Improving Information and Customer Service to Expand Mobile Money Access to the Poorest Government Payment Beneficiaries

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Abstract

Does information provision to beneficiaries and incentives given to financial intermediaries improve awareness and use of mobile money accounts? We present results from a field experiment conducted among recently digitized government-payment beneficiaries in Bangladesh. Using a randomized control trial, we measure the impact of three treatment arms: Beneficiaries are either provided information through posters, videos, and calendars, an agent award scheme is rolled out in the locality of beneficiaries, or the two approaches are combined. Six months after the intervention, we find detectable effects on outcomes related to awareness, knowledge, trust, and usage of mobile money accounts. This simple information campaign paired with non-monetary encouragement for mobile financial services (MFS) agents increased beneficiaries' trust in mobile accounts by 10 percentage points. The ability to perform transactions related to mobile money also increased (by 4 percentage points) but only among beneficiaries who received the information campaign. We also find large, positive, and significant effects on self-reported savings and remittances 6 months after the study. While we find detectable effects of the award scheme on awareness of mobile money accounts, we observe no change in behavior from running the award scheme on its own.

Keywords: financial inclusion, mobile money, awareness and knowledge

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1 Introduction

Globally, the last decade has seen significant increases in financial account ownership with an estimated 71% of adults in developing countries having an account at a formal institution such as banks, microfinance institutions, and mobile money providers (Demirgüç-Kunt et al. 2022). However, it is 'mobile money' that has driven growth in account ownership. Mobile money is considered a powerful tool by allowing users to interact with the financial market through deposits, payments, and withdrawals (Demirguc-Kunt et al. 2022; Breza et al. 2020) These digital accounts can be opened in any type of mobile phone (such as on feature phones and/or on smartphones) linked to a SIM card, secured and safeguarded through the use personal identification number (PIN) – eliminating the use of banks or bank accounts altogether.

Access to affordable and basic financial services can be beneficial for low-income, poor, and vulnerable households, that have traditionally had limited access to formal financial institutions. Mobile Financial Services (MFS), due to its low marginal costs and increased transparency, can counter both supply-side and demand-side constraints in accessing financial barriers for the poor and marginalized populations. MFS has the potential to remove supply-side barriers such as restricted competition among financial institutions, high transaction costs, and demand-side barriers for the financially unstable and poor who may lack proper documentation to open financial accounts, who have low trust in the system and who are bounded by geographical immobility (Pazarbasioglu et al. 2020).

In recent times, due in part to government-initiated financial inclusion drives during the Covid-19 pandemic, about 865 million adults opened an account to receive money from the government (Demirgüç-Kunt et al. 2022). While these initiatives can prompt beneficiaries to use more robust financial services, a lack of awareness and knowledge regarding these services can deter consistent and long-term benefits of account ownership and usage. It is important to understand the barriers to use of formal accounts for financial transactions and the types of interventions that can increase usage.

In this paper, we introduce and evaluate a simple, light-touch information intervention, along with a non-monetary award scheme, to address two key research questions: (1) Does information provision regarding mobile money accounts improve financial inclusion? and (2) Can incentives, given to financial intermediaries, improve customer services in the use of mobile money accounts? To answer these questions, using a randomized experiment, we measure the impact of three treatment arms: Beneficiaries are either provided information on mobile money through posters, videos, and calendars, an agent award scheme is rolled out in the locality of the beneficiaries, or the two approaches are combined. Payments received in digital accounts may facilitate the adoption of a wider range of financial services. Such digital accounts can help users retain these payments by postponing withdrawals and then making direct payments (person-to-person), within accounts, when required. This accumulated digital balance can then be used to store and save money, borrow, pay for other services such as bill payments (including utilities), airtime, and purchasing goods and services (person-to-business). Enabling financial independence is a critical step to financial inclusion and a driver to eradicate poverty.

The interventions designed served the following purposes. For the first treatment arm, the information campaigns were designed to reduce demand-side frictions. The information campaigns provided to the beneficiaries highlighted the basic and the most important features of a mobile money account. We call this treatment "T1". For the second treatment arm, we introduce an agent award scheme in our study zones. The agent award scheme was designed to reduce supply-side friction. We inform mobile money agents in our study zones about a nationwide competition on improving customer service. We call this treatment "T2". Finally, in the third treatment arm, we combine the information campaign and the agent award scheme as the third treatment arm. The idea is to understand whether there are differential gains by reducing both demand-side and supply-side market frictions. We call this treatment "T3". And lastly, we have a control group that did not receive any of the treatments.

Overall, we find compelling evidence not only of increased awareness, knowledge, trust, and usage but also of improvements in economic outcomes, such as increases in savings and remittances. Specifically, we find similar impacts on self-reported awareness regarding mobile money, in terms of magnitude, among beneficiaries who received the information campaigns and those who received both the information campaigns and the agent award. On average, the beneficiaries in these treatment arms see a 7-8 percentage point increase. Alongside, only when the two interventions are combined, we observe an increase in trust regarding mobile money among beneficiaries.

Having access to essential and relevant information on using mobile money services, beneficiaries were more inclined to maintain account balances and learn to perform basic transactions related to mobile money. This, however, did not change withdrawal behavior significantly to translate into using other additional features of a mobile money account, such as making deposits, bill payments, and earning interest on savings.

Our treatments also influence economic outcomes, including increases in savings. Specifically, we observe a sharp and significant increase in the likelihood of having any savings by 7 percentage points only among beneficiaries who received the information campaign. Additionally, beneficiaries in all three treatment arms are more likely to have formal savings compared to the control arm. On average, we observe an increase of about 3-5 percentage points, with the highest effect among beneficiaries who received the information campaigns only.

Arrays of literature, largely using randomized control trials, show a significant demand for mobile money among specific subgroups of the population in Bangladesh and other developing countries including for example, remittance-receiving rural households in Bangladesh (Lee et al. 2019), female MFI borrowers in Uganda (Riley 2020), female employees in RMG sector in Bangladesh (Breza et al.2019). However, there is limited evidence regarding the potential demand for mobile money among social protection beneficiaries who are likely to have fewer assets, less human capital, and more limited social networks compared to these

other populations.

These challenges motivate our study, to experimentally evaluate the impact of an information campaign and a non-monetary encouragement for MFS agents on awareness, knowledge, trust, and usage of mobile money among recently digitized G2P payment beneficiaries in Bangladesh. The results of this study will provide evidence about the state of awareness and usage of MFS accounts among low-income, vulnerable populations. Additionally, it will provide insight into the effectiveness of programs and outreach strategies that can be scaled to address awareness gaps for financial inclusion.

The rest of the paper is organized as follows. In the next section, we describe the context in which the study takes place. In Section 2 we discuss the relevant literature, while in Section 3 we describe the context in which the study takes place. In the subsequent sections, we provide details of the study sample, the experimental design, the data, the summary statistics and the empirical strategy. In Section 9, we report the results of our analysis, followed by a discussion of the findings and potential mechanisms, while Section 10 provides the conclusion.

2 Literature Review

Previous studies, largely using experimental designs, have documented the pronounced demand for MFS among specific subgroups of population in Sub-Saharan Africa (Jack and Suri, 2014) and Asia, including Bangladesh. Batista and Vincente (2017) evaluate the effects of a large-scale roll out mobile money in rural Mozambique (one of the poorest countries in Sub-Saharan Africa). While the focus of their study was to investigate how the adoption of mobile money, m-Kesh, and the subsequent transfer of remittances induced a channel of (informal) risk sharing between urban migrant and their rural family members, they also attribute the use of informational campaigns, on the use of m-Kesh and the role of m-Kesh agents, as a potential mechanism. Providing information and knowledge, via posters and

leaflets, at the individual level increased awareness of m-Kesh and m-Kesh agents by 0.2 to 0.26 SD. These effects were consistent, highly significant and robust over the study period of 2012-2014.

In a similar setting, with households residing in one of the poorest regions in Bangladesh (Gaibandha), Lee et al. (2020), find compelling evidence supporting the use of information to increase awareness and knowledge mobile money, such as bKash. To improve accessibility, the publicly available marketing materials from bKash were further simplified and translated into the local language. The encouragement design induced adoption and use of mobile money accounts whereby rural households in treatment arm were 48 percentage points more likely to use the accounts while, at endline, 70% of these households were active users of bKash. Interventions, on the lighter end, have aimed to improve clients' awareness regarding mobile money, resulting in an increase in demand for MFS. However, in the presence of market frictions, supply-side constraints such as low competition among MFS agents who are serving these inexperienced and under-served clients continue to persist, and adoption and active use of MFS may be limited.

