

Increasing use of digital payment applications among vulnerable populations



Migrant workers in hostel in Bangalore
Photo: Nayantra Parikh

OVERVIEW

This brief describes the challenges faced by female migrant workers in using digital payment applications. It describes results from an experiment to study the effectiveness of training on increasing the use of digital payment applications by these workers, particularly for remittances.

The experiment tested the effectiveness of two types of training in improving usage of digital payment applications. We tested a classroom-based training and a more intensive individualized-training model. Results indicate that training is effective at addressing knowledge barriers, but only nominally increases the use of digital payment applications. Usage remains low because migrant workers are not able to meet certain infrastructure requirements (see “Results” on page 4).

To increase the use of digital payment applications, knowledge barriers as well as infrastructure requirements (such as access to smartphones, reliable internet connection, and phone number-bank account linkage) need to be addressed. It is also important to be mindful of the additional support vulnerable populations may need in fulfilling the requirements for conducting digital payments transactions. For detailed recommendations, refer to “Recommendations” on page 7.

CONTEXT

Digital payment platforms (i.e. using a phone to send or receive money)¹ can promote financial inclusion of poor and vulnerable populations in India. A plethora of digital payment platforms are available in India, such as mobile wallets, Unified Payments Interface (UPI) applications, and banking applications, all of which are free to use and allow money to be transferred instantly and securely to another bank account or mobile wallet. Increasing access and usage of these applications could promote greater financial inclusion, as seen in Kenya with the advent of M-Pesa.²



Particularly for migrants, a large and often vulnerable population in India, digital payment platforms can enable remittance of money quickly, safely, and for free. However, these applications remain under-utilized for internal remittances.³ This study explores the reasons for low take-up of digital payment applications, and generates evidence on the effectiveness of training for improving usage of these applications (both for general use and specifically for remittances).

This study focuses on women, a group that has so far not benefited much from digital payment technologies. In 2017, only 14 percent of females in India above the age of 15 reported making a digital payment in the past year, compared to 26 percent of males.⁴ We diagnosed barriers to using digital payments for remittances among this sample, designed and piloted a solution to address these barriers (a workplace training session on using digital payment applications), and conducted a randomized controlled trial that studied the effect of this intervention on use of digital payment applications, especially for remittances.

METHODOLOGY

We partnered with Shahi Exports, India's largest apparel manufacturer, to recruit female factory workers for our study. Most of these workers are rural migrants who have moved temporarily to the city to earn money. A large majority of our sample - 95 percent - came to Shahi to earn money for themselves and to support their families at home. Most workers remit money, and they send a substantial portion of their wages home. Very few workers use digital payments for remittance: instead, a large majority remits by cashing out their salary from their bank account and transferring the money through over-the-counter⁵ (OTC) agent/shopkeeper services. Table 1 presents summary statistics on remittance behaviour at baseline:

Table 1: Baseline summary statistics on remittance behaviour

Indicator at baseline	Value
Percent sending remittances	86%
Percent of wages remitted in the past month (among remitters)	58%
Percent using digital payments for remittance (among remitters)	5%
Percent using OTC transactions for remittance (among remitters)	91%

We developed training sessions on digital payment applications, and conducted a randomized controlled trial to understand the effectiveness of training on increasing the take-up of digital payment applications. We tested two different models of training to understand the intensity of support that was needed – a) a cheaper, classroom-based model, and b) a more intensive but costlier individualized-training model. During each training session, we collected data on participant success at different points in the process of sending money.

We randomly assigned the type of training session across 16 hostels attached to 7 Shahi Exports factories, with a final sample size of 618 (note that all workers in our sample had smartphones, which is necessary for using the digital payment application, BHIM). Each training session lasted one hour and covered the same content: information on digital payment applications and a guided walkthrough explaining how to sign up for the digital payment application and use it to send money. The trainings were practical – participants who successfully created UPI ids (i.e. signed up on the application) were given ₹50 and encouraged to practice sending money to others in the classroom.

