

Key Points

- A 12-month randomized controlled trial in Bangladesh found that personalized support, through training, follow-up calls, and helplines, significantly increased digital financial service (DFS) adoption, confidence, and customer engagement among low-income microentrepreneurs.
- Despite higher adoption, transaction volumes and frequency remained low due to persistent barriers such as fees, connectivity issues, agent availability, and trust concerns.
- Behavioral factors such as confidence, perceived usefulness, and fear of fraud strongly shaped DFS use, demonstrating the need for interventions that address these specific constraints.
- As microentrepreneurs became more confident with DFS, they became advocates for DFS, helping customers and reinforcing wider community uptake of digital payments.
- Sustained digital financial inclusion requires integrated approaches that combine capacity building, consumer protection, supportive infrastructure, and behaviorally informed policy design.

Bridging the Digital Divide for Low-Income Entrepreneurs in Bangladesh

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Introduction

The rapid development and adoption of digital technologies have transformed economic and social landscapes across Asia and the Pacific. Fueled by the increasing affordability of mobile devices, expanding internet connectivity, and the growing reach of digital platforms, the region's digital economy was projected to reach 2.7 billion mobile internet users by 2025 (around 61% of the population) (GSMA 2020). Digital technologies now underpin diverse sectors including commerce, finance, education, and government, offering new opportunities for productivity and inclusion.

The COVID-19 pandemic accelerated this digital shift as lockdowns and mobility restrictions forced firms, governments, and households to move services online. This helped sustain economic activity and enable social support programs, underscoring the potential of digital technologies to strengthen resilience and drive recovery. However, this transformation has also magnified existing inequalities. Those without access, skills, or trust in digital systems face higher risk of being left behind, especially traditionally vulnerable groups such as women, young people, older people, rural households, and low-income populations. To ensure that digital transformation contributes to shared prosperity, policymakers must develop a better understanding of how individuals and enterprises at the base of the economic pyramid (BOEP) engage with digital technologies and design inclusive strategies that expand participation and reduce vulnerability.

This policy brief contributes new evidence from a yearlong randomized controlled field experiment to educate low-income microentrepreneurs in Bangladesh about using financial technology in their businesses and personal lives. The study's findings offer policymakers practical insights into which support strategies strengthen digital confidence, increase business use of financial technology, and help ensure that digital transformation delivers inclusive economic benefits. These insights are reflected in the policy recommendations this brief provides.

Background of Research

Digital inclusion refers to the capacity of individuals and businesses to access reliable, affordable digital technologies (including internet) and possess the necessary skills to use them effectively (Marshall 2023). For the BOEP, which includes individuals typically living on less than \$2.50 per day (Tavanti 2025), barriers such as inadequate infrastructure, high costs, and limited digital skills continue to restrict participation in the digital economy. These constraints hinder their access to critical services including health, finance, and education, reducing both individual welfare and the overall productivity of the digital ecosystem.

Recent evidence shows that rapid economic growth and poverty reduction across Asia and the Pacific have been accompanied by rising income and wealth inequality (Zhuang 2023). For example, the region's richest 10% consistently earn more than half of the total income (UNDP 2024), and structural disparities linked to gender, geography, and skill level continue to exclude women, rural populations, and lower-skilled workers from the gains of growth (ESCAP 2024). Moreover, government initiatives that prioritize digital transformation without inclusive safeguards may unintentionally widen these divides. To bridge this gap, comprehensive strategies are needed to expand connectivity, improve affordability, and build the digital capabilities of low-income users. Yet, progress remains constrained by limited data on how BOEP communities interact with technology, what motivates adoption or resistance, and how interventions can influence their financial behaviors.

This study responds to that gap by exploring the psychosocial-economic dimensions of digital engagement among the BOEP, specifically the emotions, aspirations, and motivations that shape digital adoption. The research focuses on digital financial services (DFS), a particularly powerful channel for inclusion, offering lower transaction costs and more accessible products and services.

Despite substantial progress in financial digitalization globally, evidence indicates that effective and sustained DFS use among the BOEP remains limited and less understood. For example, a study of six Southeast Asian economies found that digital literacy was the strongest predictor of DFS use, demonstrating that expanding access does not guarantee meaningful engagement

(TFGI 2022). Similarly, regional analysis finds that, while digital banking penetration may approach as much as 90% in some markets, the intensity and breadth of product use among low-income segments are less clear (ADB 2023). A recent systematic review of low- and middle-income countries further emphasizes that a complex mix of structural, knowledge, service quality, and sociopsychological factors shape DFS adoption among disadvantaged populations (Hunter et al. 2025). Understanding the behavioral and contextual factors that influence DFS adoption is therefore essential to designing policies and interventions that promote equitable and resilient digital economies.