Breza et al.(2020), study the effects of consumer learning among female garment workers in Bangladesh. Workers, receiving wages in mobile money accounts, were induced to engage with the accounts, learned how to avoid illicit fees being charged by MFS agents, and optimized the benefits of account ownership in cost-effective ways. However, there is limited evidence on how improving the information on MFS may increase the potential demand for MFS among social protection beneficiaries who are likely to have fewer assets, less human capital, and more limited social networks compared to these other populations. Our information campaign interventions are designed to measure the efficacy of providing information in changing the behavior of individuals and their use of MFS. Existing literature is focused, for the most part, on providing information regarding mobile money using publicly available advertisements on MFS (see, for example, Lee et al.. 2020; Breza et al. 2022, and Batista and Vincente 2017), while we study an intervention which is specifically designed

and tailored the needs and interests of the poorest G2P payment beneficiaries.

G2P payments disbursed via MFS impacts beneficiary mobility and convenience by allowing beneficiaries to cash out allowances from their nearest MFS agent points. As such MFS agents play a formative role in the adoption and use of MFS, by forming the first point of contact for withdrawals, deposits, and offering of advanced financial services. Beneficiaries are less likely to make further deposits and withdrawals into their accounts if they do not trust the local representative of the MFS brand. From the perspective of MFS agents, commercial viability in this industry is necessary for survival (Mas and Radcliffe, 2010).

In most cases, MFS agents are already operating independent businesses prior to signing on the role of an agent with an MFS provider and so the return on investment must be generous enough, at minimum, in motivating agents to re-invest in the float with which they can serve more clients. MFS agents are paid on a variable (commission) basis for every transaction they facilitate, which mainly are cash-in (deposits), cash-out (withdrawals), and client registration. MFS agents make money on every transaction, they have the flexibility to select which transactions they want to perform. As such, MFS agents may be motivated to prioritize the transactions that are more profitable (Davidson and Leishman, 2010) refusing services to clients with low-performing accounts and small-value transactions.

G2P beneficiaries are society's poorest citizens, with low levels of connectivity and ability to pay, and are the least likely populations to recognize the benefits of mobile money beyond its use as a money transfer method. Furthermore, the use of ancillary services, such as savings, bill/merchant payments, among the poor continues to remain, as such, in many instances, MFS agents are also reluctant to replace cash with mobile money for petty purchases (Davidson and Leishman, 2010).

3 Context

The Government of Bangladesh (GoB) operates more than 150 active social safety net programs (SSNP) -such as wages support, cash transfer, in-kind support and education scholarships – distributed by the various government ministries and divisions [1]. As of 2018-2019, SSN programs comprise of 13.81% of total government expenditures. Such SSNP were delivered primarily via cash to the beneficiaries. The inherent costs for the government, such as administration costs and the risk of leakage, related to direct cash transfers are significant. (Muralidharan et al., 2016). For the low-income and vulnerable population of beneficiaries, there also costs associated with direct cash transfers, such as time and money needed to travel to the point of collection (Aker et al. 2019; Field et al. 2022).

In light of such challenges related to direct cash transfers, in 2020-2021, the Ministry of Social Welfare (under the Dept. of Social Services) and in partnership with Aspire to innovate (a2i) digitized the disbursement of SNNP to 8.8 million beneficiaries across the country. The Department of Social Services (DSS) operates three types of SSNP: (a) Old Age Allowance (OAA), (b) Allowance for Widow, Deserted and Destitute Women (WAA) and (c) Disability Allowance (DAA). Under the digitized system of receiving G2P allowance, the primary way the beneficiary is informed about the arrival of the allowance is via an SMS on their registered phones and into the accounts of their chosen mobile money account (either bKash or NAGAD). While this new system has many benefits, there are concerns regarding beneficiaries' withdrawal experience, their awareness, and the usage of MFS accounts for broader financial inclusion.

The typical beneficiary, then, visits the MFS agent to withdraw the allowance. Without prior knowledge regarding the basics of mobile money and its services, transaction costs, and the role of MFS agents, the beneficiary is exposed to not only consumer protection risks but loses out on being financially included and limited in ability to save, repay debts and

[1] For more information on the roll-out of government safety net programs in Bangladesh, see https://www.thedailystar.net/round-tables/news/future-g2p-bangladesh-the-case-social-protection-system-1952557

manage risk responsibly.

To facilitate the adoption of digital G2P payments, the GoB built the payment infrastructure on an already well-developed, well-established and functional Mobile Financial Services (MFS) or mobile money network in the country. The GoB partnered with two leading MFS providers, Bkash, a subsidiary of BRAC Bank occupying 48% of market share and Nagad, operating under the Bangladesh Post Office, occupying 21% of market share. Users of bKash and Nagad benefit from a large and growing network of agents spanned across the country . The MFS industry in Bangladesh has grown significantly with 34% (Bilkis and Khan 2016) of Bangladeshi adults reporting using a mobile money account in 2016 compared to 7% in 2014 (Demirgüç-Kunt et al. 2018).

According to Bangladesh Bank, the number of registered users of mobile money grew by 203% between December 2015 and October 2020 (Hazra and Priyo, 2021) and 33% of adult women will be registered MFS users by December 2020 (Barooah et al. 2018). The GoB has also increased the integration of MFS in other sectors, whereby conditioning the introduction of MFS accounts for workers in the garments industry. This led to 800 garments manufacturing firms not only opening MFS accounts for their workers but also requiring payment of wages into these accounts

Apart from operational benefits, switching from cash to digitized G2P payments can help to promote affordable and greater financial inclusion among the poor and marginalized who have traditionally had limited access to formal financial services.

While the gap in financial inclusion has narrowed over the years, women, and the poor, are more likely to need support and assistance to productively use a mobile money account. In the context of usage of MFS by Bangladesh's poorest government payment beneficiaries, market frictions may arise due to a lack of information (among potential users about the range of MFS services available; or among MFS agents about the services that their clients would find useful), transaction costs (e.g fees related to each transaction, travel and waiting time to access MFS agents), market power (such as agents charging illicit fees because of

lack of competition), behavioral aspects (such as low levels of trust in MFS and MFS agents, experience and confidence) or social norms (such as prevailing norms preventing potential female clients from accessing services from male MFS agents. Hence, a pressing economic question is how to alleviate these market frictions[2].

4 Description of the Study Sample

The study was conducted across all 8 administrative divisions of Bangladesh: Barisal, Chittagong, Dhaka, Khulna, Rajshahi, Rangpur, Mymensingh, and Sylhet. The study population consists of the beneficiaries of Old Age Allowance (OAA), Disabled Allowance (DAA), and Widowed and Destitute Women Allowance (WAA) provided by the Department of Social Services (DSS) in Bangladesh localities where these transfers were being made directly into the beneficiaries' MFS accounts in the third quarter of 2021.

4.1 Sampling

To draw our sample, we first restricted the population of unions to those that met the following criteria: (i) at least 30 G2P beneficiaries in each of the following categories: DAA, OAA, OAA and WAA; (ii) at least 5 bKash agents located within the union; (iii) not located in the Chittagong Hill Tracts.

Next, we randomly selected 50 unions from those classified as urban or peri-urban, and 50 unions from those classified as rural. Within each union, we selected the first 30 responders to the survey request. The 30 responders comprise of 10 beneficiaries from each of the three types: DAA, OAA, and WAA, from a randomly ordered list of beneficiaries. Thus, we obtained a total sample size of 3000 (100 x 30 = 3000) beneficiaries for the study.

[2]See Scaling the Impact of Digital Financial Services: The Opportunity and Imperative during Covid-19. Mastercard Center for Inclusive Growth, September 2020

5 Experimental Design

Each of the sampled beneficiaries were randomly assigned to one of the four experimental arms (three treatment arms and control arms) according to a cluster randomization design, with 25 unions in each arm. We verified balance across the experimental arms using data on union-level population, literacy rate and electrification drawn from the 2011 Bangladesh Population Census Report[3]. We conducted all the randomization in STATA 17.

The outcomes of interest are measured at the beneficiary level and the randomization will take place at the cluster level, where a cluster is defined as a rural union (the smallest rural administrative and local government unit) or an urban ward (the smallest administrative unit in cities and towns). Figure 1 summarizes our experimental design, including the sample sizes in each arm.

