

# Empowering Low-Income Urban Women in Bangladesh through Digital Financial Services

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# Introduction

- In recent year, Mobile Financial Services (MFS) providers have greatly expanded financial services available in developing countries.
- Rapid growth in MFS users in multiple regions, and increased MFS usage for wage and social welfare payments.
- Growing evidence that MFS access enable low-income households to reduce vulnerability to shocks and episodes of hunger (Batista and Vicente [2023]; Jack and Suri [2014]; Jack and Suri [2011]) and changes in consumption, savings and investment behaviour (Breza, Kanz, and Klapper [2020]; Lee, Morduch, Ravindran, Shonchoy, and Zaman [2021]).

## Introduction (Cont'd)

- However, MFS account ownership and digital payments do not, on their own, guarantee improved financial inclusion and economic empowerment.
- Actual use of financial services may be limited by lack of awareness and knowledge, access/control of digital devices, lack of trust in the service provider, and vulnerability to exploitation by intermediary agents.

# This Paper

- Research Question: Does MFS training affect economic outcomes (financial and labour market behaviour, and earnings) of female domestic workers in Bangladesh?
- What we do:
  - Randomised Intervention on MFS training to female domestic workers in Bangladesh (September 2022 - January 2023).
  - We combine an event study approach with RCT evaluation to address our research question.

## Mobile Financial Services in Bangladesh

- Rapid increase in mobile money account ownership between 2014 (3%) and 2021 (54%) (Demirguc-Kunt, Klapper, Singer, and Ansar [2018]; Demirgüç-Kunt, Klapper, Singer, and Ansar [2022]).
- Gender gap in account ownership (20%) and digital payments among account holders (15%) (Demirgüç-Kunt et al. [2022]).
- 9 MFS providers in Bangladesh, but market dominated by three: bKash (48% market share); Nagad (28%); Rocket (21%).

## Context, cont'd.

### **Female Domestic Workers and the HelloTask Platform**

- About 9 million women employed in housemaid work in Bangladesh (Bailur, Srivastava, and Smertnik [2019]).
  - typically low-skilled migrants from rural areas who lack formal employment contracts (Ashraf, Azad, Roshid, and Yasmin [2019]), or access to formal financial services.
  - But most have access to a mobile phone (95% in our study sample).
- HelloTask, a mobile app platform that matches domestic workers with clients in need of housemaid services.
  - Worker wages paid via a specific MFS provider (henceforth 'HelloTask Payment Platform' or HPP)
  - Registration with HPP required for domestic workers to use HelloTask platform.

## Context: bKash vs HelloTask Payment Platform

HPP has lower transaction fees than bKash.

bKash has more MFS agents and registered users than HPP.

**Table 1: bKash vs HPP**

	bKash	HPP
Send-money charge	BDT 5	BDT 0
Cash-out charge per BDT 1000	BDT 18.50 per	BDT 9
Savings interest rate	1.4% (BDT 5,000) to 4% (BDT 50,000+)	5% (BDT 5,000) to 7.5% (BDT 50,000+)
# of registered users	50.5 million	24 million
# of mobile money agents	272,000	240,000

Note: Figures are from March 2022.

## Experiment Design

- Initial list of 780 domestic workers active on HelloTask platform (across 5 major slum areas of Dhaka city).
  - Of these, 563 workers gave consent to take part in the study.
- Study participants randomly assigned to one of three arms:
  - ① Offer of 2-day MFS training and option to switch to MFS provider bKash for future wage payments [T1] (N=170).
  - ② Offer of 2-day MFS training only [T2] (N=167).
  - ③ Experimental control group where no intervention was conducted [C] (N=226).
- 81% of domestic workers in arms T1 and T2 completed the training.
- 27% in T1 (among those contacted - 110/170), opted to switch to wage payments via bKash.



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# Intervention

6 MFS training modules adapted from the HERfinance Digital Wages Program:

- 1 Introduction to Mobile Financial Services
- 2 Using Mobile Financial Services
- 3 Financial Planning and Managing Money
- 4 Budgeting
- 5 Saving
- 6 Talking about Finances with Family



## Training Mode

- ① Training in HelloTask 'hubs', one in each slum area covered in the study; uptake OF 46% across the 2 treatment arms.
- ② Training in domestic workers' homes, offered to those that didn't attend hub training.
- ③ 81% final uptake (hub/home training) across the 2 treatment arms
- ④ Refreshers via IVR calls to all participants in both treatment arms; completed by 27%, partially completed by another 32%.

