000
Annapoorna Finance Pvt. Ltd (AFPL)	Just in Time Loan	Small ticket size loans that customers are approved for and then can be drawn down as needed through SMS	1000

Problem Statement

What are the barriers and enablers for MSMEs in the adoption of these digital financial products and how can we better serve their needs?

Additionally, the PAE will answer the following questions.

1. Where do the micro, small, medium enterprises stand on digital and financial readiness to adopt digital financial services?

2. What has been the impact of digital financial products (payments, savings, credit, insurance) on the perception of wellbeing, financial health, and business performance?
3. What changes do digital financial service products and the enabling ecosystems need to cater to the needs of underserved micro, small, and medium merchants?

The PAE focuses on addressing this problem and identifies avenues to increase access using three approaches to increasing the reach of digital financial services:

1. Increasing digital financial product usage of the current customers.

This approach looks at making the current digital financial product offerings of the financial service providers work better for the customers through altering these offerings based on feedback and literature, and creating sustainable feedback loops

2. Increasing customers through better utilization of the current products.

This approach attempts to expand the current digital financial products to more MSME customers by targeting MSMEs who “look” like the biggest users of the current offers in neighboring communities

3. Expanding customer base by developing new better-catered products and partnerships.

This approach suggests ways to expand digital financial services by creating an enabling ecosystem and lasting partnerships that will create a long-term pathways to digital financial inclusion of all MSMEs.

Methodology

Literature Review and Landscape Analysis

I conducted a thorough literature review of 115 research papers, articles, and reports, and reviewed the data on financial inclusion to understand the demand- and supply-side barriers and enablers of MSMEs’ digital financial inclusion from different contexts (see background section). I also studied the landscape—government policies and other macro-enabling environments—to understand the ecosystem in which MSMEs and financial service providers operate.

Quantitative Analysis

My quantitative analysis was based on survey data from Accion's 2 assessments that were carried out in early December 2021.

1. **Digital Maturity Assessment:** A short assessment tool that develops a digital maturity score for MSMEs in emerging markets based on behavioral responses. It consists of 14 questions (yes/no) and takes about 10 minutes to complete.
2. **Product Impact Assessment:** lean survey tool for comparing usage of different digital product types on key socioeconomic outcomes of interest. It consists of 12 questions and takes about 8 minutes to complete.

The study also used **supplementary demographic and transaction data of 1500 MSMEs** provided by Accion's financial service provider partners in these regions to get variables like gender, economic activity, registered products, customer engagement, transaction data, and length of the customer relationship.

Qualitative Interviews

Beyond these datasets, I also **conducted in-depth interviews with MSME customers and the leadership team of the financial service providers** via Zoom to supplement quantitative findings.

My **sample for in-depth interviews was composed of 15 MSMEs, 5 from each partner institution**. I shortlisted these candidates from the quantitative findings in a way that the sample represented all digital maturity levels and product usage levels, and represented a range of MSMEs from those who expressed the most difficulty in accessing digital tools to those who expressed the least difficulty.

My sample for **qualitative interviews with the leadership team of the digital financial service providers consisted of 6 interviews, 2 from each institution**. The 2 interview candidates I

shortlisted composed of the head of the institution who shared an overall organizational strategy and the product manager who shared insights about product development and rollout.

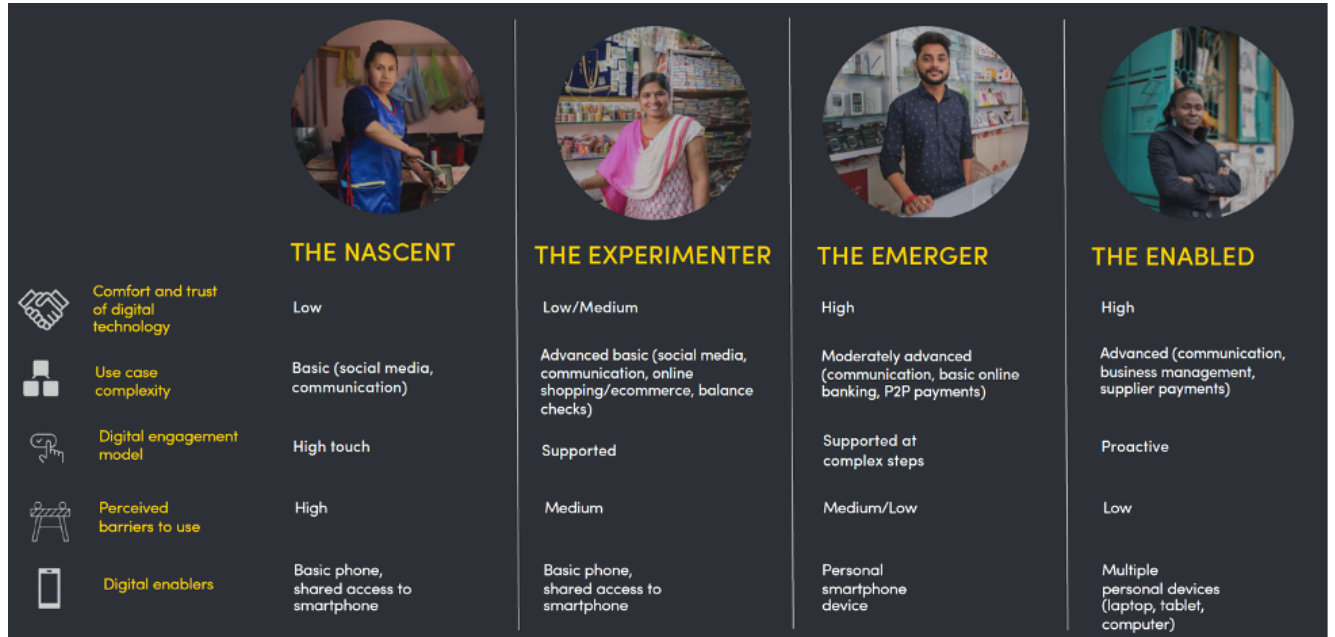
Analysis

I combined the findings from quantitative and qualitative research to outline the barriers and enablers most repeatedly voiced by MSME customers. Additionally, I combined this analysis with the findings from my interviews with the firm leadership of the digital financial service providers to map the demand-side needs against supply-side constraints.

The analysis also divides customers into the following 4 stages of digital maturity based on the segmentation developed by Accion called Digital Maturity Score.

1. **Nascent** – the stage comprises of customers who have low comfort with digital technologies, do not have full access to mobile phones, and do not have a strong understanding of the linkage of digital financial services to business growth.
2. **Experimenting** – the stage comprises of customers who have moderate levels of technology usage, mostly for social media and communication, do show some willingness to try digital financial services, and face moderate barriers to accessing technology.
3. **Emerging** – the stage comprises of customers who have high levels of technology use for multiple purposes, feel confident in using simple digital financial services for business, and only sometimes face barriers to accessing technology
4. **Enabled** – the stage comprises of customers who have strong confidence across both financial and non-financial use of digital technology.

Figure 1. Digital Customer Archetypes



Source: Accion

Findings

The quantitative and qualitative analysis of survey and transaction data of MSMEs in India served by Accion and its partners.

General characteristics of my sample

The total MSMEs that were a part of my analysis were 1559, with 277 of them from AFPL, 1033 from Dvara, and 592 from Sub-K. **The majority, 86.46% of my sample was female, and the majority, 74.3% were rural MSMEs.** The average income of customers is **INR 26,412 (approx. USD 375)**. The average age of my sample customers is 38.8 years. **The main economic trades of my sample MSMEs are agriculture and related activities, and wholesale-retail trade.** Most of the 'other' category includes tutoring and handloom work.