5.1 Description of the Interventions

A combination of intervention methods are designed to increase beneficiary awareness regarding G2P payments and potential uptake of mobile money accounts. Given our cluster randomization design, each treatment arm comprises of 25 unions receiving the following interventions:

- **Intervention 1:** We designed posters that provided concise information regarding the use of money accounts, such as Cash-in/Cash-out, Send Money/Receive Money, MFS as a Saving Mechanism and PIN Remembrance/Safe-Keeping. We also designed a desk calendar to inform and aware G2P beneficiaries regarding the various services that are available to them via mobile money accounts. Each month of the year on the calendar corresponded to a service offered by their mobile money accounts, accommodating detailed instructions (using a step-by-step method) on how to perform these

[3]This was the latest document available, at the time of our study, that had union-level information for Bangladesh. The document can be accessed following this link

services/activities[4].

- **Intervention 2:** We circulated two short videos - Thematic Video and Functional Video- each under 2 minutes, to promote and encourage the use of mobile money accounts among our study population. Thematic Video was designed to focus on the benefits of using mobile money accounts, highlighting the basic features, such as receiving/sending remittances, but also the more advanced features such as making merchant payments and using mobile money accounts to save. The functional Video was designed to focus on addressing the various misconceptions about mobile money accounts and the role of mobile money agents and to build confidence and empowerment when using mobile money accounts. Through the Functional Video, we portrayed the services provided by the mobile money agents to remove information barriers that may lead to the charging of illicit fees and other ways of exploitation by agents.

- **Intervention 3:** We designed a non-monetary award to incentivise mobile money agents located in our study unions. Agents were provided instructions on the assessment criteria, such as measuring of customer satisfaction levels of users as and when they engage with the agents. In each rural union and urban union included in the study, the mobile money agent with the highest customer satisfaction rating received a crest titled, "Best Agent in Customer Service", that can be displayed in their shops.

[4]We ensured that the services we mentioned in the desk calendars were available for both bKash and NAGAD, so as to avoid encouragement of using one mobile money platform over the other

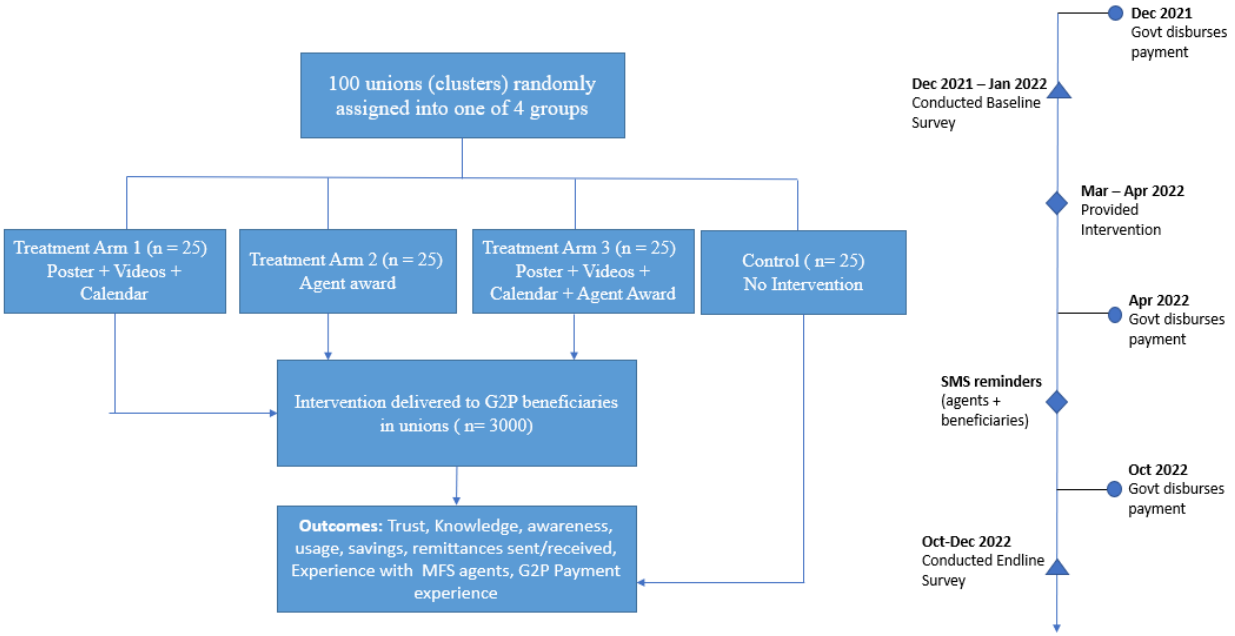

Figure 1: Timeline of the Intervention

6 Data

6.1 Data Collection

We utilize four sources of data. Firstly to draw our sample of study unions, we obtained administrative data from a2i that contained the number of beneficiaries (by gender), the type of allowance (Disability Allowance, Old Age Allowance, and Destitute and Widowed Allowance), the medium (either bank agent or MFS agent) via which they received the G2P allowance, segregated by all the Unions (by rural/urban), Upazilas, Districts and Divisions of Bangladesh. Secondly as per one of the sampling criteria to select unions with at least 5 MFS agents in the union, we extracted the number of agents in each Upazila from the 'Agent Locator' option on bKash's website . Thirdly, to select the beneficiaries in each union for the study, we obtained administrative data from the Department of Social Services (DSS). The administrative data contained contact information, including type of allowance received, location of the beneficiary and type of MFS network, on all the beneficiaries receiving the

G2P allowance across Bangladesh. We then matched the randomly selected unions with the beneficiaries in each union and selected 10 beneficiaries from each allowance type to be interviewed for the survey.

Finally, to collect the outcomes of interest for our study, we implemented a baseline survey and, an endline survey six months post the intervention period. The baseline survey, conducted via telephone, took place between January and February shortly after the DSS beneficiaries received their G2P payments in their mobile money account for the last quarter of 2021. We collected information on Household Demographics, Experience with G2P payments via Mobile Money Accounts, Remittances Received/Sent, Shocks and Coping Mechanisms, Savings, Knowledge and Understanding of MFS, and Experience with MFS agents. Upon completion of the baseline survey, we implemented the interventions in the treatment unions.

We collected information on mobile money agents, to be invited to participate in the agent award scheme, from two sources Firstly, during the baseline survey, we asked beneficiaries for information on MFS agents they visit regularly such as the name of the MFS agent, name of their shop, location of the shop or a landmark nearest to the shop, and if available, the contact number of the MFS agent. Secondly, we developed a pre-defined protocol for identifying the pool of MFS agents in each study union. The protocol was followed during the intervention period when the enumerators visited the beneficiaries' homes in treatment unions/wards to show the two videos and deliver the posters and the calendars. In this way, we created a database of 2622 mobile money agents who were eligible for the intervention.

For each union/ward included in the study, and within each beneficiary type, up to 40 beneficiaries were selected at random from the administrative list and assigned a 'rank' at random between 1 and 40. The survey team attempted to contact the first 10 beneficiaries of each type according to a pre-defined survey protocol and then attempted to contact beneficiaries further down the list according to their rank if the initial sample cannot be contacted (or do not satisfy other pre-defined criteria for inclusion in the study) till 10

beneficiaries of that type were interviewed. The surveys were administered via telephone calls to the beneficiaries, using the contact information available in the DSS database provided by a2i. Our pre-defined protocol contained instructions, such as the total number of calls to be made and criteria for closing a union, for the survey teams to follow when attempting to contact beneficiaries.

6.2 Attrition

Furthermore, we also anticipated potential attrition and non-response due to the use of remote surveys to reach our beneficiaries during the endline survey, such as lack of interest leading to refusals, network problems, or issues of trust. To recruit our study participants, the survey team contacted 6374 beneficiaries for the study to arrive at our final sample of 3075 beneficiaries. About a quarter of the non-response was due to phones being switched off and not receiving the call[5].

This is likely to persist and be a potential source of attrition for our sample of beneficiaries during the endline survey. One likely reason for this is that despite a beneficiary reporting that it is a personal phone, in such contexts, it is also a shared commodity that might be used by other household members.

We updated our protocol by extending on the Intensive Tracking Guide proposed by Özler and Cuevas, 2019. We updated the protocol, by including all days of the week than the official working days followed in Bangladesh, by dividing the day into four blocks, and by calling individuals every other day of the week. We were able to reach, following our revised protocol, 92% of our beneficiaries for the endline survey.