## Project Timeline

Recruitment of Participants  
*(Jun - Jul 2022)*



Baseline Survey  
*(Aug 2022)*



DFS Training  
*(Sep 2022 - Jan 2023)*



DFS Reminder via IVR  
*(May - Jun 2023)*



Offer of Wage via bKash  
*(Jun 2023)*



Endline Survey  
*(Dec 2023)*



# Hypotheses

## MFS training of domestic workers

- should increase awareness of financial services available through mobile money accounts
  - ↑ use of HPP for financial transactions (T1 & T2 vs C)
  - ↑ employment through HelloTask (T1 & T2 vs C)
  - potentially ↑ conflict within the household (T1 & T2 vs C)

## Offer of platform switching for wage payment should

- ↑ use of bKash for financial transactions (T1 vs T2)
- ↑ employment through HelloTask (T1 vs T2)

# Datasets

- Household survey data of study participants
  - Baseline (Aug 22) and endline (Dec 23) surveys
- Administrative data from HelloTask platform
  - Hours worked and earnings (Jun 22 to Sep 23)
- Administrative data on mobile money account transactions (bKash)
  - Cash in/out, transfers, disbursements received (Jun 21 to Feb 24)

→ Go to Summary Statistics

## Empirical specification

Intent-to-treat effects:

$$y_{i1} = \alpha + \mathbf{X}_{i0}\beta + \gamma_1 \mathbf{T}_{1i} + \gamma_2 \mathbf{T}_{2i} + \epsilon_{i1} \quad (1)$$

- $y_{i1}$ : outcome variable for individual  $i$
- $\mathbf{T}_{1i}$  and  $\mathbf{T}_{2i}$  are treatment dummies
- $\mathbf{X}_{i0}$  vector of baseline characteristics of individual  $i$  including, if available, baseline value of outcome of interest
- $\epsilon_{i1}$ : i.i.d. error term

## Key Evaluation Findings

- Slight improvement in knowledge about mobile money, as measured by endline MFS quiz.
  - 5-10% likelihood of answering an additional question correctly (average of 4 out of 6 answered correctly in control arm)
  - +ve effect in both treatment arms, statistically significant in T2 only.
- Increased wages earned through HelloTask platform in last 30 days.
  - 9-11% increase, statistically significant effect in both treatment arms.
- Increased savings via formal sources
  - 10% increased likelihood of savings in both treatment arms, statistically significant in T2 only.



## Key Evaluation Findings, cont'd.

- Mixed results on remittances sent and received.
  - Increased likelihood of sending remittances via any medium in T1 but decreased likelihood in T2.
  - No effect on remittances received, except increase in remittances received by hand in T2.
- No effect on pressure to share earned income with spouse (22% in control arm at endline).

# Conclusion

- We investigate the effects of MFS training on an economically marginalised group: women employed in the domestic work sector in Bangladesh.
- We implement an MFS training intervention with an experimental design in Bangladesh.
- Preliminary findings indicate the intervention led to
  - a modest increase in knowledge about mobile money
  - increased likelihood of savings via formal sources
  - increased earnings (via a mobile app platform for matching domestic workers to clients)
  - no change in pressure to share earned income

# Baseline Summary Statistics

**Table 2: Baseline Survey Summary Statistics**

	Mean	SD	Min	Max	Count
<b>A. Individual Characteristics</b>					
Age	34.77	8.08	15	80	563
Respondent is married	0.68	0.47	0	1	563
Respondent is household head	0.35	0.48	0	1	563
Completed primary education	0.44	0.5	0	1	563
Completed secondary education	0.19	0.39	0	1	563
Has access to personal phone	0.95	0.22	0	1	563
<b>B. Knowledge of Mobile Money</b>					
Ever used mobile money account	0.83	0.37	0	1	563
Has a bKash mobile money account	0.48	0.5	0	1	563
Has other (Nagad/ROCKET) mobile money account	0.63	0.48	0	1	563
Knows basic services of mobile money account: deposit, withdrawal, send money	0.95	0.22	0	1	563
Knows can save money in mobile money account	0.05	0.21	0	1	563
<b>C. Usage of Mobile Money</b>					
Deposits money in mobile money account	0.03	0.18	0	1	563
Sends money using mobile money account	0.55	0.5	0	1	563
<b>D. Remittance/Savings</b>					
Received remittance in the last 6 months	0.39	0.49	0	1	563
Received remittance using mobile money account	0.23	0.42	0	1	563
Sent remittance in the last 6 months	0.48	0.5	0	1	563
Sent remittance using mobile money account	0.34	0.47	0	1	563
Has any savings in the last 12 months	0.7	0.46	0	1	563
<b>E. Household Characteristics</b>					
Household size	3.58	1.57	0	13	563
Number of children in the household	1.52	1.18	0	7	563
Domestic worker is primary earner	0.17	0.37	0	1	563
Weekly per capita consumption (BDT)	224.22	260.22	6	3750	563

# Mobile Money Transactions Summary Statistics

**Table 3:** bKash Transactions Summary Statistics

	mean	sd	min	max
Cash-in freq	0.77	1.92	0	37
Cash-out freq	0.88	1.87	0	39
Money sent freq	0.44	1.37	0	26
Money received freq	0.56	1.51	0	21
Disbursements freq	0.15	0.52	0	6
Cash-in amount	1511.25	4772.99	0	91970
Cash-out amount	1536.41	4036.66	0	65585
Money sent amount	1797.72	7090.29	0	148980
Money received amount	1528.35	6614.43	0	152295
Disbursements amount	382.50	1654.63	0	27307
Observations	6102			

bKash transactions by month from June '21 to Feb '24.