The Citi Foundation funded this project,¹ which a research team from the Griffith Asia Institute, the Asian Development Bank Institute, and MicroSave Consulting led.

Research Method

This study was implemented as a randomized controlled trial (RCT) in Bangladesh over a 12-month period to understand how a targeted support mechanism could increase DFS adoption and effective use among individuals and microentrepreneurs at the BOEP. More specifically, the trial was designed to evaluate whether targeted interventions could enhance the uptake and use of DFS and mobile payment apps such as Nagad, bKash, and Upay among small entrepreneurs. The intervention aimed to strengthen participants' confidence and skills in using digital payments for both business transactions, such as receiving payments from customers or paying suppliers, and personal financial activities.

The RCT design combined three complementary data collection tools to assess how the intervention influenced DFS adoption and use:

- Baseline and endline surveys were conducted with all participants to measure changes in financial behavior over the study period. The endline survey captured shifts in DFS use patterns, perceived benefits and barriers, and participants' feedback on the support they received.
- Quarterly Unified Theory of Acceptance and Use of Technology (UTAUT) surveys, drawing on a modified Technology Acceptance Model framework, examined behavioral, perceptual,

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and motivational drivers across 23 constructs that influence technology adoption.

- Financial diaries were completed for 1 month each quarter, providing detailed information on day-to-day financial behaviors, covering business income, household spending, savings, deposits, and withdrawals.

We randomly selected a total sample of 230 low-income microentrepreneurs (115 each in the treatment group and the control group) following a comprehensive population census. The study was conducted in two *upazilas* (subdistricts) in the Munshiganj district of Bangladesh, with the control group in one *upazila* (Tongibari) and the treatment group in another (Lohajang), to avoid contamination. These *upazilas* represent semirural areas and were selected on the basis of their relatively high number of low-income households combined with the necessary infrastructure to enable DFS (i.e., access to internet, smartphones, etc.). The treatment group received an intensive support package that included face-to-face training, periodic follow-up calls, and SMS reminders, along with access to a dedicated helpline for on-demand assistance. The control group did not receive any intervention during the study period.

To construct the study sample, we conducted a census of shops and small businesses across the two selected *upazilas*, covering eight markets in each. These bazaars typically host between 80 and 250 permanently established enterprises. The census identified 2,475 businesses, from which we created a sampling frame using predefined eligibility criteria. Of the 810 entrepreneurs who met these criteria, we randomly selected 115 in each *upazila* to form the treatment and control groups. The following were the key selection criteria for study participants:

- Aged 18–60 years.
- Belong to a low-income household, defined as having a total monthly household income between \$60 and \$350.
- Own a smartphone with active internet access.
- Operate a small-scale retail business, with farmers and agricultural workers excluded.
- Have an active e-wallet installed on their phone.
- Are current users of digital payments for personal or business transactions, but infrequently (up to five digital transactions per week).
- Serve as the primary financial decision-maker of the business (i.e., the owner).

Data collection followed a structured schedule. The baseline survey, which we carried out in July–August 2024, captured demographic characteristics, financial profiles, and initial DFS behaviors. We administered UTAUT surveys and diary modules at baseline and then approximately 3, 6, and 9 months into the intervention to track evolving perceptions and use patterns. The study concluded with an endline survey round completed by 206 participants (103 treatment and 103 control) in September–October 2025, reflecting a sample attrition rate of around 10%.

Participant Profiles

The sociodemographic characteristics of the treatment and control groups were broadly comparable, demonstrating a well-balanced sample. All participants were male microentrepreneurs, as we located no eligible female-owned businesses during recruitment, highlighting the limited presence of women-owned enterprises in the semirural study area. The average age of participants was around 30 years across both groups, and education levels were also similar, averaging approximately 7 years of schooling. Monthly household income at baseline did not differ significantly between groups, with the treatment group reporting Tk24,185 and the control group Tk26,427.

Participants operated a variety of micro- and small enterprises, although retail businesses dominated in both *upazilas* (Table 1). The control group was heavily concentrated in retail (71%), with the remainder distributed across services, manufacturing, and wholesale. By contrast, the treatment group displayed a more diverse enterprise base; however, retail businesses still accounted for the largest share (54%), followed by a greater proportion engaged in services (22%), food services (11%), and small manufacturing (9%).