Figure 2. MSMEs by partner

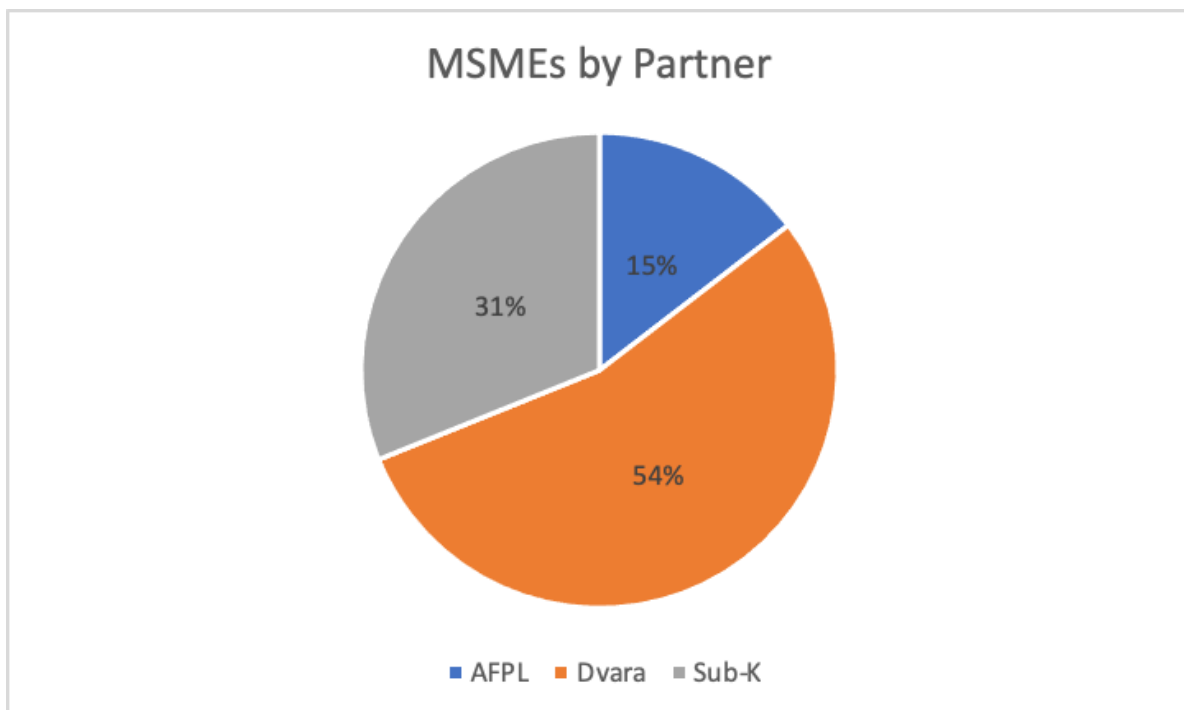


Figure 3. MSMEs by Sex

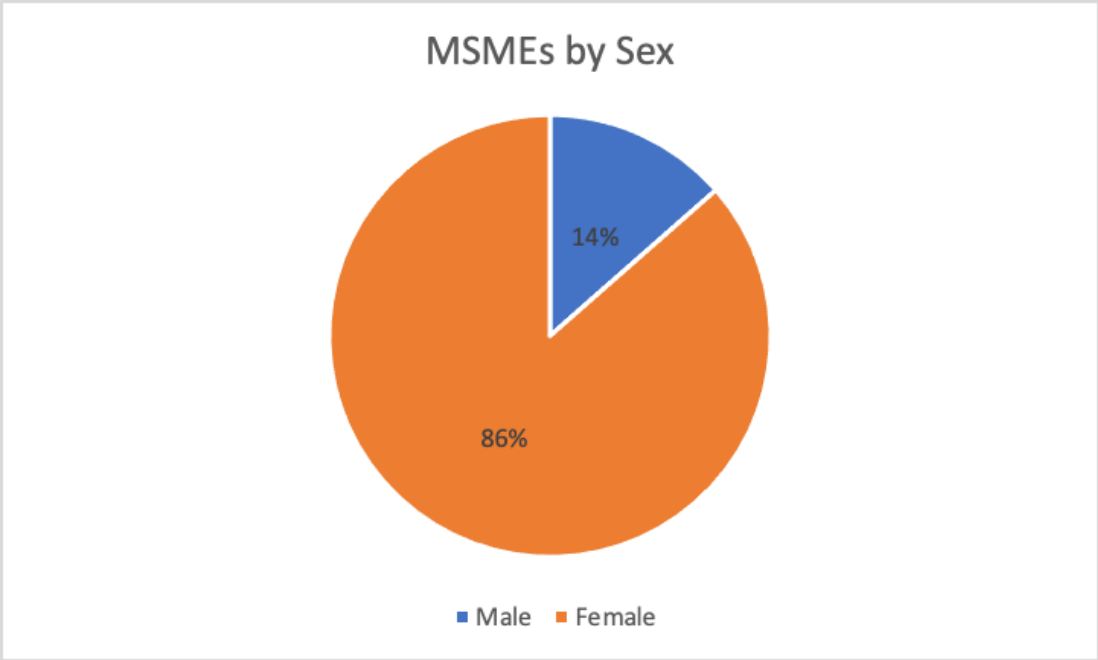


Figure 4. MSMEs by Geographic Location

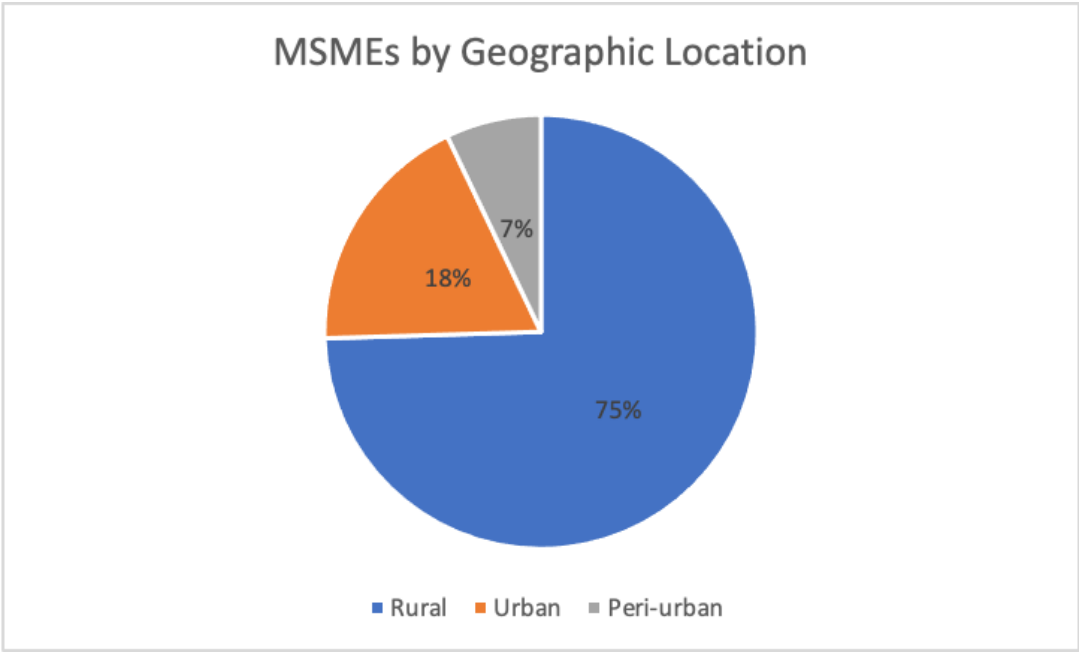
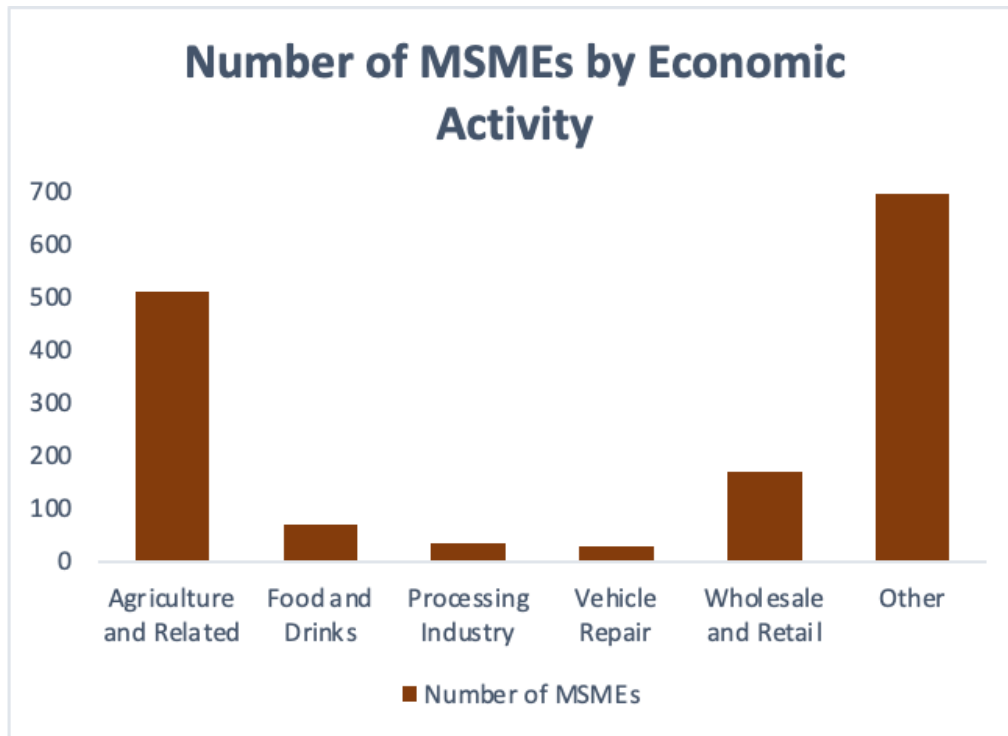