ABOUT THE DIGITAL PAYMENTS TECHNOLOGY

In our study, we trained workers to use Unified Payments Interface (UPI) technology for making payments. UPI allows users to create a unique id (a UPI id) linked to their bank account, which, in turn, is linked to their mobile number. People can send money from one UPI id to another, and money is moved directly and immediately between bank accounts.

BHIM (Bharat Interface for Money) is a mobile application for smartphones that leverages UPI technology to allow people to send and receive money from their bank accounts. We used the BHIM application because it was offered in our sample's native languages and had a simple interface; however, we expect our results to be generalizable to any UPI application (such as Google Pay or PhonePe), since they offer similar functionalities.



The two training types were:



Classroom Training

In this training, 1 trainer and 1 assistant conducted a training session for a classroom of 20-30 participants.



Individualized Training

In this training, 4-6 trainers and assistants divided the classroom into groups and conducted the training. Each group had 5 participants per trainer. The content of the training was the same as the content in the classroom training, but trainers had more time to troubleshoot issues with each participant, given the lower trainer-to-participant ratio. Trainers were more involved in troubleshooting issues, taking participants' phones and resolving errors on a case-by-case basis, whereas trainers in the classroom training did not take participant's phones or solve issues individually.

Within two days of the training session, participants were sent an SMS message with a video reviewing the steps for using the digital payment application. We sent another reminder SMS to participants just before they received their next salary, including the link to the video and reminding them to use digital payment applications to remit money.



Ending of a shift at a Shahi factory in Bangalore
 Photo: Nayantra Parikh

FEATURE PHONE USERS AND DIGITAL PAYMENT APPLICATIONS

While *99#, a technology for sending digital payments over feature phones using USSD codes, exists in India, take-up has been low⁶. We piloted *99# with feature phone users. We learned that they found the interface difficult to follow. It took them more time to enter data for the transaction, resulting in transaction requests expiring before they could be completed. Additionally, *99# charges users a fee of up to ₹0.50 per transaction. For these reasons, we decided to conduct our study with smartphone users only.

RESULTS⁷

1. The use of digital payment applications is extremely low.

We define “digital payment applications” as “using your phone to send or receive money”, e.g. through mobile wallets, UPI, bank application, or internet banking. At baseline, only **6 percent** of the workers used digital payment applications for any purpose. 5 percent used digital payment applications for remittances, and 5 percent used digital payment applications for non-remittance purposes.

2. Lack of knowledge is the main barrier to using digital payment applications.

At baseline, **37 percent** of the workers did not know that they could send or receive money using their phones. Among those who did know about digital payment applications, **over 90 percent** were not able to use them due to lack of knowledge on how to download and use digital payment applications.⁸

3. Trainings increased usage of digital payment applications, but overall usage was still low.

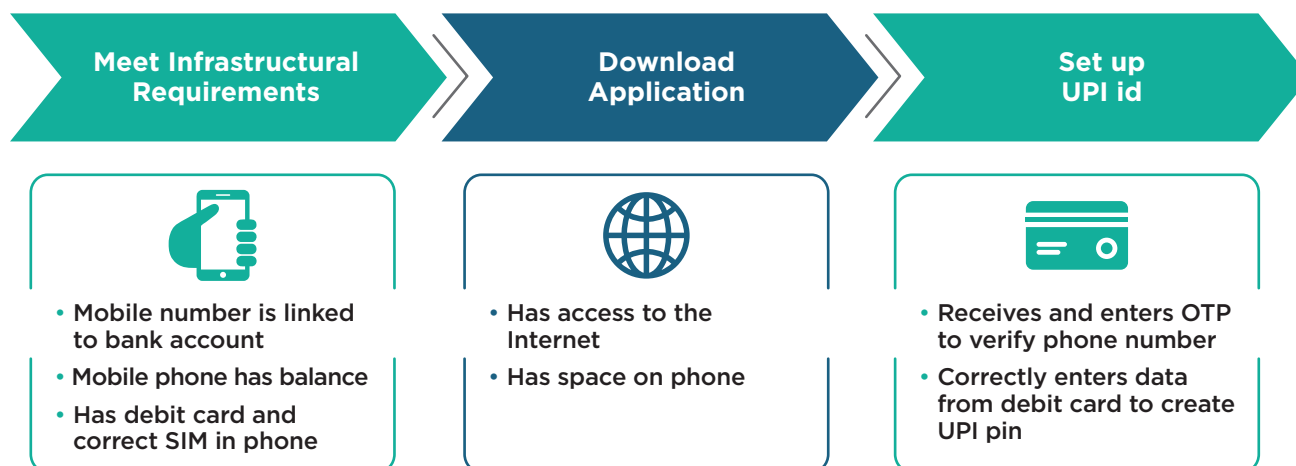
The classroom training increased use of digital payment applications by **5 percentage points** (from 6 percent to 11 percent), and the individualized training increased use by **10 percentage points** (from 6 percent to 16 percent).