In terms of DFS use, baseline data from the first UTAUT survey revealed that, while all participants were already using DFS to some extent, usage remained relatively infrequent. Most participants used mobile payments primarily for transfers to family and friends or occasional business transactions, such as paying suppliers or receiving customer payments. Fewer than one in five participants used DFS weekly across multiple transaction types. The data also showed notable variation between groups even before the intervention. For example, treatment group participants were somewhat

Table 1: Participant Businesses by Sector (%)

What Sector Does Your Business Operate In?	Treatment (103)	Control (103)	Difference
Retail	54	71	-17**
Service provider (i.e., repair shop)	22	13	9*
Food services	11	3	8**
Manufacturing	9	5	4
Technology	3	2	1
Circular economy (i.e., recycling)	1	0	1
Livestock	1	0	1
Wholesale	0	7	-7***

Notes: The percentages reflect the share of participants operating their business in each category in treatment and control group. A statistical equality test was done with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Source: Authors.

more active users, especially in sending money and conducting business-related payments, while the control group relied more on infrequent or monthly transactions. Ultimately, participants began the study as occasional rather than habitual DFS users, reflecting an early stage of digital adoption.

Key Findings of the Randomized Controlled Trial

The RCT results demonstrate measurable changes in digital financial behavior among the intervention group, while also pointing to the structural and psychosocial-economic constraints that continue to limit sustained DFS use for many low-income users.

1. Increased DFS Adoption and Usage Among Small Entrepreneurs

Across the 12-month trial, e-wallet use increased for most transactional purposes in both groups. However, the treatment group demonstrated broader and more frequent engagement with DFS. By the project endline, treatment participants used e-wallets for a wider range of purposes (mean = 3.99) compared with the control group (mean = 3.52), reflecting a positive difference of +0.33 (Table 2), although the difference is not statistically significant.

The most notable intervention effect occurred for receiving customer payments through DFS, where usage rose by 18% in the treatment group, compared with no change in the control group. This highlights the intervention's value in helping microentrepreneurs integrate DFS into daily business operations.

We also observed a smaller but meaningful increase in receiving remittances, where treatment participants recorded an 11% increase while no improvement occurred in the control group. This suggests growing confidence in using DFS to receive funds from trusted individuals and institutions.

Other transactional categories showed increased usage in the treatment group, but these shifts were either matched by similar changes in the control group or did not produce significant differences.

The participant financial diaries, which captured actual transaction behaviors, reinforce the survey findings (Table 3). By endline, 93% of treatment participants reported using e-wallets for either business or personal transactions, up from 54% at baseline. Importantly, 60% used DFS for both business and personal purposes at least once a month, compared with 20% in the control group.

These changes indicate that the intervention not only increased DFS use frequency but also expanded the range of digital activities participants felt confident undertaking, suggesting meaningful progress toward deeper digital engagement.

Table 2: Changes in Digital Financial Service Use from Baseline to Endline (%)

For What Purpose(S) Do You Usually Use Your Mobile Money/E-Wallet Account?	Treatment			Control			Overall Difference
	Endline (103)	Baseline (103)	Difference	Endline (103)	Baseline (103)	Difference	
Receive payment from customers	84	66	18	67	68	1	18**
Transfer money to relatives/friends	90	59	31	81	52	29	2
Pay utilities and/or rent	48	18	30	41	12	29	1
Pay suppliers	43	24	19	42	18	24	-5
Mobile recharge	56	55	1	64	64	0	1
Receive remittances	18	7	11	7	7	0	11*
Repay loan	5	12	-7	3	12	-9	2
Receive a loan from a financial institution	2	1	1	2	0	2	-1
Deposit money into a savings account	2	1	1	1	0	1	0
Purchasing goods and services online or at physical stores	1	0	1	0	1	-1	2
Transportation payments	0	2	-2	0	0	0	-2
Usage of e-wallets for different purposes	3.99	2.52	1.47	3.52	2.38	1.14	0.33

Notes: The percentages represent the number of participants who responded “yes” to each category, alongside the difference-in-difference between the treatment and control group over time and the corresponding statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 3: Digital Financial Service Use from Participant Diaries (%)

Usage of the Wallet at Least Once a Month (For a Purpose)	Treatment			Control			Overall Difference
	Endline	Baseline	Difference	Endline	Baseline	Difference	
No use	7	46	-39	31	74	-43	4
Business only	28	28	0	43	15	28	-28***
Personal only	5	5	0	6	3	3	-3
Both business and personal	60	21	39	20	8	12	27***

Notes: Percentages represent the share of participants using e-wallets for different purposes in the treatment and control groups over time, based on daily diary transaction data. The table reports difference-in-difference estimates, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

2. Positive Shifts in Perception and Customer Engagement

Findings from the UTAUT surveys showed significant improvements in perceptions toward DFS among treatment group participants, particularly in areas related to customer interaction and service delivery (Table 4). Over the 12-month period, microentrepreneurs in the intervention group increasingly viewed their customers as more confident, satisfied, and comfortable using mobile payment services.

