The real effects of electronic wage payments

First results

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The Real Effects of Electronic Wage Payments: First Results*

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Abstract

This paper reports first results of a randomized controlled trial that introduced electronic wage payments in a population of salaried factory workers in Bangladesh. Workers in a treatment group were assigned to receive their monthly wage into either a bank account or a mobile account, while a control group continued to receive their monthly wages in cash. We find that digital wage payments increase savings and the ability to cope with unanticipated shocks. The response varies between different types of electronic wage payments. Wage payments into conventional bank accounts are more likely to be used for savings, whereas payments into a mobile account leave savings unaffected but can potentially help manage liquidity.

Keywords: Electronic Wage Payments, Savings, Consumption.

1 Introduction

More than two billion people around the world do not have access to digital financial systems (Demirgüç-Kunt et al., 2017). These adults - most of them poor - must rely on cash to manage their day-to-day finances and plan for the future. Cash-only transactions with governments, banks and other institutions lead to high transaction costs, losses due to corruption, and a widening of the gap between the formal and informal financial systems. Digitizing payments and remittances can reduce income inequality, boost job creation, accelerate consumption, increase investments in human capital, and directly help poor people manage risk and absorb financial shocks.

Policymakers around the world view the migration of poor households to electronic payments as an essential ingredient in expanding financial inclusion. Digitizing has the potential to dramatically reduce costs, increase efficiency and transparency, help build the infrastructure, and broaden familiarity with digital payments. When governments shift their social, salary, and procurement payments and taxation and licensing receipts to electronic form, it creates a foundation upon which the private sector and person-to-person payments, such as international and domestic remittances, can build. Many governments have begun to experiment with the use of electronic payments technologies, for example as a way to channel welfare payments to low-income individuals. Colombias Familias en Accion program and Pakistan's Benazir Income Support Scheme are two examples of welfare programs that operate entirely through electronic payments.

Electronic payments may also provide a solution to another pervasive problem in developing countries: the underutilization of formal accounts. Digital payments are often the first entry point into the financial system for individuals and provide an opportunity to offer accounts traditional formal bank accounts or mobile phone accounts–to the unbanked for savings or payments. Yet while many countries have aggressively expanded their banking infrastructure, poor households often still choose to save in other vehicles, and many formal accounts remain dormant so that their potential welfare benefits are not realized. Demirgüç-Kunt et al. (2017), for example, show that, while 50% of adults have a formal account, only 43% of individuals with accounts report making a deposit during the previous 12 months. Moreover, only 21% of adults globally and 7% of adults in South Asia report using their account to receive regular wage or welfare payments.

But despite the assumed importance of modern payment technologies for low income populations, there currently exists little empirical evidence on the specific welfare benefits of electronic payments. Notable exceptions are studies of M-Pesa in Kenya, which has achieved unprecedented success in providing mobile payment services to over 80% of Kenyan households. Results from this line of research suggest that electronic payments may have significant welfare benefits, as they reduce transaction costs and allow for improved consumption smoothing. Mobile-phone based accounts are used to make transfers to individuals affected by economic shocks, and mobile paymnents help people receive assistance from a geographically wider network of relatives and friends (Jack

and Suri, 2014; Blumenstock et al., 2016).

To study these issues, we conduct a randomized controlled trial with salaried factory workers in Bangladesh. We work with two large garment factories which, at the beginning of our study, paid all wages in cash. We randomly and individually assign workers within the same factory to either continue receiving their wages in cash, or receiving electronic wage payments through either a bank or mobile account. We follow workers over approximately two years and measure the effect of electronic wage payments on savings, asset accumulation, the ability to cope with financial shocks.

This project contributes to several literatures. First, a large body of academic research on the benefits of formal account ownership and savings and on the welfare effects of nudging households to make more forward-looking financial decisions. It also contributes to a growing set of studies on the impacts of mobile banking and electronic transfers. The savings literature has generally demonstrated virtuous effects of nudging individuals to save. Dupas and Robinson (2013), Schaner (2016), and Brune et al. (2016) have shown that encouraging savings can dramatically increase business investment and even future earnings. As a first step towards enabling individuals to save, large scale efforts are currently underway in many countries to open bank accounts for unbanked households and individuals. However, encouraging the active use of such basic accounts remains a major challenge. By providing workers with a salary account, our study creates strong incentives for factory workers to interact regularly with the formal banking system and tests whether this can encourage savings and build financial capabilities.

There is also a substantial literature showing that small nudges may have a significant impact on forward-looking financial and non-financial behaviors. The examples are wide ranging and include 401 k contributions and default options (Choi et al 2004), health and insurance defaults (Halpern et al., 2007), and gym memberships (DellaVigna and Malmendier, 2006). Similarly, a growing body of evidence shows that behavioral nudges can also increase savings deposits and account usage. Ashraf et al. (2006) demonstrate the potential for commitment savings accounts to encourage savings, Karlan et al. (2016) combat limited attention problems with SMS reminders, and Karlan and Kutsoati (2013) are testing whether account labeling can also increase formal savings accumulation. M-Pesa in Kenya and other fast-growing mobile money platforms have garnered much excitement and attention among practitioners and policy-makers for their ability to reach under-served communities. Jack and Suri (2014) and Blumenstock et al. (2016) demonstrate how access to mobile money platforms can facilitate remittances and help households to smooth unexpected weather and health shocks. However, mobile money platforms have not proved to be very effective savings devices.