Figure 5. Number of MSMEs by Economic Activity



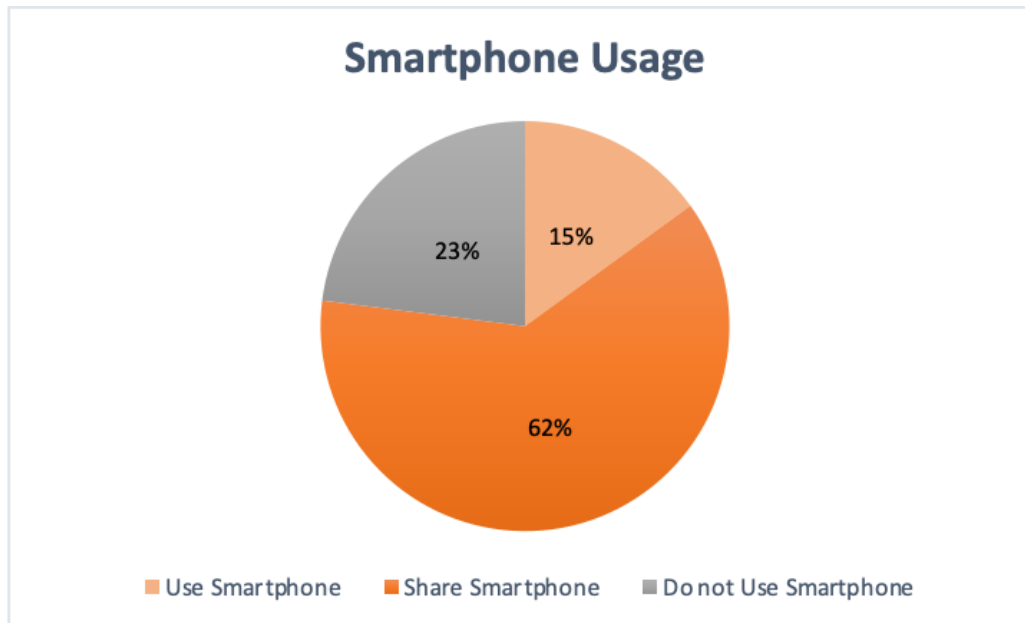
The main themes and insights that were found using a mixed-methods analysis of the quantitative sample of 1559 and qualitative interviews of 15 MSMEs and 6 practitioners working in the field of digital financial inclusion are outlined below.

Low utilisation of current digital financial products

Insight 1. The majority of MSME customers share a mobile phone with their families. Women have the lowest smartphone ownership and use help from other family members to make digital transactions.

While the majority of the MSMEs (77%) have access to smartphones, 62% of MSMEs within that share their smartphones with their families. More than 20% of the entrepreneurs surveyed do not have access to smartphones.

Figure 6. Smartphone Usage among MSMEs



Literature tells us that women may not have equal access to shared resources. **Moreover, patriarchal norms prevent women from owning assets, including mobile phones.** (Baruah 2007) Many times, women’s low decision-making power in the house also prevents them from having an agency over shared assets like mobile phones. (Baruah 2007) Many women entrepreneurs I spoke with reflected this reality. A retail shop owner from Rajasthan, who shares a smartphone with her family, said, “Although the loan is in my name and is for my shop, I have never used the app to make any transactions or payments. My husband does it for me. Sometimes I take help from my child too.” On asking her to describe what she used the phone for, she added, “I make calls to my mother and sometimes play games. My husband takes the phone with him so I do this at night.” **Her comments corroborate the hypothesis that most households in the data that are under the bucket of “sharing smartphone” effectively exclude women from the asset.** Moreover, many women entrepreneurs I interviewed shared that **they rarely make any transactions on their own, even after more than 6 months of using the product.** They take the help of their husbands, children, or self-help groups to support them with digital technology. With the majority of the MSMEs being rural women, policies and products must be catered to reflect these household and community dynamics that women

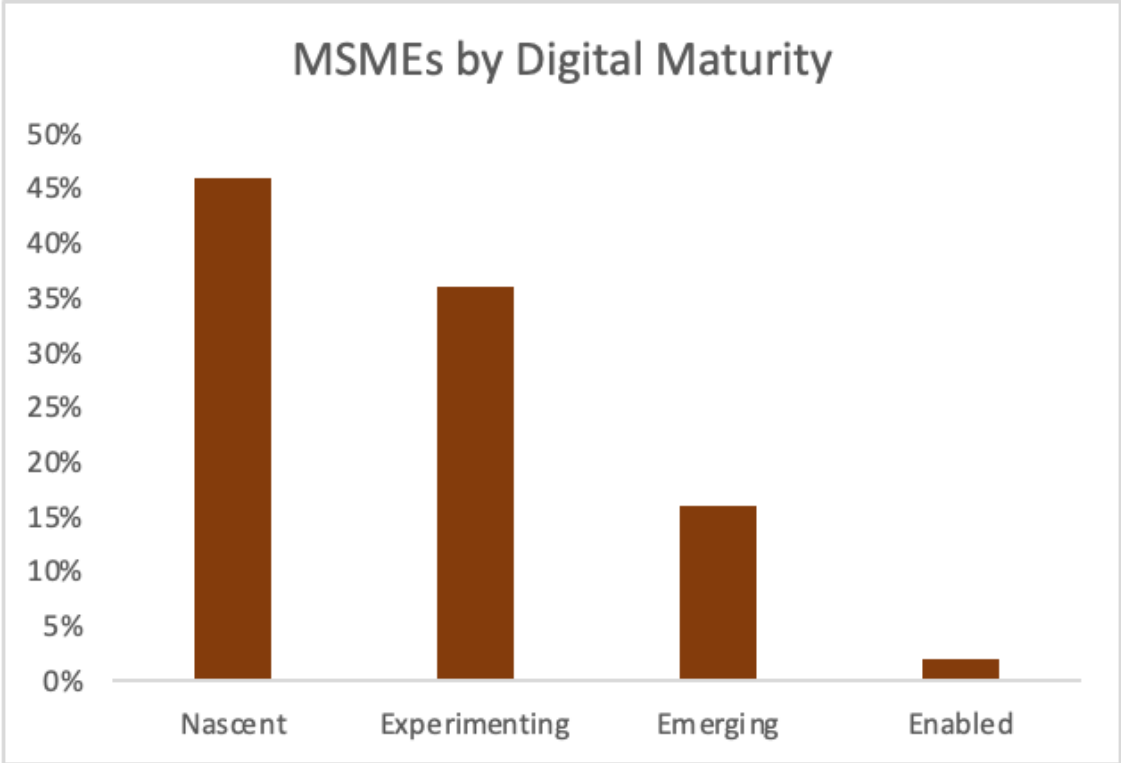
entrepreneurs in rural households operate in.

Recommendation 1. Training sessions that are implemented by field agents to familiarise the **MSMEs with digital financial transactions could potentially include their families, especially husbands and children.** Training sessions conducted at a household level could make them more effective as husbands and children could learn directly from the field agents and support women. Additionally, **the training sessions could include a module on sensitisation of men around the importance of mobile technology for the businesses of their wives.** It is also important to acknowledge that while these efforts are important, gender norms are difficult to change and can depend on many factors. (S. Singh 2017)

Insight 2. Although the majority of the MSME customers are rural women who are in the nascent stage of digital maturity (the lowest stage of digital maturity), they make up the lowest number of transactions, showing us that a large number of customers remain untapped.

More than half (52%) of the customers of the financial institutions are in the nascent stage of digital maturity and 37% of them are still in the experimenting stage (the second-lowest stage, with moderate levels of digital comfort). Only about 2 percent of customers are enabled (the most advanced stage of digital maturity).

Figure 7. Percentage of MSMEs by level of digital maturity



Within this customer profile, the highest number of transactions, on average, have been from the enabled users who make up the smallest percent of customers of the institutions, followed by nascent customers. This tells us the potential to include more nascent customers as users. Men have more than double the volume of digital transactions compared to women. Similarly, urban MSMEs have 50% more digital transactions compared to rural MSMEs.