The attrition rate of approximately 8% is common among such populations, however, what is of concern is whether attrition is systematically different in the treatment and control arms. We present attrition rates across treatment/control arms in Table A4 in Appendix. The table shows that attrition rates were very similar across all four arms.

[5]Note that as per our pre-defined protocol for phone surveys, we had called the beneficiary 6 days a week (Monday-Friday), by dividing the day into three blocks of the day for three consecutive days

7 Summary Statistics and Balance Checks

7.1 Summary Statistics

Table 1 reports the summary statistics, using data from the baseline survey, for our sample of beneficiaries across 100 study zones. The typical beneficiary in our sample is about 57 years of age, living with at least 3 other members of the household. Less than one-fourth of the sample of beneficiaries can read and write and nearly two-thirds in the sample are females. Overall financial inclusion is significantly low, with only 7% of the beneficiaries reported to have ever had any savings. Similarly, only 10% of the beneficiaries received remittances and 2% of the beneficiaries sent remittances in the last 3 months. Given the popularity and high prevalence of mobile money markets in Bangladesh, there are pre-existing sources of information that is available to the public, such as posters on fee structures and adverts indicating agent points. To capture, at baseline, the level of awareness of MFS via such sources, we asked whether beneficiaries have heard or seen information about mobile money, digital money, or mobile money agent from a list of sources (such as through posters at MFS point, posters received at home or MFS posters seen elsewhere). At baseline, we find low levels of awareness among beneficiaries regarding mobile money through existing sources of information displayed by various MFS providers. Only about 15% of the beneficiaries are aware of MFS despite a significant portion (59%) of them visiting a mobile money agent within the same time frame. This is indicative that beneficiaries view their mobile money accounts as an intermediary step to claim and withdraw their money immediately. In the early days of the adoption of MFS in Bangladesh, much of the adverts and informational campaigns focused on positioning mobile money as a service to instantly transfer funds which can then be instantly withdrawn from a mobile money agent. Such placement of mobile money may limit consumer's adoption of other services, such as savings, bill/merchant payments, and send/deposit money, that are offered via mobile money. Consequently, this can increase dependency on mobile money agents for performing basic transactions that

consumers can perform themselves, thus eliminating the scope of being charged illicit fees. This is revealed in our data where less than 10% of the beneficiaries are able to perform a transaction related to mobile money without any assistance. We also find evidence of mobile money agents charging illicit fees. About 16% of the beneficiaries were charged a fee by the mobile money agent for withdrawal of their G2P allowance. To measure levels of trust in MFS, we asked beneficiaries whether they think it is wise to leave money in mobile money accounts. Despite high levels of trust (60%) in keeping money in mobile money accounts – less than 5% had any balance in their mobile money accounts. Similarly, just about 10% have either received or sent remittances via mobile money accounts, despite the technology's popularity in facilitating the low-cost transfer of remittances among poor and vulnerable rural households in Bangladesh (Lee et al. 2020). This is likely due to low levels of literacy and physical constraints faced by our beneficiary types that restrict their capacity to engage in financial transactions. Moreover, the adoption of mobile money is likely to be less among older populations who maybe be more accustomed to traditional methods of financial services or who may lack the confidence, and empowerment to operate such forms of technology (Demirgüç-Kunt et al. 2022).

Table 1: Baseline Summary Statistics

Variables	Mean	SD	Min	Max	Count
Panel A: Beneficiary Characteristics					
Beneficiary Age	57.03	18.82	18	110	3075
Beneficiary can read and write	0.24	0.42	0	1	3075
Beneficiary is a female	0.61	0.49	0	1	3075
Household Size	3.95	2.29	0	19	3075
Household experienced a shock, in past 3 months	0.39	0.49	0	1	3075
Panel B: Remittances Received/Sent and Savings					
Whether beneficiary received any remittances, in past 3 months	0.10	0.30	0	1	3075
Total Remittances Received (IHS)	0.83	2.57	0	13	3075
Whether beneficiary received remittances using mobile money account	0.07	0.26	0	1	3075
Whether beneficiary sent any remittances, in past 3 months	0.02	0.14	0	1	3075
Total Remittances Sent (IHS)	0.17	1.16	0	11	3075
Whether beneficiary sent remittances using mobile money account	0.02	0.13	0	1	3075
Whether beneficiary has any savings	0.07	0.25	0	1	3075
Total Savings (IHS)	0.66	2.47	0	13	3075
Panel C: Awareness, Trust in and Use of Mobile Financial Services					
Whether beneficiary is aware of Mobile Financial Services (all sources)	0.42	0.49	0	1	3075
Whether beneficiary is aware of Mobile Financial Services through existing sources in the past 3 months	0.15	0.35	0	1	3075
Whether beneficiary is aware of Mobile Financial Services through family and friends	0.31	0.46	0	1	3075
Whether beneficiary met an MFS agent in the past 3 months	0.59	0.49	0	1	3075
Whether beneficiary has balance in mobile money account	0.04	0.20	0	1	3075
Whether beneficiary thinks it is wise to leave money in the mobile money account	0.60	0.49	0	1	3075
Whether the beneficiary paid any fee to the agent to withdraw allowance	0.16	0.37	0	1	3075
Whether beneficiary spent his/her own allowance	0.91	0.28	0	1	3075
Whether beneficiary can perform at least one transaction related to MFS without assistance	0.09	0.73	0	1	3075

7.2 Balance Checks

We report the validity of randomization by performing a series of balance tests on a number of characteristics collected at baseline, the results of which are shown in Table A1.

In addition to a conventional t-test and an F-test of equality of means across the four groups for each characteristic, we also perform an F-test for joint orthogonality for each treatment group separately. This regresses our variables on each treatment indicator testing if the estimated coefficients for all the characteristics are jointly zero. This is shown in Table A2

Additionally, following Imbens and Rubin (2015), we report the normalized differences, which is measured by taking the difference in means of two groups, divided by the square root of the average of the sample variances of the two groups. This calculation provides a scale-invariant measure of differences between our control and treatment groups. The

balance tests in Table A3 demonstrate that the treatment and control groups are statistically indistinguishable on a number of observable characteristics. We detect slight imbalance on 4 baseline observable in Panel B (joint-orthogonality test), for which we cannot reject the null hypothesis at the 10% level. However, the normalized differences between the means of the four groups in Panel A are all weakly smaller in absolute terms than 0.30, hence, can be considered well-balanced according to this sample-size free way of investigating balance in covariates (Imbens 2015).

Notably, as mentioned in our Pre-Analysis Plan, as a robustness check we re-run our econometric specification using variables that we found to be imbalance as controls. We find that our results remain consistent.

8 Empirical Strategy

To measure the effects of the intervention, we estimate intent-to-treat (ITT) estimates using an Analysis of Covariance (ANCOVA) specification of the form:

$$Y_{ui,t+1} = \beta_0 + \beta_1 T_{1u} + \beta_2 T_{2u} + \beta_3 T_{3u} + \beta_4 \gamma_{iu,t} + X_{iu,t} + \epsilon_{iu,t+1} \tag{1}$$

Where: Y_{ui} is the outcome for individual i in union/ward u, T_{1u}, T_{2u}, and T_{3u} are treatment arm status in union/ward u, γ_{iu} is the baseline value of the outcome of interest (when measured at baseline, otherwise excluded), $X_{iu,t}$ is a vector of baseline controls, and $\epsilon_{iu,t+1}$ is the error term, clustered at the union/ward level.

Periods t and $t+1$ refer to the baseline and endline, respectively. The control variables included in the regression are strata dummies for urban or peri-urban and rural areas, age, gender, and literacy level of the beneficiary, household size, and allowance type (OAA, DAA, or WAA).

8.1 Main Outcomes of Interest

We use the survey questionnaire to construct a number of primary and secondary outcome variables. We have further segregated outcomes into families. For the primary outcomes, we have six families and for secondary outcomes, we have three families. Primary outcomes are those outcomes that the interventions would be expected to have an effect on whereas secondary outcomes are those that we have limited knowledge on how the intervention will affect them, and so would be interesting to capture mechanisms. For primary outcomes, in addition to constructing variables to measure economic outcomes such as Savings and Remittances, we also measure outcomes such as Consumer Learning, Trust, and Experience with using mobile money. The treatment arms may have effects on other characteristics of the beneficiaries and so, for the secondary outcomes, we create variables to measure Ease of Access to the Technology, Cost of Using the Technology, and Information and Knowledge Regarding the Technology. These outcomes should be considered exploratory whereby helping us understand additional mechanisms and their effects.