We build on these strands of previous research in several ways. First, we target an unbanked population with high reliance on formal, regular wages. Further, the wages paid to textile workers represent a high fraction of the households income. Directing the entirety of these funds into a formal savings vehicle could have much higher effects on savings and other outcomes than previous

interventions. Further, our target population often relies on high interest rate loans to smooth consumption between pay days and often report cutting back on consumption in the last week of the month. Finally, our partnership with the textile factories allows us to measure the real effects of financial access and planning on productivity and attendance.[1]

To preview our preliminary results, we find that our treatments indeed encourage active use of the formal financial accounts opened for the experiment. We find evidence of savings responses in both bank treatments coming from extensive margin effects as well as savings composition effects – money flows out of informal vehicles toward the formal accounts. We also find evidence that access to mobile EWP helps workers smooth consumption. We find evidences on changes in work satisfaction and overtime labor supply. Finally, we document robust improvements in trust in both types of formal accounts.

2 Setting and Experimental Design

2.1 Sample Population and Descriptive Statistics

The population for our study consists of workers employed by two large garment manufacturing firms in urban and peri-urban Dhaka. Workers in the sample were selected from the universe of all production workers employed by these firms at the time of our baseline survey. The firms provided us with a full list of their workers employed in manufacturing jobs. Workers are assigned to one of several salary grades, based on seniority and job description. We exclude the lowest seniority level from our sample, which consists of workers whose tenure at the firm is typically too temporary to warrant opening a formal payroll account. This leaves us with a sample of 3136 workers who participated in our experiment. Table 1 reports summary statistics for the sample population.

Fifty-five percent of workers in our sample have completed primary school; an additional 10% have completed secondary school and 10% have no formal education. The mean (median) worker in our sample has 4.5 (3) years of experience working in the garment industry. The workers in our sample have an average base salary of Tk 6855 (US $88), and very limited experience using formal financial services. At baseline, only 25% of workers report having savings in any formal account. Seventy-five percent had used a mobile payments platform to send money, though few used their own account - less than 1% had savings in a mobile account. The use of informal financial services, on the other hand, is widespread: 33% of workers had informal savings, such as keeping cash at home or with local savings groups. Fifty percent had loans outstanding from informal sources, typically at extremely high interest rates. The vast majority of workers in our sample are from rural parts of Bangladesh, and have migrated to Dhaka with specific savings goals in mind. In our baseline survey, 74% workers report that they came to Dhaka with specific savings plans, however only 13% of workers with savings plans report that they feel they are close to meeting their savings

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[1]We have not yet analyzed the administrative job performance data.

target. The baseline summary statics reveal that there is significant variation in both financial experience as well as financial literacy and capabilities in the sample. While a minority of workers report experience with formal financial tools and having no problems budgeting their monthly income, 75% of workers in our sample have trouble answering basic financial literacy questions, 65% report having difficulty sticking to financial plans, and 17% report having to cut meals in the last week before payday because they were unable to budget their income over the course of the month.

2.2   Experimental Treatments

Prior to our study, all workers in the sample received their monthly wages in cash. The treatment conditions of our experiment, described below, randomly and individually assigned worker to receive their wage payments through different channels. Workers were either assigned to a control group that continued to receive wage payments in cash, treatment groups in which workers received digital wage payments through one of two alternative platforms, or one of two placebo groups in which workers were provided with an account but continue to receive their wages in cash. These additional placebo treatments allow us to separate the impact of receiving wage payments into a digital account from the impact of the technology itself.

2.2.1   Control Group

We assigned 728 (23%) workers to the control group, in which workers continued to receive wage payments in cash. As in the period prior to our experiment, these workers were paid on the factory premises by the factory's accountant team and received their wage payment in cash on the firm's standard payday. Workers sign for the receipt of their wage, and we observe both the amount paid out as well as the date on which workers assigned to the control group receive their wage payment. Workers assigned to the control group completed the same surveys on the same timeline as all other workers.

2.2.2   Electronic Wage Payments into a Bank Account

A total of 884 (28%) workers were assigned to the *Bank EWP* treatment condition. For each worker in this group, the factory opened a payroll account with its bank and deposited the worker's monthly wage into the account on the firm's regular payday. Workers were provided with a debit card that they could use to withdraw money at an ATM installed on factory premises. They also received an introductory training session that explained how to use the debit card to access their account, but did not provide additional financial literacy content, and were given access to a bank representative who was present on the firm's premises and could provide assistance in case workers faced any difficulties using their debit cards to withdraw money.