Figure 8. Average Transactions per year by digital maturity levels of MSMEs

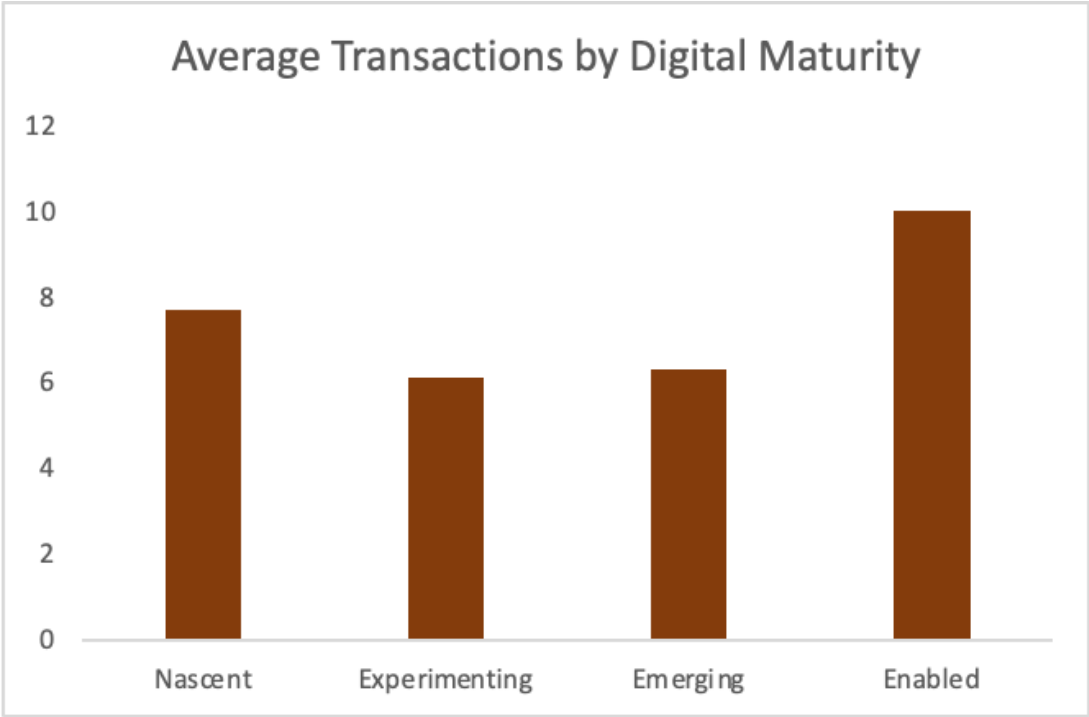


Figure 9. Average transactions per year by sex

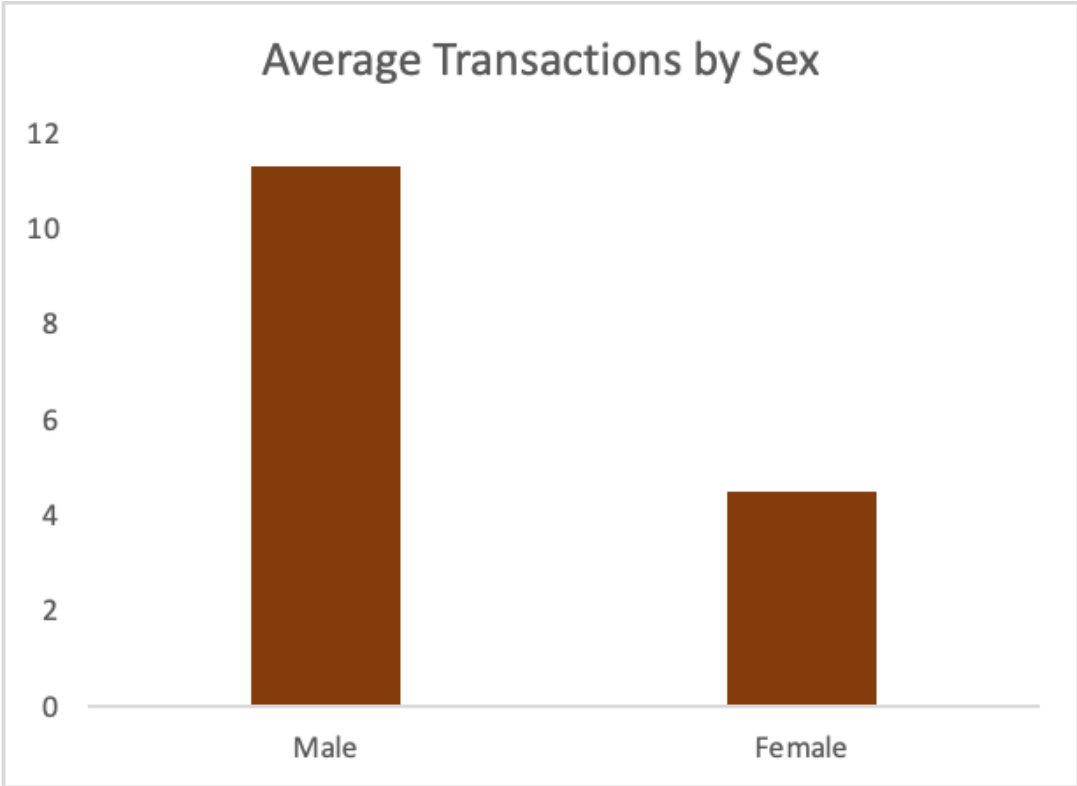
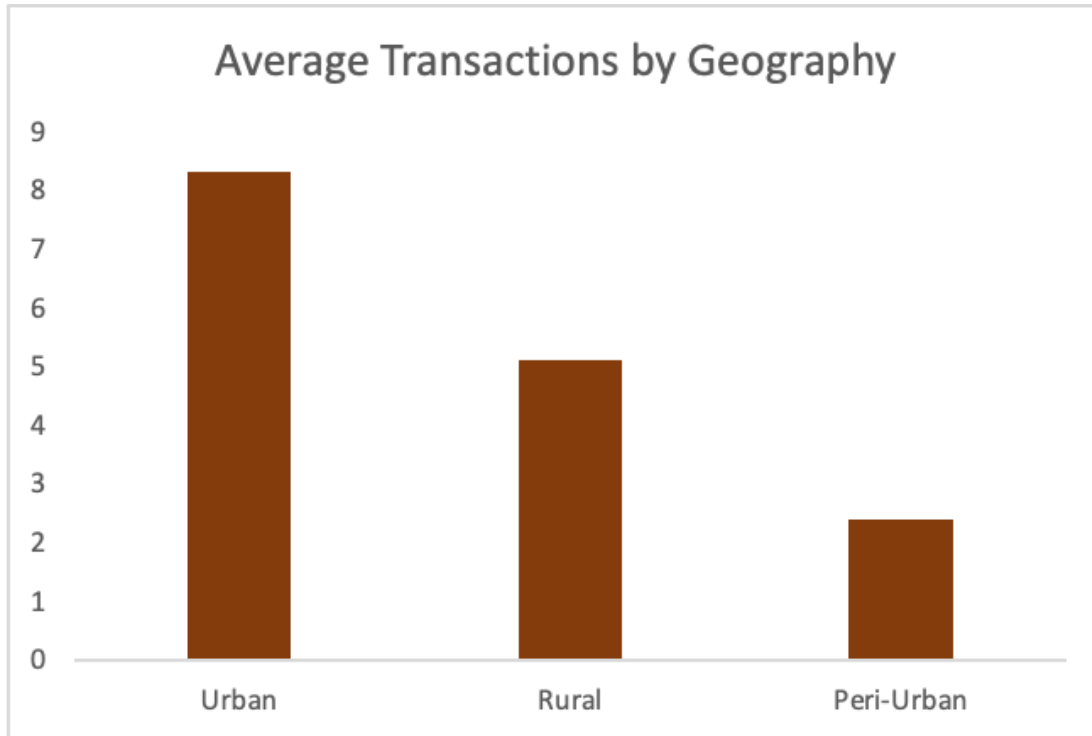


Figure 10. Average transactions per year by geography



Multivariate regression analysis

I ran a regression where the volume of transactions per year is the dependent variable and gender, age, geography of the MSME, income, and level of digital maturity are independent variables. Though my data does not allow me to give causal estimates of the effect of these variables on transactions, the estimates suggest and corroborate some of the patterns I found in the analysis of my qualitative data and related literature.