These shifts extended to the entrepreneurs’ own behavior. Treatment participants reported a stronger ability and willingness to assist customers with digital payments, indicating that the intervention not only strengthened

their personal confidence but also enhanced their role as facilitators of digital adoption within their communities. Several customer-facing measures, such as perceived ease of payment, customer satisfaction, and the belief that customers value digital payment options, showed statistically significant improvements compared with the control group.

Importantly, treatment participants also expressed higher satisfaction in receiving digital payments themselves and a greater sense of advocacy for DFS. By the study’s end, they were more likely than control group participants to promote, recommend, and guide customers in using mobile payment services, signaling a behavioral shift from passive users to active champions of DFS adoption.

Table 4: Perceptions Toward Digital Financial Services

UTAUT Questions Related to Customers	Treatment			Control			Overall Difference
	Wave 4	Wave 1	Difference	Wave 4	Wave 1	Difference	
I like it when my customer asks for a mobile payment service (MPS).	5.87	5.63	0.24	5.57	5.42	0.15	0.09
I help (can help) customers when they have difficulties using MPS.	5.76	5.06	0.70	5.37	5.26	0.11	0.59***
My customers find (would find) using MPS satisfying.	6.04	5.42	0.62	5.87	5.12	0.75	-0.13***
The use of MPS has become natural for my customers.	5.78	5.37	0.41	5.62	4.56	1.06	-0.65***
I would like to teach my business customers and suppliers how to use MPS.	5.67	5.16	0.51	5.04	4.87	0.17	0.34
My customers are (would be) able to pay more easily when they use MPS.	6.10	5.60	0.50	5.99	5.16	0.83	-0.33**
My customers are (would be) willing to try out new technology.	4.56	4.49	0.07	4.88	4.3	0.58	-0.51*
I believe my customers would value the option of paying through MPS.	5.86	5.17	0.69	5.57	5.11	0.46	0.23**
My customers are (would be) confident in using MPS.	5.41	4.70	0.71	4.34	4.32	0.02	0.69***
My customers think I should use MPS for my business.	5.92	5.4	0.52	5.19	4.49	0.70	-0.18
Do you feel confident in using digital payments with your customers?	6.15	5.21	0.94	5.84	5.34	0.50	0.44***
I use MPS to receive funds from customers.	3.29	3.08	0.21	3.33	2.79	0.54	-0.33

UTAUT = Unified Theory of Acceptance and Use of Technology.

Notes: Reported means reflect participants' ratings (on a 1–7 Likert scale) for UTAUT customer-related questions in Wave 1 (n=100) and Wave 4 (n=100). A mixed linear model was used to estimate changes over the four UTAUT rounds for individuals in the treatment and control groups. Statistical significance is denoted as *** p < 0.01, ** p < 0.05, and * p < 0.1.

Collectively, these findings suggest that targeted support mechanisms can improve not only the functional use of DFS but also the social dynamics surrounding digital payments. This could be viewed as an important factor in accelerating broader community-level adoption.

3. Modest Increase in Transaction Volume and Frequency

While the intervention led to higher adoption and a greater range of DFS use cases, it did not translate into a substantial increase in the volume or frequency of digital transactions. As Table 5 shows, the proportion of total transaction amounts conducted through e-wallets at endline remained similar between treatment and control groups across all categories. For example, the share of business income received via e-wallets was 7.1% among treatment participants, compared with 7.6% in the control group. This suggests that, although more

participants began using DFS, they continued to rely primarily on cash for higher-value transactions.

Findings from the UTAUT survey reinforce this pattern. As Table 6 shows, use behavior (measured by the frequency of DFS transactions across different purposes) did not differ significantly between treatment and control groups over time. Although there was some variation in mid-trial waves, these differences were not sustained. This indicates that the intervention successfully encouraged participants to adopt and experiment with DFS but that this did not yet lead to widespread or habitual digital transaction behavior.