Amounts are in Bangladesh Taka.

→ Return

**Table 4: Baseline Balance Check: Mean and Standard Errors by Arm**

Variable	N	(1) Control Mean/SE	N	(2) T1 Mean/SE	N	(3) T2 Mean/SE	t-test Difference (1)-(2)	t-test Difference (1)-(3)	t-test Difference (2)-(3)
Age	226	34.181 [0.556]	170	34.641 [0.604]	167	35.605 [0.603]	-0.460	-1.423*	-0.964
Respondent is married	226	0.677 [0.031]	170	0.676 [0.036]	167	0.683 [0.036]	0.001	-0.006	-0.006
Respondent is household head	226	0.363 [0.032]	170	0.335 [0.036]	167	0.359 [0.037]	0.028	0.004	-0.024
Completed primary education	226	0.442 [0.033]	170	0.441 [0.038]	167	0.425 [0.038]	0.001	0.017	0.016
Completed secondary education	226	0.221 [0.028]	170	0.176 [0.029]	167	0.156 [0.028]	0.045	0.066	0.021
Has access to personal phone	226	0.938 [0.016]	170	0.959 [0.015]	167	0.952 [0.017]	-0.021	-0.014	0.007
Mean monthly income (BDT)	186	7375.652 [287.203]	127	7630.654 [383.644]	124	7604.871 [343.149]	-255.001	-229.219	25.783
Ever used mobile money account	226	0.854 [0.024]	170	0.847 [0.028]	167	0.796 [0.031]	0.007	0.058	0.051
Has bKash mobile money account	226	0.473 [0.033]	170	0.518 [0.038]	167	0.461 [0.039]	-0.044	0.012	0.057
Other MMA	226	0.659 [0.032]	170	0.576 [0.038]	167	0.647 [0.037]	0.083*	0.013	-0.070
Deposits money in mobile money account	226	0.027 [0.011]	170	0.029 [0.013]	167	0.048 [0.017]	-0.003	-0.021	-0.018
Sends money using mobile money account	226	0.566 [0.033]	170	0.582 [0.038]	167	0.509 [0.039]	-0.016	0.057	0.073
Received remittance in the last 6 months	226	0.429 [0.033]	170	0.365 [0.037]	167	0.353 [0.037]	0.064	0.076	0.011
Sent remittance in the last 6 months	226	0.456 [0.033]	170	0.506 [0.038]	167	0.485 [0.039]	-0.050	-0.029	0.021
Any savings in the last 12 months	226	0.743 [0.029]	170	0.653 [0.037]	167	0.695 [0.036]	0.090*	0.049	-0.042
DW is primary earner	226	0.142 [0.023]	170	0.200 [0.031]	167	0.174 [0.029]	-0.058	-0.032	0.026
Weekly per capita consumption (BDT)	226	202.949 [9.587]	170	221.702 [17.112]	167	255.565 [29.850]	-18.752	-52.615*	-33.863

**Table 5: Balance Check: Normalised Differences and F-Test for Joint Orthogonality**

Variable	Normalized difference (1)-(2)	Normalized difference (1)-(3)	Normalized difference (2)-(3)	F-test for joint orthogonality
Age	-0.056	-0.175	-0.123	1.520
Respondent is married	0.001	-0.012	-0.013	0.009
Respondent is household head	0.058	0.007	-0.050	0.178
Completed primary education	0.003	0.035	0.032	0.067
Completed secondary education	0.111	0.166	0.056	1.461
Has access to personal phone	-0.093	-0.061	0.033	0.458
Mean monthly income (BDT)	-0.062	-0.059	0.006	0.196
Ever used mobile money account	0.019	0.153	0.132	1.286
Has bKash mobile money account	-0.088	0.025	0.113	0.609
Other MMA	0.171	0.026	-0.144	1.562
Deposits money in mobile money account	-0.017	-0.115	-0.096	0.740
Sends money using mobile money account	-0.032	0.115	0.147	1.030
Received remittance in the last 6 months	0.131	0.155	0.024	1.426
Sent remittance in the last 6 months	-0.100	-0.059	0.042	0.501
Has any savings in the last 12 months	0.198	0.109	-0.089	1.925
DW is primary earner	-0.157	-0.088	0.067	1.199
Weekly per capita consumption (BDT)	-0.103	-0.191	-0.108	1.981

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