Table 3: Multivariate Regression Analysis

Dependent Variable: Volume of Transactions
Type: OLS linear regression
MODEL FIT:

F(7,209) = 12.11, p = 0.00				
R ² = 0.29				
Adj. R ² = 0.26				
Standard errors: OLS				

	Est.	S.E.	t val.	p

(Intercept)	18.14*	8.27	2.19	0.03
Age	0.07	0.07	0.95	0.34
Female	-10.57**	1.35	-7.84	0.000
Emerging	-8.96	8.01	-1.12	0.26
Experimenting	-8.35	7.99	-1.04	0.3
Nascent	-8.78	7.96	-0.85	0.4
Urban	7.16***	1.55	4.63	0
Monthly income	0.00***	0.00	-4.59	0

The regression estimates suggest that **women have approximately 10.57 lower transactions per year than men**. Similarly, **rural MSMEs have lower transactions per year than urban MSMEs**. For digital maturity categories as well, **lower digital maturity shows lower transactions per year**. As we go lower in digital maturity, from emerging to nascent, we see a downward

trend--lower digital maturity being correlated with lower transactions per year. However, these estimates are not significant. The lack of significance could also be because the sample is underpowered as the analysis is splitting the sample into 4 categories. Controlling for age, geography, sex, and digital maturity, monthly income is not associated with transaction frequency.

To reiterate, the findings of my regression analysis are purely descriptive, since I cannot control for omitted variable bias.

Recommendation 2. As all 4 types of customers belong to similar communities, **developing an understanding of what led the enabled customers to develop high levels of digital maturity could generate insights about creating pathways for other customers.** Thus, the financial service providers must commission a case study of enabled MSMEs.

Distrust of technology among nascent MSME customers

Insight 3. There still exists large distrust of technology and digital transactions among the nascent MSME customers.

In the quantitative survey, the distrust of MSMEs in digital technology and transactions is captured in 2 variables—identity and privacy concerns around misuse of data and low confidence in trusting the information available online.

Responses of customers who expressed that they were concerned about their identity or private information will be stolen or misused if they used the phone or internet for financial services are as follows.

Table 4. Responses of MSMEs who expressed concern about identity and privacy

Yes, I am concerned	No, I am not concerned	Refuse to answer
---------------------	------------------------	------------------

412 (27.3%)	668 (44.29%)	428 (28.3%)
-------------	--------------	-------------

Table 5. Responses of MSMEs who said that they felt confident that the information they found online was correct.

Agree	Disagree	Refuse to answer
575 (38.1%)	493 (32.7%)	440 (29.2%)

Thus, it is clear that while many MSMEs show signs of trust in digital technology, as expressed by raising privacy and identity concerns and by showing confidence in online information, **about 30% MSMEs still express concerns about digital technology.** This finding was solidified in my qualitative interviews. **Digital transactions in general caused anxiety to many MSME customers** because of the lag between when an amount is deducted from the bank account and when the repayment is recorded in the system. One of the agriculture entrepreneurs noted, “My money is gone from my bank account but my loan still shows that it is unpaid, so I have to rush to the bank to inquire if my money was stolen.” Not only are there lags, but the system of online payments does also record a small number of transaction failures. Many MSME customers also mentioned that **the physical loan collection felt more secure to them because they are familiar with the field agent who collects the amount, and the field agent also gives them a receipt of payment.** The importance of payment receipts was recognised across the board by MSMEs, as 11 out of 15 MSMEs I interviewed brought this up. One of the MSME said, “When I make an online payment, I am never sure if the bank will accept my money. What if the loan officer came and made a claim that I never made the payment? I thus take pictures of the ‘done’ message using a different phone to keep the record of payment.” In a follow-up, she mentioned that such fraud has not happened but still wants to be extra sure in case her hard-earned money gets lost because of fraud. 2 MSMEs also mentioned that **because there are many sellers in the market who sell digital products, they are unsure of which one to trust and which to avoid.**

This distrust is also observed by the financial service providers and small steps have been taken to address it. For example, the head of one of the financial service providers mentioned, “When we introduced the products using a clickable link, we got no success because no one clicked on the link. Later when we inquired about what went wrong, we discovered that the MSMEs were reluctant to click on links because there have been multiple cases of fraud using WhatsApp links in their community.” He further added that they developed video lessons to ensure that the MSMEs believed the product was not fake and put the faces of people they trusted in the videos. However, this must be pre-empted and incorporated across all stages of product development, outreach, and implementation process.

Recommendation 3. Importance of training and sensitisation of digital payment system. Beyond improving training modules, I would also recommend **investing in the capacity to handhold MSMEs to perform the first 3 transactions in presence of field agents. Track communication and transaction failures that the system experiences and share them immediately with the MSMEs.** This notification can ease the anxiety experienced by them. **Sharing payment receipts of each transaction with the MSMEs using messages or WhatsApp** is also essential to make them feel secure about their transaction.

Lack of enabling ecosystem

Insight 4. There is a lack of an ecosystem to support the transition of MSMEs as digital financial users.

While there are multiple efforts from the suppliers and the government to enable digital transformation of the MSME sector, **most of these top-to-bottom approaches have not yet generated sufficient demand from the MSME customers** as most of the potential remains untapped.

One of the concerns that the MSMEs repeatedly cited in interviews was that **the digital payments were not feasible for them because they did not receive their business revenue in**

digital cash. As their incomes are generated in all cash, **digital payments do not make their transactions easier because they have to go to the bank to deposit the money first and then come home to deal with the difficult task of operating the digital app.** One of the MSME entrepreneurs who ran a handloom business said, “Digital payments are not saving me time because I still have to rush to the bank because my customers do not pay me in my app. Earlier I had the loan officer come home and collect my loan but now I have to first deposit the money and then pay using my app”. Thus, the ecosystem where not only MSMEs but all customers, suppliers, and middle-men who transact with MSMEs must adopt digital technologies. **Moreover, unreliable internet connectivity, low penetration of smartphones, and high cost of mobile data all contribute to the lack of ecosystem needed to support the transition of MSMEs into digital users.** The pandemic did shift the way in which revenue was received by the MSMEs to some extent as many customers used digital money to pay. As one of the heads of the financial service provider noted, “It [pandemic] is the first time that we have seen our customers make digital transactions through mobile apps that are of amounts smaller than 100 rupees (~1.35USD), sometimes even smaller than 50 (<1 USD). We are positive that these changes will persist and we will soon have an economy that is cashless.” However, this penetration is now high enough to fully create the ecosystem. Payments are a gateway and an influx point to enabling digital financial inclusion. (Asian Development Bank 2020) Thus, investments in payment products to create an enabling ecosystem can go a long way.

Recommendation 4. Investments in creating an ecosystem must be considered. Innovations like adding an e-wallet to the product to start building digital footprints can be made to facilitate this process. Partnerships with the government, which is prioritising digital transformation, can be explored. The process of building digital footprints for MSMEs would occur in the following 2 stages.

1. MSMEs are dealing in digital money received through digital business revenue and digital finance
2. MSMEs are creating their own digital money

Supply-side barriers

Insight 5. While most of the digital financial inclusion effort is through a supply-side push from the government and fintech providers, **there exist many constraints within the financial providers including resistance from field staff agent networks to train, retrain, and handhold the MSMEs to support their transition into the digital world.**

Currently, the digital transformation process happens through training, handholding, and troubleshooting done by field agents. These agents travel across communities in rural and peri-urban regions, interact with the MSMEs, introduce them to the financial offerings, sell them, and also complete the loan collection process. The current functioning relies heavily on in-person interactions and relationships that the agents have built with the MSMEs. Digital financial services are moving away from the current structure and are enabling remote transactions. However, one of the challenges that were highlighted by the leadership of the financial service providers during the interview was that **the field agents show resistance to undergoing training and putting the effort to handhold the MSMEs.** Many field agents feel that the digital technologies are also impacting the deep relationships they built with the MSMEs.

As predicted by the Asian Development Bank's study, the disruption in the last-mile agent network that the financial providers have relied on for many decades likely to be higher in payment products but the credit products will continue to rely on their support and wisdom about the communities. (Asian Development Bank 2020) Based on this finding, **the overall strategy of the firm could be shifted to ease the contraction of the agent networks that the firms expanded all these years.**

Recommendation 5. Thus, changing this mindset and designing incentives to get field agents, who are arguably the most important stakeholders in delivering digital transformation, to fully buy the mission of the digital financial revolution. **Building internal alignment before rolling out products** is key to a successful take-up and satisfactory customer experience of digital products by MSMEs.

Insight 6. The top-down push from the financial service providers and the government to expand digital financial inclusion yields minimal short-term results and it should be viewed as an investment to earn medium- to long-term gain.