We asked workers about two use cases of digital payment applications – for remittance (i.e. sending money home) and for non-remittance purposes (e.g. to purchase goods, make bill payments etc.). We find that the increase in use of digital payment applications is largely driven by use for remittance. At baseline, 5 percent of workers used their phones to send money home. While classroom training did not change use of digital payment applications for remittance,⁹ individualized training increased it by 7 percentage points: from 5 percent to 12 percent.

4. Usage of digital payment applications is still low after addressing the knowledge barrier,¹⁰ largely due to the infrastructure requirements for setting up and using UPI technology.

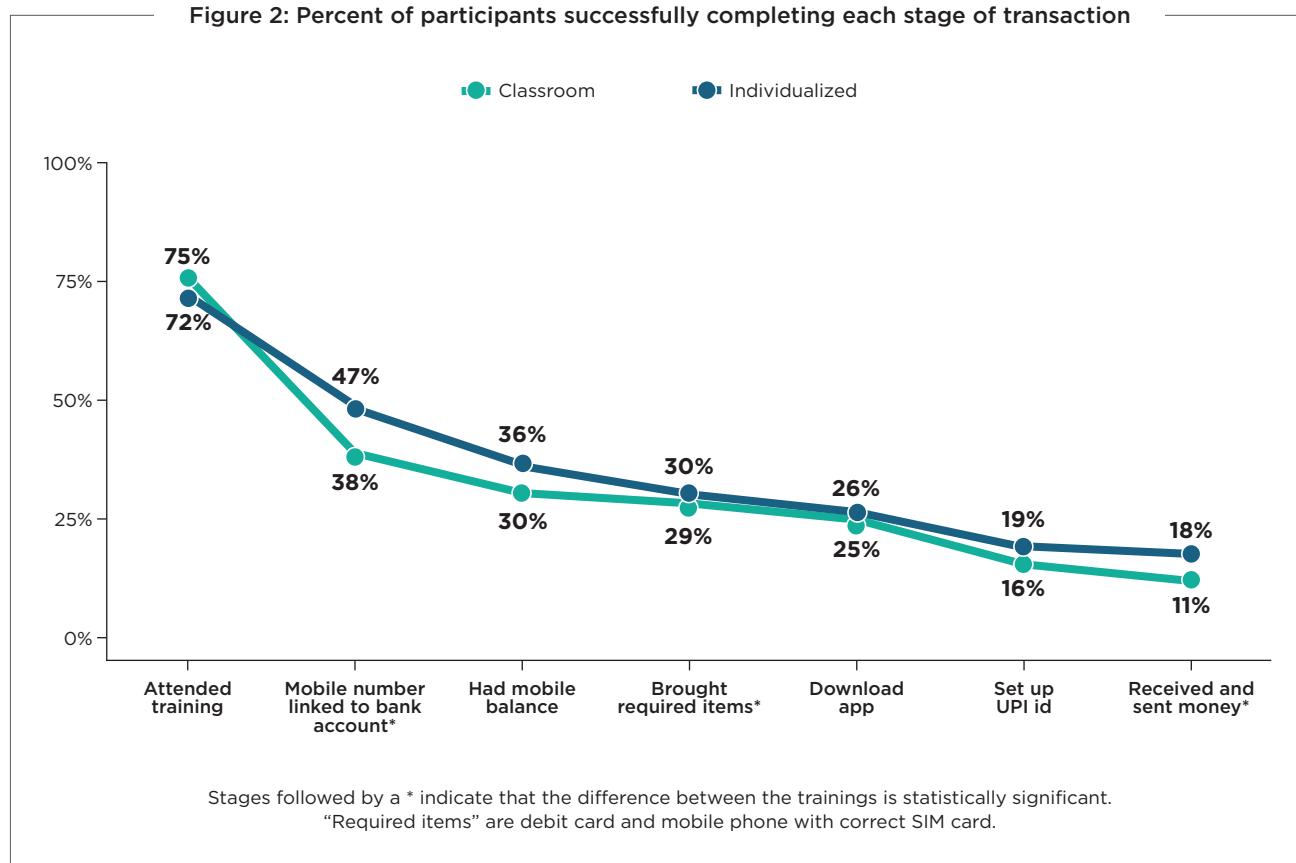
Figure 1 below shows the steps for setting up a UPI id, and the requirements for each step:

Figure 1: Steps and requirements for setting up a UPI id



Participants have to fulfil multiple infrastructural requirements and complete multiple steps to successfully send money. Figure 2 shows the proportion of training attendees from our study who completed each step:

Figure 2: Percent of participants successfully completing each stage of transaction





44 percent of the participants invited to the training could not set up a UPI id to send money because they did not meet the infrastructure requirements. Not having their phone number linked to their bank account is the largest driver behind why participants were not able to send money during the training – 31 percent of those invited to the training didn't have their mobile numbers linked to their bank accounts, which meant they could not set up a UPI id.

Bank account-phone number linkage is mandatory for account authentication and security. Workers do link phone numbers to their bank accounts when they open their account. However, at endline, 41 percent of respondents reported that their bank account was not linked to their current phone number: 31 percent said this was because they had given someone else's phone number when opening their bank account; 25 percent said they had linked another of their phone numbers that they had left at home; and 19 percent had changed their phone number.

5. Individualized training does not produce markedly improved results over classroom training.

Once infrastructure requirements are addressed, a well-designed classroom training for digital payment applications could be sufficient in most contexts, as it has comparable effect sizes and is more cost-effective compared to individualized training.

We found no statistically significant¹¹ differences between the effect of individualized and classroom training on use of digital payment applications. While workers in the individualized training session are more successful at sending money during the training, the differences at each stage of training are either very small or non-existent.

In spite of higher effect sizes from individualized training, the cost of these trainings is high,¹² which makes classroom trainings more cost-effective at increasing the number of people who use digital payment applications: in the individualized training, it costs ₹1206 per participant who used digital payment applications next month, whereas it cost ₹814 per participant in the classroom training.¹³

RECOMMENDATIONS

Digital payment applications are not easily accessible to all those who stand to benefit from them. In addition to knowledge barriers, infrastructure requirements can exclude parts of the population.

Some of this exclusion is systemic. For example, **gender-based differences** in access to infrastructure needed for using these applications results in fewer women being able to use them - in India only 38 percent of women own mobile phones, compared to 71 percent of men.¹⁴ Another excluded population is **feature phone users** (in 2019, only 44% of phone users in India had smartphones¹⁵) as there are few user-friendly digital payments solutions for feature phone users.



Workers headed to a Shahi factory in Bangalore
 Photo: Nayantara Parikh

The needs of these excluded subpopulations need to be identified and addressed. This is particularly important today as the expected expansion of usage of digital payments can exacerbate existing gaps and further exclude already marginalized populations.

More generally, many actors can play a role in improving take-up of digital payment applications.



Organizations who work with migrant workers

- **Communicate the utility of digital payment applications and the importance of linking phone numbers to bank accounts.** Migrants should be encouraged to maintain linkage even when they change their phone numbers.
- **Provide assistance to migrants on how to link their phone numbers or how to use digital payment applications.**



Organizations who provide financial literacy training

- **Support participants in meeting infrastructure requirements before the training session.** For example, organizations can conduct a camp before the training session where individuals can submit forms to link their phone numbers to their bank accounts, or send reminders to participants to bring all the items required for training.