Taken together, these results highlight that awareness and capability-building interventions can increase DFS adoption, but deeper and more frequent usage may require improvements in ecosystem-level factors, such as merchant acceptance infrastructure, lower transaction fees, stronger incentives for digital payments, and continued trust-building measures.

Table 5: Proportion of Total Transaction Amounts Made Through E-Wallets (%)

Proportion of the Total Amount Received in the E-Wallet	Treatment			Control			Overall Difference
	Endline	Baseline	Difference	Endline	Baseline	Difference	
Business income	7.1	6.1	1.0	7.6	3.2	4.4	-3.4
Personal income	33.7	17.2	16.5	36.9	14.7	22.2	-5.7
Business expense	9.6	7.3	2.3	8.2	5.0	3.2	-0.9
Personal expense	9.1	4.6	4.5	3.0	0.9	2.1	2.4

Notes: Percentages denote the share of total amounts received through e-wallets in each category, based on daily diary transaction data. The table reports difference-in-difference estimates for the treatment and control groups over time, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 6: Frequency of Digital Financial Service Transactions for Different Purposes

Use Behavior	Treatment	Control	Difference
Wave 1	3.13 (0.98)	3.01 (0.93)	0.11
Wave 2	3.08 (0.75)	2.66 (0.93)	0.42***
Wave 3	3.65 (1.00)	3.3 (0.86)	0.34**
Wave 4	3.32 (0.67)	3.23 (0.73)	0.07
Difference across waves	0.19*	0.22*	0.03

Notes: The table reports mean values (along with standard error in brackets) for use behavior indicators from the Unified Theory of Acceptance and Use of Technology (UTAUT) survey administered quarterly across four rounds (Wave 1 to Wave 4; $n=100$ in each wave). A mixed linear model estimates changes over time for individuals in the treatment and control groups. Statistical significance is denoted as *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

4. Role of Mobile Phones in Business Transactions

We asked participants at baseline and endline about the ways in which mobile phones support their business operations. Results showed a marked shift in the treatment group's perception of mobile phones as tools for financial management, particularly due to their growing use for digital transactions (Table 7).

By endline, 84% of treatment participants identified digital financial transactions as a key business benefit of using mobile phones, representing an increase

of 44% from baseline. In contrast, the control group recorded only a 10% increase. The overall difference of +34 percentage points between groups was statistically significant ($p < 0.01$), underscoring the intervention's impact in highlighting the business value of DFS.

Other perceived benefits, such as communicating with customers via calls or social media, remained relatively stable over time. However, the substantial shift in recognizing mobile phones as a channel for conducting business payments suggests that participants increasingly viewed mobile money not just as a personal financial tool but as an integral component of their business operations.

Table 7: Perceived Advantages of Using Mobile Phones for Business Activities

In What Ways Does Your Phone Help You With Your Business?	Treatment			Control			Overall Difference
	Endline (103)	Baseline (103)	Difference	Endline (103)	Baseline (103)	Difference	
Communicating with customers (via calls)	95%	94%	1%	94%	97%	-2%	3%
Digital financial transactions	84%	41%	43%	43%	34%	9%	34%***
Communicating with customers (via social media)	31%	39%	-8%	41%	33%	8%	-16%*
It does not play an important role with my business	0%	4%	-4%	2%	1%	1%	-3%*

Notes: Percentages reflect the share of participants responding "yes" in each category. The table reports difference-in-difference estimates for the treatment and control groups over time, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

These findings indicate that targeted training interventions have the potential to elevate mobile phones from general communication tools to business-enabling digital assets, strengthening the foundation for more advanced DFS use over time.

5. Perceived Usefulness and Effort Expectancy Reported by Respondents

Findings from the UTAUT survey provided deeper insights into how participants’ perceptions of DFS evolved over the study period (Table 8). Perceived usefulness increased significantly among treatment group participants, indicating that the intervention helped users better recognize mobile payments’ practical benefits. Although mobile payments were not widely viewed as saving substantial time or providing convenience in a general sense, treatment participants increasingly reported reduced stress, less reliance on intermediaries, and greater control over their financial transactions. These improvements were most evident in business-related activities, such as accepting customer payments and managing supplier transactions.

Similarly, effort expectancy and satisfaction improved more strongly in the treatment group than in the control group. These shifts suggest that users found digital payments progressively easier to navigate and more satisfying to use over time, especially when they integrated digital payments into their business operations. The combined increases in perceived usefulness, effort expectancy, and satisfaction demonstrate a positive alignment between user experience, perceived value, and actual usage behaviors.