9 Results

9.1 Impact on Awareness of Mobile Money

In this section, we analyze treatment effects compared to the control group on outcomes related to awareness regarding mobile money. We capture awareness of MFS by asking respondents whether beneficiaries have heard of the terms "mobile money", "mobile money agent" and "digital money" in the last three months and the sources through which they have heard these terms.

We group these sources of information into three types, where the outcome of interest are binary variables that are equal to 1 and zero for all others when beneficiaries report that they have heard the terms "mobile money", "mobile money agent" and "digital money from

sources such as (1) friends and family, and (2) MFS posters received at home. We report the intent-to-treat estimates in Table 2

As seen in column (1) we find detectable effects on beneficiary awareness regarding mobile money from sources such as friends and family, but only when the agent award is rolled out (T2). Specifically, the agent award intervention increased beneficiary awareness regarding mobile money by about 8 percentage points relative to the control group.

In column (2), we observe that when information is catered specifically to the beneficiaries, such as the information campaigns (T1), awareness regarding mobile money increases by 8 percentage points (significant at 1% level) relative to the control group. We also find increases, by 7 percentage points (significant at 1% level), in awareness when beneficiaries are provided with a combination (T3) of informational campaigns and the agent-award scheme.

Additionally, as a fidelity check, we use administrative data revealing that posters, videos, and calendars reached 95% of the beneficiaries. This is reported in column (3).

9.2 Impact on Trust, Learning and Usage of Mobile Money

In this section, compared to the control group, we analyze the treatment effects on outcomes related to trust, learning and usage. An aspect of consumer learning is to understand if individuals can perform some of the basic transactions related to mobile money. Such as accessing the menu of their mobile money account, checking the balance in their mobile money account, or identifying whether mobile money transaction has been completed.

We present intent-to-treat estimates in Table 3. Column (1) measures trust among beneficiaries in using mobile money accounts. While we do not find a statistical effect of the interventions on trust, we find that a combination of the interventions (T3) is seen to increase trust by about 10 percentage points (significant at 5% level). This is an increase of 15.6% relative to the baseline mean. It should also be noted that rolling out the agent award on its own did not increase trust in mobile money accounts. Trust in mobile money accounts, rather, is seen to fall by 2.72 percentage points although it is statistically insignificant.

Table 2: Treatment Effects: Awareness regarding Mobile Money, Digital Money, and Mobile Money Agent

	(1)	(2)	(3)
	Beneficiary aware of MFS through friends and family	Beneficiary aware of MFS through Intervention Sources: posters received at home	Beneficiary received intervention: Admin Data
T1: Poster + Video + Calendar	0.00309	0.0818***	0.903***
	(0.0420)	(0.0193)	(0.0147)
T2: Agent Award	0.0769*	0.00308	0.00241
	(0.0405)	(0.00828)	(0.00188)
T3: Poster + Video + Calendar + Agent Award	0.0479	0.0690***	0.898***
	(0.0430)	(0.0234)	(0.0122)
R^2	0.021	0.035	0.820
Baseline Mean	.311	.008	.45
Observations	2833	2833	2833

Notes: The table reports intent-to-treat. All regressions are estimated with baseline controls and the baseline value of the outcome (where measured, but otherwise excluded). T1 is the treatment arm where beneficiaries were shown the two videos, given the posters and the desk calendars. T2 is the arm where the agent award intervention was rolled-out. T3 is the treatment arm where beneficiaries were shown the two videos, given the posters, desk calendars and the agent award was rolled-out. Baseline controls include age of the beneficiary, household size, female dummy, allowance type (DAA, OAA and WAA), rural/urban dummy, and is clustered at the union level. Robust standard errors in parentheses * $p < 0.10$ ** $p < 0.05$ *** $p < 0.0$

In column (2), we report whether the interventions encouraged beneficiaries to store money in their mobile money accounts, i.e. whether they held balances in their accounts. Beneficiaries in T1 are 3.2 percentage points more likely to keep money in their account. Although weakly significant, this translates to an increase of 78% relative to the baseline mean.

Column (3) captures an outcome related to beneficiary learning regarding mobile money. Our results show that the information campaigns (T1) increase the likelihood, by about 4 percentage points, of beneficiaries performing at least one basic transaction related to mobile money. To capture how learning is happening, in the absence of administrative data, we asked beneficiaries a series of questions on whether they have conducted a person-to-

person (such as send money) transaction and agent-to-person transaction (such as deposit). However, as reported in Table A5 in the Appendix, we do not find any statistically significant differences across treatment arms.

Finally, we capture the usage of mobile money accounts among beneficiaries by asking respondents whether they use these mobile money accounts for other purposes besides receiving their allowance. Column (4) shows that we do not find any detectable effect on the increased usage of mobile money services.

Table 3: Treatment Effects: Trust, Knowledge and Usage of Mobile Financial Services

	(1)	(2)	(3)	(4)	(5)
	Wise to Leave Money in MMO	Has Balance in MMO	Performs Transactions	Confirms Transaction	Uses MMO for Other Purpose
T1: Poster + Video + Calendar	0.0392	0.0317*	0.0355*	0.0215	0.0106
	(0.0435)	(0.0164)	(0.0207)	(0.0472)	(0.0238)
T2: Agent Award	-0.0272	0.00215	0.00397	-0.0147	0.0173
	(0.0396)	(0.0141)	(0.0201)	(0.0517)	(0.0220)
T3: Poster + Video + Calendar + Agent Award	0.0960**	0.0208	0.0177	0.0640	0.00767
	(0.0410)	(0.0146)	(0.0211)	(0.0447)	(0.0228)
R^2	0.025	0.087	0.151	0.025	0.059
Baseline Mean	.607	.041	.097	.535	.104
Observations	2833	2833	2833	2833	2833

Notes: The table reports intent-to-treat. All regressions are estimated with baseline controls and the baseline value of the outcome (where measured, but otherwise excluded). T1 is the treatment arm where beneficiaries were shown the two videos, given the posters and the desk calendars. T2 is the arm where the agent award intervention was rolled-out. T3 is the treatment arm where beneficiaries were shown the two videos, given the posters, desk calendars and the agent award was rolled-out. Baseline controls include age of the beneficiary, household size, female dummy, allowance type (DAA, OAA and WAA), rural/urban dummy, and is clustered at the union level. Robust standard errors in parentheses * $p < 0.10$ ** $p < 0.05$ *** $p < 0.0$

9.3 Impact on Remittances Received, Sent and Savings

In this section, we examine the impact of the interventions on economic outcomes such as remittances received, sent, and savings. These results are reported in Table 4. As revealed in the baseline statistics, we find very low demand for remittance transfer services - only 10% of the study population received remittances, from all sources, at baseline.

As reported in column (1) we present the results on the inflow of remittances, at the extensive margin. The point estimates are negative, although statistically insignificant. In column (2), we present the results on whether beneficiaries sent any remittances, at the extensive margin. The information campaigns (T1) and a combination of the information

campaign and the agent award scheme, increase the likelihood of sending remittances by about 2 percentage points, respectively. Although the point estimates are weakly significant and of small economical magnitude.

In column (4), the results show that the information campaigns (T1) had a strong positive effect on the extensive margin of savings. Specifically, the intervention increased the share of beneficiaries who reported having any savings by about 7 percentage points (significant at the 1% level). The results in column (5), also reveal that the information campaign (T1) had a large effect on the intensive margin of savings. Beneficiaries are seen to increase their savings by 64 log points (significant at 5% level).

To evaluate the effects of whether the intervention affected beneficiaries' behaviour in using mobile money accounts to save money. As reported in column (6), we see no effect of the treatments on savings via mobile money.

In columns (7) and (8), we turn to the impact of the treatments on the share of formal and informal sources of savings. We find that the interventions increase the share of savings that beneficiaries keep in formal sources. These effects are large, relative to the baseline mean, and are highly significant. Specifically, the information campaign (T1) and the agent award scheme (T2) increase the likelihood of formal savings by 4 percentage points. This is an increase of 80% relative to the baseline mean.