Private sector organizations designing digital payment solutions

- **Design digital payment platforms that are easily accessible to feature phone users.**
- **Design platforms keeping the needs of poor and vulnerable customers in mind.** For instance, account for variations in language, differential access to technology, lack of technological familiarity, and digital literacy.



Banks

- **Encourage use of UPI among less active bank account holders.** UPI presents a user-friendly opportunity for account holders to use their bank accounts more frequently - encouraging inactive account holders to use UPI may result in higher uptake of UPI and more transactions in the formal financial sector.



Noorjahan Makrani (left) and Sangeeta Parmar (right) create handcrafted bags at the Self Employed Women's Association (SEWA) Artisan House in Ahmedabad

Photo: Paula Bronstein/Getty Images/Images of Empowerment

¹ The definition of digital payments usually covers all cash-free channels, including debit cards. However, in our study, we have used digital payments to cover only those methods in which a phone is used to send or receive money. This definition was explained to study participants during each survey and the intervention.

² Mbiti, Isaac & Weil, David. (2011). Mobile Banking: The Impact of M-Pesa in Kenya. 10.3386/w17129.

³ Per FINDEX 2017, only 7 percent of domestic remitters used a mobile phone to send money.

⁴ FINDEX 2017.

⁵ An over-the-counter transaction is one that is conducted by someone else (usually a shopkeeper or banking agent) on behalf of the customer.

Source: "Over the Counter (OTC) Money Transfer in India: The Remittance Silver Bullet for Migrants", by MicroSave Consulting.
<https://www.microsave.net/2016/02/19/over-the-counter-otc-money-transfer-in-india-the-remittance-silver-bullet-for-migrants/>

⁶ In April 2020, there were 0.07 million *99# transactions, for a total value of ₹11.45 crore. In contrast, there were 999.57 million UPI transactions, for a total value of ₹1,51,150.66 crore.

Source: Product statistics from National Payments Corporation of India.

⁷ All results are based on self-reported data.

⁸ At baseline, 63 percent of workers said they knew about sending and receiving money using a phone. Of these, 55 percent did not know how to use digital payment applications, and 38 percent did not know how to download digital payment applications.

From small-sample qualitative work before baseline, we know that some workers had tried to download digital payment applications themselves but were unable to go beyond mobile number verification. When they approached an OTC remittance agent for assistance, they were discouraged from trying it further and were told they were uneducated and incapable of handling something so advanced.

⁹ A more conservative analysis shows that classroom training increases use of digital payment applications for remittance by 4 percentage points.

¹⁰ 97 percent of workers who attended a training session said they thought it was beneficial to use digital payment applications. 88 percent of attendees thought the quality of the training session was good.

¹¹ We say a result is statistically significant when the probability of getting that result due to chance is 5 percent i.e. it is very unlikely we are seeing this result due to chance.

¹² Individualized training is more costly because they are conducted with smaller class sizes and more trainers: in our intervention, average class size for the classroom training was 26 participants, 1 trainer, and 1 assistant, while average class size for the individualized training was 17 participants and 4 trainers.

¹³ The cost per participant in the classroom training was ₹96 and the cost per participant in the individualized training was ₹211.

¹⁴ Barboni, Giorgia, et al. A Tough Call: Understanding barriers to and impacts of women's mobile phone adoption in India. Cambridge, MA: Evidence for Policy Design, Harvard Kennedy School, 2018.

¹⁵ As of December 2019, India had 1.1 billion mobile phone subscribers and 502.2 million smartphone users.

Sources: "Highlights of Telecom Subscription Data as on 31st December, 2019", Telecom Regulatory Authority of India, Press Release No.17/2020.
 "Smartphone Users in India Crossed 500 Million in 2019, States Report", CNN-News18, 30 January 2020.

All pictures were taken with consent.