Overall, the intervention not only increased DFS adoption but also strengthened users’ perceptions of its usefulness,

security, and ease of use. Microentrepreneurs in the treatment group increasingly saw DFS as a way to improve transaction efficiency, reduce cash-handling risks, and streamline day-to-day business operations. These perceptual shifts, which rising confidence and satisfaction supported, represent an important step toward more sustainable and resilient digital financial inclusion.

6. Barriers to Digital Financial Service Use Reported by Respondents

Despite increases in DFS adoption for business purposes, participants continued to face persistent barriers that limited their regular use. In the endline survey, we asked participants who used DFS for business to identify their top three barriers. Notably, 24% of treatment group participants reported no remaining barriers, compared with 16% in the control group, indicating some reduction in constraints following the intervention (Table 9).

Among those who still experienced difficulties, the most commonly cited barriers were trust and safety concerns, high transaction fees, low digital skills or confidence, and limited customer demand. These challenges appeared consistently across both groups. However, certain technical and accessibility issues such as poor network connectivity and limited agent or cash-out availability were significantly more common among control participants. This suggests that the intervention’s hands-on support helped participants navigate or mitigate some operational challenges.

When we asked participants to identify the single most important barrier (Table 10), responses again centered on trust and safety, low skills or confidence, and high transaction fees. Control group participants were more likely to cite technical issues and personal preference

Table 8: Perceived Usefulness, Effort Expectancy, and Satisfaction

UTAUT Constructs	Treatment					Control					Overall Difference
	Wave 4	Wave 3	Wave 2	Wave 1	Difference (4-1)	Wave 4	Wave 3	Wave 2	Wave 1	Difference (4-1)	
Perceived usefulness	5.84	6.13	5.49	5.29	0.55	5.69	5.51	5.33	5.24	0.45	0.10***
Effort expectancy	6.02	6.22	5.36	5.43	0.59	5.59	5.37	5.20	5.38	0.21	0.38***
Satisfaction	6.24	6.54	6.16	5.73	0.51	6.22	6.13	5.99	5.78	0.44	0.07***

UTAUT = Unified Theory of Acceptance and Use of Technology.

Notes: The table reports mean values for constructs from the UTAUT survey administered quarterly across four rounds (Wave 1 to Wave 4; n=100 in each wave). A mixed linear model estimates changes over time for individuals in the treatment and control groups. Statistical significance is denoted as *** p < 0.01, ** p < 0.05, and * p < 0.1.

Table 9: Top Barriers to Digital Financial Service Use (%)

What Barriers to Using Digital Payments Remain? (Pick up to 3)	Endline		
	Treatment (100)	Control (93)	Difference
Trust/safety concerns	60	53	7
Transaction fees are too high	49	38	11
Lack of digital skills/confidence	40	33	7
None	24	16	8
Low customer demand	17	16	1
Poor network/technical issues	11	37	-26***
Personal preference for cash	7	15	-8*
Agent/cash-out availability	0	7	-7***

Notes: Percentages reflect the share of participants who reported using digital financial services for business purposes in the endline survey (100 in treatment and 93 in control) and responded “yes” in each category. The table reports differences between the treatment and control groups, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 10: Most Prominent Barrier to Digital Financial Service Use (%)

What Is the Primary Barrier to Using Digital Payments?	Endline		
	Treatment (100)	Control (93)	Difference
Trust/safety concerns	33	22	11*
None	24	16	8
Lack of digital skills/confidence	18	18	0
Transaction fees are too high	17	15	2
Low customer demand	5	5	0
Poor network/technical issues	2	16	-14***
Personal preference for cash	1	7	-6**
Agent/Cash-out availability	0	1	-1

Notes: Percentages represent the share of participants who reported using digital financial services for business purposes in the endline survey (100 in treatment and 93 in control) and selected each barrier category in the treatment and control groups. A chi-square test was used to assess group differences, with statistical significance denoted as *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

for cash, reflecting lower comfort and confidence with digital transactions.

Further insight comes from the perceived severity and trust constructs in the UTAUT surveys (Table 11). Treatment participants reported a significant decline in perceived risk and severity, alongside an increase in trust in the safety and reliability of DFS. On the other hand, participants who identified trust and safety concerns as major barriers tended to have higher perceived risk and lower trust scores, highlighting the behavioral factors that continue to shape DFS engagement.