Most of the MSME customers, especially those in the nascent and experiment stages (lower levels of digital maturity), remain unutilised by the current product offerings. While the MSMEs are on the journey to creating their digital footprint and increasing their digital literacy, **there is a long way to go before the sector can realise its potential.** The investments required to enable this transition, like creating training modules and training the field agents, investing in reliable call-centre assistance for customers, meeting the increased handholding demand expressed by customers, creating awareness about products and digital sensitisation, mean that **the providers are putting in a lot of their money and efforts into supporting this digital transition. In the medium- to long-run, once the burden (and thus transport costs and number of hours) of the field agents decreases as the MSMEs have a moderate comfort in dealing with digital financial products, the financial service providers will reap the benefits of the products.** One of the CEOs of the financial service providers said that the safety aspect is being taken care of, especially in rural areas where theft in and outside of banks, ATMs was common, most of them said that there are more investments needed to truly reach those at the bottom of the pyramid.

If these investments are made in the right direction, not only will these products become profitable, but they will also open opportunities to roll out many new innovative products that cater to the needs of the MSMEs with ease.

Recommendation 6. Continue investing in building digital capacities of MSMEs with simple products, and use an incremental approach to introducing new products once the digital maturity of the MSMEs is built.

Perceived benefits of digital financial products

Insight 7. Digital financial tools have helped MSMEs plan their finances better and grow their business.

When these services were utilised, mostly by the emergent and enabled customers (those with higher levels of digital maturity), **the customers did see the ability to grow their business by getting easy access to finance and saving time.** The enabled MSMEs who gained comfort with the products expressed that the digital disbursement and repayment of loan amounts saved them a lot of time. They did not have to travel to repay the loans nor did they have to schedule time for the field agent to collect the amount. Some MSMEs also expressed that their experience with field agents was not always pleasant and they were relieved to be independent to make their payments from home, while others shared that **they saved a lot of transport costs by making payments from home.** Some also shared that digital transactions eliminated the risk of theft while travelling with loan and repayment amounts. Moreover, **the ability to see loan repayment schedules in advance on the app also made it easier for some MSMEs to plan their business expenses better.**

Below are the quotes from the interviews of MSMEs served by Sub-K, one of the financial service providers in India.

“I am glad I do not have to deal with the rude loan collectors since I can make my payments from home or store. I have often gotten threats from them if I am unable to be present at my home or store so I have had to adjust my schedules based on their availability”. “I am saving a lot of time and transport cost by using Sub-K Pay”.

“I can see my loan payment schedules in advance on the app and that helps me plan my expenses better. Since using the app, I have a sense of what the timeline of my payments is and that has been super useful.”

Recommendation 7. Make the **benefits experienced by enabled MSMEs explicit** among the

MSMEs with lower digital maturity through **creating avenues to share experiences** or by creating video content to show them. If the MSMEs are able to internalise these benefits experienced by the current digital product users, they will be encouraged to adopt them.

Insight 8. Customers experience positive spillovers including increased familiarity with other digital products like GooglePay and Paytm.

The digital maturity gained and nurtured through the process of adopting the product offerings of the financial service providers were **transferable to other digital avenues** like e-wallet payment apps like Paytm and Google Pay. Moreover, the pandemic did shift the way in which revenue was received by the MSMEs to some extent, and many of the MSMEs adopted using digital payment apps like Paytm and GooglePay. An MSME owner of a beauty salon in rural Madhya Pradesh noted during an interview, “I now also accept Google Pay and Paytm money from my customers. It is very easy to use after learning the Sub-K Pay app.”

Recommendation 8. Tap on this learning expansion by exploring partnership avenues to include other digital products into the current product offerings. The impact of digital financial services can be amplified if all the partners come together and combine learnings.

Recommendations

I offer three approaches to expanding the usage and adoption of digital financial products by MSMEs in India. Each approach outlines a set of next steps that the financial service providers can take to achieve this mission. Each approach is assessed using the insights outlined above, digital maturity and product impact survey data, and interviews with customers and other key stakeholders like the leadership of financial service providers and field agents.

Criteria

The approaches will be evaluated based on the following three criteria:

Operational feasibility: The bandwidth of the digital financial service providers in terms of staff capacity, training capacity, and making internal decisions to implement the proposed solution.

Financial feasibility: The investments in building digital capacity involve costs of rolling out the right products and invest in supporting items like training costs. The financial feasibility criteria evaluates the ability of the proposed solution to make short- to medium-run gains for the financial service providers along with providing affordable solutions to meet the needs of the MSMEs.

Financial inclusion: The primary goal of the study is to increase the adoption and usage of digital financial services to underserved MSMEs. Thus, the financial inclusion criteria will evaluate the ability of the proposed solution to serve the needs of the underserved communities through the following question: **How can the product target MSMEs in the nascent and experimenting stages of digital maturity, who are less digitally literate and may not have access to smartphones?**

Policy Solutions

The overarching recommendation is that the financial service providers should continue to collect the data about digital segmentation so that tailored solutions can be designed and implemented. The data and analysis suggest that these customers operate differently and have different needs, so differentiated solutions can go a long way.

Approach 1. Increase digital financial product usage of the same customers through

1. big and small changes in the current product offerings to cater to the underserved MSMEs
2. focusing on transitioning nascent and experimenting MSMEs to emerging and enabled stages of digital maturity through differentiated training to them that involves stronger handholding and trust-building efforts.

Proposed product changes

The current products, Sub-K Pay (a loan repayment application), SmartGold (a digital microsavings product), and Just in Time loan (a digital emergency loan product) must undergo following changes based on the insights noted above.

1. Receipts of the loan repayment, savings, or deposits should be made available in the app and through messages to all MSMEs.
2. Create a communication message to communicate all transaction failures along with the assurance that the money will be deposited back.
3. Handhold the MSMEs in the nascent and experimenting stages (those in the lower digital maturity stage) with the first three transactions
4. Reduce the size of the app because most customers do not have space in their phones.
5. As the products are linked to phone numbers, verify phone numbers every few months because lot of customers change their numbers every few months as they get better deals for internet subscriptions and do not receive communication from the financial service providers.

Transforming Training Modules and their Delivery

Before bringing in any changes in the delivery methods, **internal alignment should be built**. This is key as the field agents must be properly trained and bought into the idea of making this change happen. Creating videos to retrain the MSMEs in the lower digital maturity stages regularly is also important. Invest in the capacity to handhold the first three transactions for nascent and experimenting customers as well as any hesitant customers.

Given what we learned in Insight 2, many customers experience trust and awareness issues with respect to digital technology and transactions. **Creating awareness around digital safety should also be a part of the training modules**. Details around good digital practices like what smartphones to buy (ones with more space, reliable brands), what messages to trust, how to call customer care, etc should also become a part of the training modules. Clustered training to cater to the needs of hesitant customers should be done.

This approach **ranks high on the two criteria of financial feasibility and financial inclusion and ranks moderate on the operational feasibility criteria**.

Table 5. Evaluation of Approach 1 based on 3 criteria

Criteria	Rank	Notes
Operational Feasibility	Medium	Rolling out small changes in the product is operationally feasible because it does not need significant innovation or R&D. However, the facilitating new and more detailed training will require buy-in of all key stakeholders like the field agents and will need some work.
Financial Feasibility	High	The changes in the products and the training modules will not pose a significant financial burden on the financial service providers. These are good small investments to make that will go a

		long way.
Financial Inclusion	High	As this approach directly aims to include those MSMEs that are currently excluded, particularly in the nascent and experimenting phase, it ranks high on the financial inclusion criteria.

Approach 2. Increase customers through better utilization of the current products.

This approach talks about ways to expand digital financial services **by creating an enabling ecosystem and lasting partnerships that will create a long-term pathways to digital financial inclusion of all MSMEs.** The steps to do so include:

1. Create accurate customer profiles where the demographic and other information about the MSMEs is captured.
2. Based on these profiles, search for customers in the community who look like them and market to them.
3. Study the MSMEs who have transitioned from nascent to enabled stages and write down specific steps that can be taken to support more MSMEs.