Table 4: Treatment Effects: Remittances Received/Sent, and Savings

	(1)	(2)	(3)	(4)	(5)	(6)
	Received Any Remittances	Sent Any Remittances	IHS Remittances Sent Amount	Has Any Savings	Saves in MMO	Saves in Formal Sources
T1: Poster + Video + Calendar	-0.0173	0.0158*	0.141*	0.0697***	-0.00702	0.0454***
	(0.0203)	(0.00888)	(0.0715)	(0.0259)	(0.00559)	(0.0155)
T2: Agent Award	-0.000127	0.00685	0.0658	0.0264	0.000149	0.0427***
	(0.0238)	(0.00814)	(0.0668)	(0.0225)	(0.00633)	(0.0137)
T3: Poster + Video + Calendar + Agent Award	-0.0237	0.0134*	0.104*	0.000935	0.000168	0.0280*
	(0.0193)	(0.00745)	(0.0599)	(0.0236)	(0.00647)	(0.0160)
R^2	0.032	0.032	0.032	0.037	0.015	0.064
Baseline Mean	.098	.021	.166	.072	.003	.049
Observations	2833	2833	2833	2833	2833	2833

Notes: The table reports intent-to-treat. All regressions are estimated with baseline controls and the baseline value of the outcome (where measured, but otherwise excluded). T1 is the treatment arm where beneficiaries were shown the two videos, given the posters and the desk calendars. T2 is the arm where the agent award intervention was rolled-out. T3 is the treatment arm where beneficiaries were shown the two videos, given the posters, desk calendars and the agent award was rolled-out. Baseline controls include age of the beneficiary, household size, female dummy, allowance type (DAA, OAA and WAA), rural/urban dummy, and is clustered at the union level. Robust standard errors in parentheses * $p < 0.10$ ** $p < 0.05$ *** $p < 0.0$

10 Discussion of Results and Potential Mechanisms

The information campaigns were designed to improve awareness and knowledge regarding mobile money. It is likely that there are posters advertising the services of MFS providers and agents that are already in circulation in the study areas. However, the existing advertising may not be tailored to the needs and interests of the poorest G2P payment beneficiaries. The intervention materials could have enabled information to reach homes and potential clients who may not otherwise visit the MFS agent points (for example, women and the physically disabled). Moreover, this provision of information on mobile money can be stored and accessed later when beneficiaries engage with mobile money. Thus, this can facilitate awareness, knowledge, and usage of mobile money.

As presented in Table 2, we find that about 1 in 10 of the beneficiaries report receiving the intervention materials, despite delivering these to 95% of the sample. We anticipate that this is simply due to beneficiaries not being able to recall whether and/or when they received these materials. These results remain robust and consistent when estimated excluding the baseline controls.

Additionally, we hypothesized that the provision of tailored information regarding mobile money is likely to increase engagement among beneficiaries. As beneficiaries learn about the different services offered by a mobile money account, they may begin to perform these transactions based on information the intervention materials.

We also anticipated, ex-ante, that the agent intervention would help to increase trust regarding mobile money accounts and mobile money agents among the beneficiaries. This is because when we provided information about the award scheme to the MFS agents, we mentioned the charging of correct transaction fees to all customers as a best practice for attaining good customer service.

Anecdotal and empirical evidence (Breza et al. 2020) shows that when users are ill-informed about the basics of using a mobile money account, it allows scope of over-the-counter (OTC) transactions [6]. OTC transactions are costly as they are contracted by financial intermediaries, such as these MFS agents, in return for illicit fees. This can deter trust, learning and usage.

Trust in the mobile money accounts is high at baseline whilst usage is very low. The observation that beneficiaries are not using their account is not surprising and is likely due to factors such as lack of confidence, lack of familiarity with the technology, lack of digital literacy to engage with the technology, or lack of trust in mobile money agents. And so, it is important to understand whether information campaigns or improving pro-social motivation of financial intermediaries, or a combination of both can channel consumer learning and

[6]Individuals with personal accounts can visit an agent to cash-in money in their wallets and can then proceed to perform the transaction on their handset. This is a person-to-person transaction. However, an OTC transaction is conducted when the agent performs this transaction

usage.

We explore these outcomes in Table 3. The result in column (1) show that the information treatment (T1) and the agent award treatment (T2) does not affect trust, however, a combination of the two treatments (T3) increases trust by 9.6 percentage points (significant at the 5% level). This is an increase of 15.6% relative to the control and baseline mean. Our results are similar to those found by Breza et al. (2020). The study finds that access to a simple mobile money account, among garment workers in Bangladesh, increases trust in mobile money by 8.2 percentage points (significant at the 5% level), relative to a control mean of 22%. These effects were twice as large (significant at the 5%) among workers receiving their wages in mobile money accounts. They interpret these findings as a result of increased active engagement with the technology. Workers are compelled to use these accounts more frequently as they receive their monthly wages, send money to families as remittances, and cash out regularly to pay for everyday expenditures.

We attribute our findings to the fact that G2P beneficiaries benefit from tailored information. Furthermore, trust in mobile money accounts might have also increased due to reliance on and trust in mobile money agents who offered good customer service. It should be noted that pro-social motivation, induced by the agent award, alone is not sufficient to drive trust among beneficiaries.

Higher trust in mobile money accounts may induce beneficiaries to keep higher balances in these accounts. We find that beneficiaries in T1 not only keep higher balances but are also seen to perform transactions related to mobile money accounts. Our interpretation of this result is that the posters and calendars assisted beneficiaries in learning how to perform the basic transactions related to mobile money. And, the videos instilled confidence and empowered the beneficiaries to engage with the technology.

To capture how consumers are learning in the absence of administrative data, we asked beneficiaries a series of questions related to mobile money transactions. We investigate two types of transactions, whether the beneficiary has conducted a person-to-person (such

as send money) transaction and whether the beneficiary has conducted an agent-to-person transaction (such as a deposit). However, as reported in Table A5 in the Appendix, we do not find any effect of the intervention across treatment arms.

We anticipate that the interventions will encourage G2P beneficiaries to use other mobile money services, beyond just cashing out. Beneficiaries receive the G2P payments on a quarterly basis on their mobile money accounts allowing them the option to withdraw their transfers at a later time or in smaller amounts. The posters, videos, and calendars informed the beneficiaries of the various services offered by mobile money wallets, such as mobile top-ups, storing money (by maintaining a regular balance) to earn interest, and payment of utility bills. This could have enabled the beneficiaries to be better informed about the many uses and benefits of having a mobile money account. However, as revealed in the data, over 90% (at endline) withdraw their entire amount of transfer at one time.

This could, firstly, be due to the fact that since the government reimburses the beneficiaries the entire cost of withdrawal, they know that they would have to pay additional cash-out fees for subsequent withdrawals. Secondly, it might just be that G2P beneficiaries are simply too poor and disconnected due to mobility and economic constraints to benefit from such technological innovation. This is revealed in our data, where almost 98% of the beneficiaries, at endline, reported to have withdrawn all their payments in a single transaction as they needed the money immediately.

The potential impact of the treatments on remittances, a priori, is unclear. Remittances are crucial for transferring resources and insurance to support family networks. The scope of sending money across vast distances and to the most remote regions of Bangladesh has been possible largely due to the innovation of mobile money. Lee et al. (2020) and Breza et al. (2020) find evidence of high demand for remittance services among their study population. Specifically, the average migrant is seen to remit 31.7% and 22% of monthly income, respectively.

As revealed in the baseline statistics, we find very low demand for remittances transfer

services - at baseline only 10% of the sample received remittances, from all sources. As reported in Table 4, we do not find any detectable effect on the inflow of remittances, at the extensive margin. It is worth noting that our results contrast with those found in Lee et al. (2020) where they find that providing a mobile money account to both the senders and receivers of remittances results in large and significant increases in remittances. These results are driven largely due to reductions in the cost of sending the remittances through mobile money accounts and the scope of the receiver of remittance to exercise control over the wages of the sender/migrant (Breza et al. 2020).

Alternatively, our results indicate that the characteristics of the G2P beneficiaries may restrict their ability to navigate the functions of a mobile money account. This limitation persists even in the presence of interventions that can promote usage and learning[7].

Secondly, our data reveals that beneficiaries have high bargaining power over the use of G2P payments (almost 90%, at the endline, have control over the spending of the payments). This may indicate that while beneficiaries did not receive remittances, it might be that other members of the household, who are younger or well-versed with the technology, may be in charge of receiving these remittances from the migrant. Our results corroborate with other studies that have found no overall impact on remittances received in the presence of mobile money (Breza et al., 2020; Aker et al.,2016; Weiser et al., 2019).