Information sources also played a mediating role. Participants who primarily relied on trained facilitators

for DFS-related information exhibited higher trust and lower perceived severity than those who relied on agents or informal networks. This underscores the importance of credible, consistent, and user-centered support channels in promoting sustained and confident DFS use over time.

7. Participant Satisfaction and Strengthened Capability Through the Intervention

Treatment participants reported high levels of engagement and satisfaction with the support the intervention provided. Among the 103 respondents, 97% received at least one in-person visit from a project facilitator to assist them with digital transactions, with

Table 11: Perceived Severity and Trust

UTAUT Constructs	Treatment					Control					Overall Difference
	Wave 4	Wave 3	Wave 2	Wave 1	Difference (4-1)	Wave 4	Wave 3	Wave 2	Wave 1	Difference (4-1)	
Perceived severity	1.96	1.87	2.53	2.81	-0.85	2.58	2.84	3.41	3.22	-0.64	-0.21**
Trust	5.64	5.73	5.37	5.15	0.49	5.40	5.27	5.10	5.04	0.36	0.13***

UTAUT = Unified Theory of Acceptance and Use of Technology.

Notes: The table reports mean values for constructs from the UTAUT survey administered quarterly across four rounds (Wave 1 to Wave 4; n=100 in each wave). A mixed linear model estimates changes over time for individuals in the treatment and control groups. Statistical significance is denoted as *** p < 0.01, ** p < 0.05, and * p < 0.1.

more than half (56%) receiving over three visits. Nearly all participants (93%) also confirmed that an open helpline was available whenever they needed assistance. Participants rated facilitator quality exceptionally well, with 98% describing facilitators as very responsive, while also rating the clarity of their explanations as good (75%) or excellent (23%).

Most treatment participants engaged with multiple support channels the intervention provided. Almost all (98%) reported receiving SMS messages on digital payments, and 82% received phone calls during the intervention period, demonstrating sustained touchpoints and ongoing reinforcement.

Participants viewed one-on-one training sessions as the most useful and impactful form of support. As a result of this direct engagement, 32% of participants reported starting to use digital payments, and another 67% reported increasing their frequency of DFS use. By the endline, 88% of treatment participants felt confident or very confident in independently using DFS, representing an important indicator of behavioral readiness for sustained digital engagement.

Findings from the UTAUT survey further reinforced these results, with participants reporting that the support

they received helped them build practical knowledge of mobile payment services. Many noted that the guidance facilitators provided enabled them to confidently use DFS independently and assist others, including customers. Participants also indicated that knowing help was always available when needed increased their trust in the intervention and their willingness to continue using DFS.

We also observed a significant rise in both self-efficacy and facilitating conditions among the treatment group over the course of the trial (Table 12). Self-efficacy, defined as participants' confidence in their ability to use DFS without assistance, increased sharply in the treatment group (+0.86), while remaining largely unchanged in the control group (-0.08). Facilitating conditions, which assess the perceived availability of resources, support, and infrastructure needed to use DFS effectively, also improved more in the treatment group (+0.53) than in the control group (+0.34). These statistically significant gains indicate that the intervention not only enhanced participants' skills but also strengthened their belief that the necessary support and systems were in place to enable successful and ongoing DFS use. These responses highlight the effectiveness of support models for DFS that are grounded in personalized assistance and reliable information channels.

Table 12: Facilitating Conditions and Self-Efficacy

UTAUT Constructs	Treatment					Control					Overall Difference
	Wave 4	Wave 3	Wave 2	Wave 1	Difference (4-1)	Wave 4	Wave 3	Wave 2	Wave 1	Difference (4-1)	
Facilitating conditions	6.05	6.15	5.72	5.52	0.53	5.65	5.44	5.50	5.31	0.34	0.19***
Self-efficacy	5.61	6.05	4.41	4.75	0.86	4.20	4.57	4.06	4.28	-0.08	0.94***

UTAUT = Unified Theory of Acceptance and Use of Technology.

Notes: The table reports mean values for constructs from the UTAUT survey administered quarterly across four rounds (Wave 1 to Wave 4; n=100 in each wave). A mixed linear model estimates changes over time for individuals in the treatment and control groups. Statistical significance is denoted as *** p < 0.01, ** p < 0.05, and * p < 0.1.

Policy Recommendations

The study showed that personalized interventions could increase users' confidence in, ability, and usage of DFS, which could spill over to their clients as well. However, various factors limited increases in DFS use, including trust and safety issues, cost, and infrastructure adequacy. These findings have shaped the policy recommendations in this section. The key point is that a broad-based approach is needed to both educate users about DFS advantages and reduce various structural barriers that inhibit its usage.