This approach would expand to more enabled segments in different regions based on creating accurate customer profiles. Most of the credit offerings are given as group loans in the microfinance segments. Since most of the rural women population is connected with self-help groups, this can be utilised to make reach the nascent and experimenting customers. If an enabled customer is identified within a group, she can be tapped to spread the message and learnings from her experience of using the products. Similarly, **identifying new enabled customers from more self-help groups could be one potential way to improve access.**

Table 6. Evaluation of Approach 2 based on 3 criteria

Criteria	Rank	Notes
Operational Feasibility	High	While this approach will require additional data collection and analysis, it does not involve any operational investments or staffing requirements to implement, thus ranking high in operational feasibility.
Financial Feasibility	High	Similarly, this approach requires small time and resources to build customer profiles, thus ranking high in financial feasibility.
Financial Inclusion	Low	This approach looks at expanding access to MSMEs who look like the existing enabled ones and then using their network to expand to underserved MSMEs. While this approach has the potential to result in significant financial inclusion, it does not immediately cater to the needs of the underserved MSMEs, thus ranking low on financial inclusion.

Approach 3. Expanding customer base by developing new better-catered products and partnerships.

Create partnerships between financial service providers and the new mobile network operators (MNOs) to create interoperability in products. Some of the areas where this could be leveraged include building a system of QR codes or similar payment innovations to get easy access of digital cash for MSMEs. **Get governments to give cash transfers and tax credits digitally in bank accounts so that the ecosystem is created.** (Banerjee 2015) The technology of G2P (government to persons) payments could be used for this. This also reduces costs for the

governments. **Leveraging Aadhar and Jan Dhan to deliver these transfers of digital money.** However, this must be done carefully because Aadhar has error rates and many Jan Dhan accounts are inactive, so if the payments bounce, people will be deprived of social security payments. **Use the agent network to support for a few years so that there is a grievance redressal system in place.** This approach may not build strong internal consensus as it includes gaining buyin from multiple stakeholders.

Table 7. Evaluation of Approach 3 based on 3 criteria

Criteria	Rank	Notes
Operational Feasibility	Low	As noble as the idea of creating enabled environment through partnerships with other financial service providers, mobile operators, and the government is, it is also extremely hard to manage all the stakeholders and their competing interests. The operational feasibility of such an idea therefore will be low.
Financial Feasibility	Medium	The approach does not involve upfront high cost but the exploration and investment in enabling environment through technology is expensive and will demand significant resources from all stakeholders.

Financial Inclusion	High	This approach works toward building an enabling ecosystem, which is currently lacking and preventing the reach of affordable solutions to the most underserved MSMEs. This enabling environment will solve this critical challenge and bring all supply-side interventions to work in tandem with each other, thereby bringing financial inclusion.
---------------------	------	---

Final Recommendation

Short-term

In the short term, **it is most feasible to implement Approach 1** to increase the adoption and usage of digital financial services by underserved MSMEs.

1. Collect MSME digital maturity segmentation data to divide the MSME customers into 4 stages—nascent, experimenting, emerging, and enabled—and tailor digital financial products based on the needs of each segment.
2. Make small product innovations in the current offerings that cater to the needs of the underserved MSMEs of nascent and experimenting stages. These changes will incorporate the feedback that has been collected so far and also build a feedback loop to work on continuous improvements.
3. Improve training modules to induct those excluded from the current offerings into using the products, including creating comprehensive modules that include all steps of the digital transition process from buying the right phone to creating digital safety awareness to using the products to reiterating the process of usage through video content. Nurturing the field agents who deliver these lessons is key to implementing this step. Moreover, clustering training based on the digital maturity of the MSMEs will be more efficient and deliver better results. Expanding the training modules to include family members is also a step that can be explored.

Medium- to Long-term

In the medium- to long term, a more holistic approach to creating an enabling ecosystem through lasting partnerships is needed to achieve the mission of digital financial inclusion of MSMEs. Thus, an approach 3 should be implemented in the medium- to long-run for increased financial inclusion of MSMEs in India.

Appendix

Appendix A: Interview Questions Guide for MSMEs

The following are the guiding questions that I approached my qualitative interviews with the MSMEs with. These interviews were conducted in Hindi.

1. Confirm the type of entrepreneur/other demographic data that you have.
2. Confirmation of data: did you use the product?
3. Why did you/did you not use Sub-K Pay/JIT? (if not, elicit a very specific thing)
4. What did you like the most? The least? The most enjoyable?
5. What was the most challenging part? (This is high stakes) Was any part frustrating?
6. Walk me through the process of you using the product. Who helped you?
7. How was your experience in using Sub-K Pay/JIT?
8. What can Sub-K Pay/JIT do to get you to use the product?
9. What were the challenges?
 - a. Did you not trust the product? Have you faced a trust issue? What was it? Who did you reach out to for help to resolve it? Was it resolved?
 - b. Did you not have a smartphone/ know how to use a smartphone?
 - c. Was there no one to help you or assist you on how to use the product? What stage can the assistance be of most help? When can human touch or assistance give you comfort?
 - d. The way it was sold to you/introduced to you?
 - e. Did you take any help from anyone in using the product? What was the help?
10. Did you take anyone's advice for/against using the product? What was it? Who was it? Why did you trust it?
11. How would you rate the overall impact of the product?
12. Where has this impact been the highest?
 - a. Financial health
 - b. Business growth
 - c. Personal wellbeing

13. Is there any other product that you were using in this product's place? Why was that option better?
14. Would you recommend it to someone? Why or why not?

Appendix B: Interview Questions Guide for Financial Service Providers

1. What does a macro-enabling environment that helps or hampers the growth of serving small businesses constitute in your opinion?
2. Why did you develop this digital financial product?
 - a. Was the high-tech high-touch theme important?
 - b. What is the USP of the product?
3. How do you strike a balance between thinking about social value and returns?
4. What are the supply-side barriers that you experience during the full life-cycle of the product?
5. What is the strategy to reach out to vulnerable populations?
6. What is the strategy to decide the demographic of your customer?
7. What spillovers do you see because of the product?
8. Can you share some strategies that have helped you mitigate risk of these customers?
9. How important are people on the field interacting with the customers trained?
10. What do you see your strength to be?
11. What feedback have you received from the community?

Appendix C Detailed Digital Segmentation

The Nascent

Segment Attributes

1. S(he) has very low comfort and trust of digital for even simple use cases (communication, social media)
2. S(he) may have access to a device, but usage is shared among household members and privacy of personal information is a concern.

3. The perceived value of DFS is not well understood for her/him and linkages to business management are not clear.
4. S(he) faces many barriers to accessing technology (connection, cost)

Opportunities for design

1. Simple channels that build the trust and confidence needed to inspire more complex use cases
2. Build privacy and information security into the design to ensure household members aren't able to access information without permission.

The Experimenter

Segment Attributes

1. S(he) has moderate levels of technology usage, almost exclusively for communication and social media (e.g. communicating with friends and family on WhatsApp).
2. S(he) has some willingness to try new products and services but only when the value for her/him is clear.
3. Most transactions for her/him still happen face to face, but s(he) may engage in some simple transactions digitally (e.g. checking her balance).
4. S(he) faces some barriers in accessing technology

Opportunities for Design

1. Simple products that build off of design principles of products & channels she may already be using (e.g. SMS, WhatsApp)
2. Help her/him gradually build up confidence with more complex use cases by integrating human touchpoints at most critical moments
3. Understand household phone ownership dynamics to design around how and when she/he accesses digital devices

The Emerger

Segment Attributes

1. S(he) has high levels of usage of digital technology for various use cases (e.g. social media, communication, gaming, etc.)
2. S(he) is confident in using digital technology for simple financial use cases and may have experimented with more complex use cases (transfers, utility payments, etc.)
3. S(he) may be using one or more digital solutions to manage his business, or is interested in exploring digital solutions in the future.
4. S(he) sometimes faces barriers to accessing technology, but major pain points are limited

Opportunities for Design

1. Build engagement mechanisms into products to inspire continued usage
2. Better understand the tools s(he) uses to digitize his/her business today and identify opportunities to drive efficiencies through technology

The Enabled

Segment Attributes

1. S(he) has high usage and confidence across both nonfinancial and financial use cases, including complex transaction types
2. S(he) is using sophisticated digital tools for her business
3. S(he) is open to experimenting with different digital experiences across multiple channels
4. S(he) has limited barriers for accessing technology and high choice in providers and products

Opportunities for Design

1. Create customized digital experiences that drive loyalty
2. Given high availability of alternatives, create mechanisms to keep her/him engaged

Appendix D: Ethics and Transparency Statement

I implemented my research methodology in accordance with ethical standards. I conducted interviews virtually over Zoom with all the key informants. The interviewees did not incur any costs to participate in this research. I established and used a consent process for all my interviewees before each interview.