The recent literature around mobile money on the impact of account ownership confirms that access to a mobile money account and direct deposits such as these government payments that allow for engagement with the commitment device help stimulate new savings (Breza et al., 2020; Lee et al., 2020; Field et al., 2022).

One mechanism through which gaining awareness and knowledge regarding mobile money could impact savings is if the beneficiaries are constrained in their ability to save. The dissemination of personalized information on mobile money accounts and highlighting the

[7]While the receiving of money is not as complicated of a transaction as a send money transaction, however, it does require other intrinsic knowledge of the technology. For example, to confirm the receipt of the money from the sender via SMS confirmation

importance of savings and the scope to earn interest by maintaining a regular balance could have encouraged beneficiaries to identify mobile money as an instrument to save money.

Another mechanism through which savings could be impacted is if beneficiaries learn to gain trust in the technology. Access to and enforcement of clearer guidelines about disclosure and pricing transparency could help to build trust in the technology. The agent award, designed to foster pro-social motivation (Bénabou and Tirole, 2006) among mobile money agents can then improve levels of trust through *'good customer service'*.

However, we do not observe these mechanisms. As reported in column (6) in Table 3, we do not see a detectable effect of the treatments on savings held in mobile money accounts. This is further confirmed when we look at the decomposition of self-reported data on the type of transactions performed by beneficiaries - only 2.6% of the beneficiaries deposited further money into their accounts (Table A5 in Appendix).

11 Conclusion

Mobile money services are presently available in 96% of developing countries where less than two-thirds of the population do not have access to an account at a formal financial institution (Pasti, 2019; GSMA, 2019). While there has been an increase in all types of digital payments, the MFS business model stands out for its remarkable growth. Subsequently, the rise in the number of mobile money providers indicates a shift in consumer behavior toward digital payments (Better than Cash Alliance, 2016). This contactless platform enables users to make payments, withdraw cash, make deposits, purchase airtime, transfer remittances, and earn interest on savings.

Users can also take advantage of various offers and discounts through reasonable charge rates that they can avail via their "mobile wallets". Furthermore, users benefit from an extensive network of mobile money agents, through which they can easily access the formal banking system without the need to physically visit them.

Cash transfer payments from the government to individuals (G2P) currently extend to approximately 35 million beneficiaries in Bangladesh. Digitized G2P payments enable poor and vulnerable people to choose their preferred mobile money providers, such as via bKash or NAGAD, for receiving their cash transfers. Now beneficiaries are able to have greater control over their finances, and the ability to access their funds in their mobile money wallets immediately – enhancing their ability to engage with the technology. Moreover, prolonged use of mobile money accounts leads to positive spillover effects on financial competition and inclusion. It provides the nudge to use these accounts for other types of transactions – empowering the beneficiaries to make well-informed financial choices.

Personal attributes of beneficiaries, however, such as limited digital literacy, lack of awareness and knowledge regarding mobile money, lack of capacity to read and write SMS, and confidence can present serious constraints to greater uptake of mobile financial services.

This is revealed in our data: despite a decade of MFS providers' existence in the market, only about 15% of the G2P beneficiaries are aware of mobile money through existing sources of information. However, a significant portion (59%) of them have visited a mobile money agent in the last three months. At baseline, our data also reveals low knowledge resulting in low usage and greater dependence on mobile money agents to complete, even the most basic, financial transactions.

We conduct an experiment to understand whether information provision regarding mobile money accounts improves financial inclusion and can incentives, given to financial intermediaries, improve customer services in the use of mobile money accounts. We distribute information campaigns, such as posters, videos, and calendars, and design a non-monetary agent award scheme in study unions.

We find compelling evidence on learning, usage, trust, and on other economic outcomes, such as increases in savings and remittances. The simple information campaign, coupled with a non-monetary award scheme for mobile money agents, increased beneficiaries' trust in mobile money and resulted in an increase in the transfer of remittances by beneficiaries.

We also find evidence of beneficiaries engaging and interacting with the mobile money technology, performing account-related transactions, but only among those who received the information campaigns. The large, positive, and significant effect on self-reported savings and remittances six months after the intervention also points to the efficiency gains that can be achieved with such technology.

Our findings contribute to the ongoing discussion regarding the most effective strategies for targeting financial literacy policies. While we demonstrate significant benefits in providing personalized information to mobile money users, we must exercise caution in assuming that similar gains will be achieved when focusing interventions on financial intermediaries to improve competition in the delivery of mobile money services.

Our findings further endorse policies that encourage consumer learning through enhanced awareness and knowledge when receiving automatic direct payments. Additionally, while there are gains in channeling government transfer payments into accounts (Muralidharan et al. 2016; Aker et al. 2016; Bachas et al. 2017; Breza et al. 2022), it is of significant importance to examine the individual characteristics that determine who can benefit the most.

Our research will provide insight into effectiveness of programs and outreach strategies that can be scaled to address awareness gaps for financial inclusion of these vulnerable populations. Additionally, this research will contribute to global efforts to provide G2P payments in a quick and effective manner and it may serve as an example for other policymakers in other countries looking for evidence-based strategies to digitise G2P payments.

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Appendix

Table A1: Balance Check : Mean and Standard Errors Across Treatment/Control Arms

	Control		T1: Poster + Video + Calendar		T2: Agent Award		T3: Poster + Video + Calendar + Agent Award	
Variable	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE
Beneficiary Age	769	57.449	772	56.649	777	56.680	757	57.367
	[25]	[0.613]	[25]	[0.451]	[25]	[0.526]	[25]	[0.550]
Beneficiary can read and write	769	0.234	772	0.218	777	0.225	757	0.266
	[25]	[0.027]	[25]	[0.015]	[25]	[0.016]	[25]	[0.020]
Beneficiary is a female	769	0.631	772	0.584	777	0.616	757	0.602
	[25]	[0.018]	[25]	[0.014]	[25]	[0.016]	[25]	[0.017]
Household Size	769	3.952	772	4.000	777	3.869	757	3.975
	[25]	[0.119]	[25]	[0.105]	[25]	[0.137]	[25]	[0.121]
Household experienced shock, in past 3 months	769	0.397	772	0.389	777	0.390	757	0.391
	[25]	[0.025]	[25]	[0.027]	[25]	[0.023]	[25]	[0.027]
Whether beneficiary received any remittances, in past 3 months	769	0.081	772	0.082	777	0.094	757	0.131
	[25]	[0.013]	[25]	[0.014]	[25]	[0.015]	[25]	[0.019]
Total Remittances Received (IHS)	769	0.704	772	0.702	777	0.804	757	1.122
	[25]	[0.110]	[25]	[0.116]	[25]	[0.135]	[25]	[0.168]
Whether beneficiary sent any remittances, in past 3 months	769	0.013	772	0.025	777	0.017	757	0.030
	[25]	[0.003]	[25]	[0.007]	[25]	[0.004]	[25]	[0.006]
Total Remittances Sent (IHS)	769	0.108	772	0.193	777	0.131	757	0.242
	[25]	[0.027]	[25]	[0.053]	[25]	[0.033]	[25]	[0.046]
Whether beneficiary sent/received remittances using mobile money account	769	0.072	772	0.078	777	0.071	757	0.110
	[25]	[0.010]	[25]	[0.014]	[25]	[0.013]	[25]	[0.018]
Whether beneficiary has any savings	769	0.079	772	0.075	777	0.053	757	0.070
	[25]	[0.008]	[25]	[0.010]	[25]	[0.007]	[25]	[0.011]
Total Savings (IHS)	769	0.747	772	0.711	777	0.521	757	0.680
	[25]	[0.075]	[25]	[0.089]	[25]	[0.072]	[25]	[0.106]
Whether beneficiary is aware of Mobile Financial Services (all sources)	769	0.424	772	0.386	777	0.441	757	0.436
	[25]	[0.032]	[25]	[0.039]	[25]	[0.037]	[25]	[0.041]
Whether beneficiary met an MFS agent in the past 3 months	769	0.580	772	0.567	777	0.598	757	0.614
	[25]	[0.021]	[25]	[0.025]	[25]	[0.027]	[25]	[0.021]
Whether beneficiary has balance in mobile money account	769	0.049	772	0.035	777	0.037	757	0.040
	[25]	[0.008]	[25]	[0.007]	[25]	[0.006]	[25]	[0.008]
Whether beneficiary thinks it is wise to leave money in the mobile money account	769	0.622	772	0.578	777	0.580	757	0.633
	[25]	[0.020]	[25]	[0.023]	[25]	[0.018]	[25]	[0.028]
Whether the beneficiary paid any fee to the agent to withdraw allowance	769	0.195	772	0.158	777	0.148	757	0.136
	[25]	[0.022]	[25]	[0.023]	[25]	[0.024]	[25]	[0.020]
Whether beneficiary spent his/her own allowance	769	0.899	772	0.934	777	0.923	757	0.898
	[25]	[0.011]	[25]	[0.013]	[25]	[0.009]	[25]	[0.016]
Whether beneficiary can perform at least one transaction related to MFS without assistance	769	0.087	772	0.098	777	0.102	757	0.092
	[25]	[0.011]	[25]	[0.013]	[25]	[0.009]	[25]	[0.013]