1. Institutionalize Digital Financial Literacy and Confidence-Building Support

The RCT shows that individualized training (i.e., through in-person visits, follow-up calls, and open helplines) significantly increased DFS adoption, confidence, and customer-facing competence among low-income entrepreneurs. This presents an opportunity for governments and development practitioners to integrate "DFS facilitators" (i.e., trained agents) into financial inclusion programs and prioritize semirural and underserved areas. To ensure long-term sustainability, governments could seek to embed the model into existing extension systems (i.e., training agriculture or small and medium-sized enterprise officers as DFS facilitators), use train-the-trainer approaches (i.e., incentivizing microentrepreneurs who have successfully adopted DFS to educate their peers), leverage public-private partnerships for cost sharing, gradually digitize government support functions, and integrate DFS capacity building into broader micro, small, and medium-sized enterprise and social protection programs. Scaling this model could accelerate first-time usage and build the trust required for sustained digital engagement.

2. Strengthen Trust, Safety, and Grievance-Redress Mechanisms in DFS Ecosystems

We found that trust and safety concerns were one of the top barriers to DFS use, even after adoption. To address this, policymakers should seek to establish or enhance consumer protection frameworks, including simplified fraud-reporting mechanisms, more visible recourse channels, digital financial literacy on scam avoidance, and the clear disclosure of fees relating to DFS. Regulators should also require DFS providers to communicate security features in simple language and formats to support BOEP users who may be less literate or tech-savvy than their average customer.

3. Reduce the Financial and Operational Frictions That Limit Habitual Use

To encourage more frequent and higher-value digital transactions, policymakers should focus on reducing the barriers that currently limit habitual DFS use. While we found the intervention successfully increased DFS adoption, the study also showed that transaction volumes and frequency remained low, largely due to high fees, connectivity issues, and limited access to agents or cash-out points. In response, governments can work with mobile and DFS providers and telecom operators to take specific steps aimed at addressing the BOEP's needs. These steps might include introducing more affordable, tiered pricing for small transactions; improving network reliability; or expanding agent networks in semirural areas through targeted incentives or public-private partnerships. Addressing these ecosystem-level constraints will be critical to shifting users from occasional to regular DFS use and to supporting meaningful digital financial inclusion.

4. Support Merchant-Side Digital Readiness to Stimulate Demand for DFS

Many of the study's microentrepreneur participants reported low customer demand as a barrier. The RCT demonstrated that when merchants feel confident with DFS they become advocates who actively guide customers, which can play an important role in strengthening community-wide adoption. By actively promoting merchant digitization programs, including incentives for microentrepreneurs to accept mobile payments, simplified onboarding procedures, and training on managing DFS transactions for business efficiency, policymakers can help establish a reinforcing cycle of both merchant and customer adoption.

5. Integrate Behavioral Insights into DFS Program Design

The study demonstrated that users' confidence, perceived risk, and trust strongly shaped their willingness to adopt and regularly use DFS. Considering this finding, policymakers should integrate behavioral and psychosocial insights into national financial inclusion strategies. For example, the RCT found that improvements in perceived usefulness, ease of use, and satisfaction emerged only when interventions directly addressed behavioral drivers such as fear of fraud, reliance on intermediaries, and uncertainty about digital

processes. Governments should therefore prioritize behaviorally informed approaches, such as simplified digital interfaces, timely reminders, and peer support models, within broader DFS initiatives. By embedding these principles into policy and program design, DFS can not only become more accessible but also more intuitive, trusted, and meaningfully used by low-income entrepreneurs.

Conclusion

This study's findings have demonstrated that targeted, personalized support can significantly increase DFS adoption, confidence, and customer engagement among low-income microentrepreneurs.

However, increases in adoption were not matched by similar gains in transaction volume or frequency,

underscoring the continued influence of structural barriers such as high fees, network reliability, agent access, and concerns around trust and safety. Behavioral constraints, such as low digital confidence and fear of fraud, also remain central determinants of DFS adoption and usage. Together, these findings highlight that digital financial inclusion cannot be advanced through access alone. Achieving meaningful digital financial inclusion requires integrated approaches that combine capacity building, consumer protection, infrastructure improvements, and behaviorally informed program design.

By adopting the policy measures that this brief outlines, governments, regulators, and development practitioners can create more enabling digital ecosystems that empower microentrepreneurs, strengthen community-wide uptake, and promote more inclusive and resilient digital economies across Asia and the Pacific.

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