I informed them of the following:

1. The general scope of the project and objective of the interview
2. The types of questions I would ask during the interview and its approximate duration
3. The interview would remain confidential, and their names would not be public
4. They could choose to stop the interview at any point or decline to answer any question
5. I asked if they had any questions and responded accordingly
6. I asked for their verbal consent before proceeding with the interview
7. I asked for their verbal consent to take notes and explained how this information would be used

To protect the privacy and confidentiality of the interviewees in this report, I did not include their names and I aggregated the data collected from the interviews to maintain participants' confidentiality. The quotes I decided to use in this report do not contain any identifiable information and have not been directly attributed to any of the interviewees.

Sources of funding

The research was generously funded by the Women and Public Policy Program and the Ash Center at the Harvard Kennedy School. I did not receive any financial remuneration from my client.

Bibliography

- Accenture. 2021. "Shaping the Future of Post Digital India: Technologies and Trends That Catalyze Change." Accenture.
https://www.accenture.com/_acnmedia/PDF-130/Accenture-Innovation-Opportunities-PoV-v6-FA.pdf.
- Accion. 2021. Mastercard and Accion: Partnering for inclusive growth.
- Asian Development Bank. 2020. "Accelerating Financial Inclusion in South-East Asia with Digital Finance."
<https://think-asia.org/bitstream/handle/11540/7500/financial-inclusion-se-asia.pdf?sequence=1>.
- Banerjee, Shweta. 2015. "Can Digital Cash Transfers Enable Financial Inclusion in India?" CGAP. 2015.
<https://www.cgap.org/blog/can-digital-cash-transfers-enable-financial-inclusion-india>.
- Barry, Niamh. 2019. "Digital Finance and MSMEs—The Initial Story of How and When Digital Finance Works for MSMEs." *Partnership for Finance in a Digital Africa, Mastercard* (blog). 2019.
<https://www.financedigitalafrica.org/2019/10/25/digital-finance-and-msmes-the-initial-story-of-how-and-when-digital-finance-works-for-msmes/>.
- Baruah, Bipasha. 2007. "Gendered Realities: Exploring Property Ownership and Tenancy Relationships in Urban India." *ScienceDirect* 35 (12).
<https://doi.org/10.1016/j.worlddev.2007.02.003>.
- Behera, Minaketan, Sanghamitra Mishra, and Niharika Mohapatra. 2021. "COVID-19 Pandemic and Micro, Small and Medium Enterprises (MSMEs): Policy Response for Revival." *Sage Journals*. <https://doi.org/10.1177/09708464211037485>.
- Business Standard. 2019. "SME Landscape in India - Growth, Challenges and Opportunities." *Business Standard*, 2019.
https://www.business-standard.com/content/specials/sme-landscape-in-india-growth-challenges-and-opportunities-119062100357_1.html.

- CGAP. 2014. "Projecting Impact of Non-Traditional Data and Advanced Analytics on Delivery Costs." 2014.
- Consultative Group to Assist the Poor (CGAP). 2014. "G20 Global Partnership for Financial Inclusion (GPII) Issues Paper." In . Basel, Switzerland: 2nd GPII Conference on Standard-Setting Bodies and Financial Inclusion.
<https://www.cgap.org/research/publication/digital-financial-inclusion>.
- Daniel Gerzon, Mahler, Nishant Yonzan, Christopher Lanker, R. Andres Aguilar, and Haoyu Wu. 2021. "Updated Estimates of the Impact of COVID-19 on Global Poverty: Turning the Corner on the Pandemic in 2021?" World Bank Blogs. 2021.
<https://blogs.worldbank.org/opendata/updated-estimates-impact-covid-19-global-poverty-turning-corner-pandemic-2021#:~:text=We%20find%20that%20the%20pandemic,the%20course%20of%20the%20pandemic>.
- Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *Global Findex Database 2017 : Measuring Financial Inclusion and the Fintech Revolution*. Washington D.C.: World Bank.
<https://openknowledge.worldbank.org/handle/10986/29510>.
- Economic Times. 2021. "How Can Indian MSMEs Grow to Compete in the World?," 2021.
<https://economictimes.indiatimes.com/small-biz/sme-sector/how-can-indian-msmes-grow-to-compete-in-the-world/articleshow/84965039.cms>.
- Government of India. 2020. "Digital India Initiative, Government of India." 2020.
<https://www.digitalindia.gov.in/>.
- . 2021. "Annual Report 2020-21, Ministry of Micro, Small and Medium Enterprises, Government of India."
<https://msme.gov.in/sites/default/files/MSME-ANNUAL-REPORT-ENGLISH%202020-21.pdf>.
- Harihareswara, Nandini, and Howard Miller. 2021. "India May Not Have As Much Digital Financial Inclusion As It Seems." *Centre for Global Development* (blog). 2021.
<https://www.cgdev.org/blog/india-may-not-have-much-digital-financial-inclusion-it-seems>.

- International Finance Corporation. n.d. "Financial Inclusion for Woman-Owned Micro, Small & Medium Enterprises (MSMEs) in India." World Bank Group.
- International Trade Centre. 2020. "COVID-19: The Great Lockdown and Its Impact on Small Business." SME Competitiveness Outlook 2020. Geneva: International Trade Centre. <https://intracen.org/media/file/413>.
- Invest India. 2020a. "Assistance to Training Institutions (ATI) Scheme." 2020. <https://www.investindia.gov.in/schemes-msmes-india/assistance-training-institutions-ati-scheme>.
- . 2020b. "Schemes for MSMEs in India." 2020. <https://www.investindia.gov.in/schemes-msmes-india>.
- . 2021. "Harnessing India's Digital Economy: Private Sector Championing the Cause of Digitalisation." *Strategic Investment Research Unit* (blog). 2021. <https://www.investindia.gov.in/team-india-blogs/harnessing-indias-digital-economy-private-sector-championing-cause-digitalisation>.
- Lending Cart. n.d. "What Is MSME? Meaning, Full Form, Features, Role and Importance in India." <https://www.lendingkart.com/msme-loan/what-is-msme/>.
- Maheshkar, Chandan, and Neha Soni. 2022. "Problems Faced by Indian Micro, Small and Medium Enterprises (MSMEs)." *Sage Journals*. <https://doi.org/10.1177/09708464211064498>.
- Mckinsey Global Institute. 2019. "Digital India: Technology to Transform a Connected Nation." <https://www.mckinsey.com/~media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/digital%20india%20technology%20to%20transform%20a%20connected%20nation/digital-india-technology-to-transform-a-connected-nation-full-report.pdf>.
- Ministry of Micro, Small and Medium Enterprises. 2013. "Recommendations of the Inter-Ministerial Committee for Accelerating Manufacturing in Micro, Small & Medium Enterprises Sector." Delhi.
- Mobile for Development. 2016. "Mobile Financial Services and MSMEs: What Are the Benefits of Encouraging the Use of Mobile Financial Services among MSMEs?" *Mobile for Development* (blog). 2016.

- https://www.gsma.com/mobilefordevelopment/programme/mobile-money/mobile-financial-services-msmes-part-1/#_ftn2.
- Morse, Emma, and Vishal Ajmera. 2020. "The First Step to Help Small Businesses Go Digital during COVID-19." 2020.
<https://www.accion.org/the-first-step-to-help-small-businesses-go-digital-during-covid-19>.
- Mukharjee, Sonia. 2018. "Challenges to Indian Micro Small Scale and Medium Enterprises in the Era of Globalization." *Journal of Global Entrepreneurship Research*.
- Obi, James, Ayodotun StephenIbidunni, Atolagbe Tolulope, Maxwell AyodeleOlokundun, Augusta BosedeAmaihian, Taiye TairatBorishade, and Peter Fred. 2018. "Contribution of Small and Medium Enterprises to Economic Development: Evidence from a Transiting Economy." *ScienceDirect* 18. <https://doi.org/10.1016/j.dib.2018.03.126>.
- Ravi, Shamika. 2018. "Is India Ready to JAM?" Brookings. 2018.
<https://www.brookings.edu/research/is-india-ready-to-jam/>.
- Singh, Charan, and Kishinchand Poornima Wasdani. 2016. "Finance for Micro, Small, and Medium-Sized Enterprises in India: Sources and Challenges." ADBI Working Papers. Asian Development Bank.
- Singh, Sumanjeet. 2017. "The State of Gender Inequality in India." *Ramjas College, University of Delhi*. <https://doi.org/10.1515/genst-2017-0009>.
- World Bank. 2021. "Using Digital Solutions to Address Barriers to Female Entrepreneurship: A Toolkit." Washington DC: World Bank Group.
- . 2022. "Financial Inclusion." March 2022.
<https://www.worldbank.org/en/topic/financialinclusion/overview#1>.