Table A2: Balance Check: Normalised Differences and F-Test for Joint Orthogonality

	Normalized	Normalized	Normalized	Normalized	Normalized	Normalized	F-test
	difference	difference	difference	difference	difference	difference	for joint
Variable	(1)-(2)	(1)-(3)	(1)-(4)	(2)-(3)	(2)-(4)	(3)-(4)	orthogonality
Beneficiary Age	0.043	0.041	0.004	-0.002	-0.038	-0.036	0.667
Beneficiary can read and write	0.039	0.021	-0.073	-0.018	-0.112	-0.094	1.327
Beneficiary is a female	0.095	0.029	0.058	-0.066	-0.037	0.029	1.570
Household Size	-0.020	0.037	-0.010	0.057	0.011	-0.048	0.208
Household experienced shock, in past 3 months	0.016	0.014	0.011	-0.003	-0.005	-0.002	0.020
Whether beneficiary received any remittances, in past 3 months	-0.004	-0.047	-0.163	-0.044	-0.160	-0.117	1.851
Total Remittances Received (IHS)	0.001	-0.041	-0.156	-0.041	-0.157	-0.116	1.752
Whether beneficiary sent any remittances, in past 3 months	-0.085	-0.031	-0.119	0.055	-0.035	-0.090	2.644*
Total Remittances Sent (IHS)	-0.078	-0.024	-0.113	0.055	-0.037	-0.091	2.512*
Whether beneficiary sent/received remittances using mobile money account	-0.024	0.003	-0.133	0.026	-0.110	-0.136	1.264
Whether beneficiary has any savings	0.016	0.107	0.035	0.091	0.020	-0.072	2.388*
Total Savings (IHS)	0.014	0.094	0.026	0.080	0.012	-0.067	1.847
Whether beneficiary is aware of Mobile Financial Services (all sources)	0.077	-0.035	-0.024	-0.113	-0.101	0.011	0.428
Whether beneficiary met an MFS agent in the past 3 months	0.026	-0.038	-0.070	-0.063	-0.095	-0.032	0.837
Whether beneficiary has balance in mobile money account	0.072	0.059	0.047	-0.013	-0.025	-0.012	0.741
Whether beneficiary thinks it is wise to leave money in the mobile money account	0.089	0.084	-0.023	-0.006	-0.113	-0.107	1.606
Whether the beneficiary paid any fee to the agent to withdraw allowance	0.097	0.125	0.159	0.028	0.062	0.034	1.420
Whether beneficiary spent his/her own allowance	-0.128	-0.085	0.001	0.043	0.129	0.086	2.141*
Whether beneficiary can perform at least one transaction related to MFS without assistance	-0.039	-0.050	-0.019	-0.011	0.020	0.031	0.399

Notes: Group (1) is the control arm. Group (2) is the treatment arm where beneficiaries were shown the two videos, given the posters and the desk calendars. Group (3) is the arm where the agent award intervention was rolled-out. Group (4) is the treatment arm where beneficiaries were shown the two videos, given the posters, desk calendars and the agent award was rolled-out. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table A3: Balance Check: Normalised Differences and F-Test for Joint Orthogonality

	Normalized	Normalized	Normalized	Normalized	Normalized	Normalized	F-test
	difference	difference	difference	difference	difference	difference	for joint
Variable	(1)-(2)	(1)-(3)	(1)-(4)	(2)-(3)	(2)-(4)	(3)-(4)	orthogonality
Beneficiary Age	0.043	0.041	0.004	-0.002	-0.038	-0.036	0.667
Beneficiary can read and write	0.039	0.021	-0.073	-0.018	-0.112	-0.094	1.327
Beneficiary is a female	0.095	0.029	0.058	-0.066	-0.037	0.029	1.570
Household Size	-0.020	0.037	-0.010	0.057	0.011	-0.048	0.208
Household experienced shock, in past 3 months	0.016	0.014	0.011	-0.003	-0.005	-0.002	0.020
Whether beneficiary received any remittances, in past 3 months	-0.004	-0.047	-0.163	-0.044	-0.160	-0.117	1.851
Total Remittances Received (IHS)	0.001	-0.041	-0.156	-0.041	-0.157	-0.116	1.752
Whether beneficiary sent any remittances, in past 3 months	-0.085	-0.031	-0.119	0.055	-0.035	-0.090	2.644*
Total Remittances Sent (IHS)	-0.078	-0.024	-0.113	0.055	-0.037	-0.091	2.512*
Whether beneficiary sent/received remittances using mobile money account	-0.024	0.003	-0.133	0.026	-0.110	-0.136	1.264
Whether beneficiary has any savings	0.016	0.107	0.035	0.091	0.020	-0.072	2.388*
Total Savings (IHS)	0.014	0.094	0.026	0.080	0.012	-0.067	1.847
Whether beneficiary is aware of Mobile Financial Services (all sources)	0.077	-0.035	-0.024	-0.113	-0.101	0.011	0.428
Whether beneficiary met an MFS agent in the past 3 months	0.026	-0.038	-0.070	-0.063	-0.095	-0.032	0.837
Whether beneficiary has balance in mobile money account	0.072	0.059	0.047	-0.013	-0.025	-0.012	0.741
Whether beneficiary thinks it is wise to leave money in the mobile money account	0.089	0.084	-0.023	-0.006	-0.113	-0.107	1.606
Whether the beneficiary paid any fee to the agent to withdraw allowance	0.097	0.125	0.159	0.028	0.062	0.034	1.420
Whether beneficiary spent his/her own allowance	-0.128	-0.085	0.001	0.043	0.129	0.086	2.141*
Whether beneficiary can perform at least one transaction related to MFS without assistance	-0.039	-0.050	-0.019	-0.011	0.020	0.031	0.399

Notes: Group (1) is the control arm. Group (2) is the treatment arm where beneficiaries were shown the two videos, given the posters and the desk calendars. Group (3) is the arm where the agent award intervention was rolled-out. Group (4) is the treatment arm where beneficiaries were shown the two videos, given the posters, desk calendars and the agent award was rolled-out. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table A4: Attrition

	N					
	C1	T1	T2	T3		
Baseline	769	772	777	757	3075	
Updated Endline	701	718	715	699	2833	on 14th January 2023
Completion Rate	91.2%	93.0%	92.0%	92.3%	92.1%	on 28th January 2023

Notes: C1 is the control arm. T1 is the treatment arm where beneficiaries were shown the two videos, given the posters and the desk calendars. T3 is the arm where the agent award intervention was rolled-out. T4 is the treatment arm where beneficiaries were shown the two videos, given the posters, desk calendars and the agent award was rolled-out.

Table A5: Transaction Type

	(1)	(2)
	Sent Money using MMO Person-to-person	Deposited Money in MMO Agent-to-person
T1: Poster + Video + Calendar	0.00361	0.00135
	(0.0115)	(0.00824)
T2: Agent Award	0.00893	-0.00657
	(0.0114)	(0.00778)
T3: Poster + Video + Calendar + Agent Award	-0.00395	-0.00522
	(0.0100)	(0.00816)
R2	0.018	0.020
Baseline Mean	.026	.016
Observations	2833	2833

Notes: The table reports intent-to-treat. All regressions are estimated with baseline controls and the baseline value of the outcome (where measured, but otherwise excluded). T1 is the treatment arm where beneficiaries were shown the two videos, given the posters and the desk calendars. T2 is the arm where the agent award intervention was rolled-out. T3 is the treatment arm where beneficiaries were shown the two videos, given the posters, desk calendars and the agent award was rolled-out. Baseline controls include age of the beneficiary, household size, female dummy, allowance type (DAA, OAA and WAA), rural/urban dummy, and is clustered at the union level. Robust standard errors in parentheses * $p < 0.10$ ** $p < 0.05$ *** $p < 0.0$