2.2.3 Electronic Wage Payments into a Mobile Account

A total of 873 (28%) workers were assigned to the *Mobile EWP* treatment. In this treatment condition, the firm opened a mobile payroll account for the worker and deposited their monthly wage into this account at the time of the firm's regular payday. The *Mobile EWP* treatment was implemented using Bangladesh's largest mobile payments platform, which is widely used and has an extensive agent network throughout the country. Workers assigned to this treatment condition received a short introduction that explained how their mobile account works and how they can withdraw money at a mobile agent. As in the *Bank EWP* treatment, the training did not provide any additional financial literacy content. A mobile agent was present at the factory on pay days for workers to withdraw their salary, and to provide assistance in case workers faced difficulty using their account or withdrawing money.

2.2.4 Bank Account Only

In order to be able to separate the effect of receiving wage payments into a digital account from the effect of having an account, 201 (6%) workers were assigned to the *Bank only* treatment condition. In this treatment, the factory opened a bank account for the worker, whose features were identical to those of the accounts opened for workers in the *Bank EWP* treatment, including provision of a debit card. However, workers in the *Bank only* continued to receive their wage in cash, so that usage of the bank was optional for this group. All workers assigned to this treatment condition nonetheless received the same introductory presentation as workers in the *Bank EWP* condition, aimed at familiarizing them with the features of the account.

2.2.5 Mobile Account Only

Similarly, in order to enable us to separate the effect of receiving wage payments into a mobile account from the effect of having access to a mobile account, 450 (14%) workers were assigned to the *Mobile only* treatment. Workers in this treatment received an activated mobile account with the same provider used in the *Mobile EWP* treatment, as well as an introductory presentation meant to familiarize them with the features of the account. However, workers assigned to this treatment continued to receive their wage payments in cash so that, as in the previous treatment, usage of the mobile account was optional.

3 Main Results

3.1 Empirical Specification

Since treatment is randomly assigned at the individual level, we estimate simple treatment effect regressions of the form:

$$Outcome_i = \alpha + \sum_k \gamma_k T_{i,k} + X'\delta + \epsilon_i$$

where $T_{i,k}$ is a treatment indicator for individual i assigned to treatment condition k, X is a vector of controls and ϵ_i is a stochastic error term.

3.2 Savings

We first analyze the effect of electronic wage payments on account balances and savings (Table 4). In Column (1) we show that workers who received a bank or mobile account are significantly more likely to report having a formal account with a non-zero balance. This validates our intervention and shows that in addition to receiving the accounts, workers are indeed leaving some funds in the accounts. The remaining columns report the effect on formal, informal, and total savings. We detect both extensive margin effects as well as savings composition effects. As shown in Columns (2) and (4), workers that receive wages directly into a bank account are significantly more likely to report any savings and larger total savings (log). The higher reported savings is driven by both a significant increase in account balances (Columns 5 and 6), as well a significant decrease in money saved informally at home (Column 8). In other words, we find that workers receiving electronic wage payments to a bank account accumulate formal savings in their account–rather than withdraw money to save at home.

In the endline survey, we do not find higher net savings among workers paid into a mobile money account or who received only a bank or mobile account with electronic payments. Looking next at workers paid wages into a mobile money account, we find a small, though significant, increase in log formal savings, and a corresponding a significant decrease in total logged informal savings.

Workers who received only a bank account have a significant increase in total account balances and significant decrease in savings with family or friends in Dhaka, suggesting that workers might be depositing money into their account previously held informally outside their home. We find no effect on any measure of savings of only have a mobile money account, which is consistent with other literature showing that these accounts are traditionally not used for savings (Jack and Suri, 2014).

3.3 Consumption

Table 5 reports our estimation results showing no average effects of electronic wage payments or access to a bank or mobile account on large purchases (Column 5). Columns (1) and (2) show no effect of electronic wage payments or access to an account on land, business asset, gold or home purchases, with the exception of economically small and weakly significant effects of electronic wage payment into an account on home ownership and on access to only a bank account on the purchase of gold. We plan to explore impacts on non-durable consumption in the follow-up data.

We also plan to explore whether the null impacts in the average treatment effects mask important heterogeneity by the worker's gender.

3.4 Shock Mitigation

Table 6 reports evidence on the role of mobile money accounts to mitigate income shocks. We find that while mobile money EWP has limited impacts (if at all) on long run savings, workers receiving wages to a mobile money account were, nonetheless, significantly less likely to report inadequate resources to cope with income shocks in the past year (Column 6). Furthermore, workers receiving electronic wage payments to a mobile money account are less likely to report cutting meals or medical expenses in the past year. Weaker evidence is found that workers receiving only a mobile account (without electronic wage payments) are less likely to be unable to pay school fees. While the point estimates suggest that shocks may have also decreased for those in the bank treatments, the effects are not statistically significant at standard levels.

Given the limited impacts on savings in Table 4, one interpretation of these effects is that the use of mobile payments might facilitate the receipt of payments as well as strengthen and expand informal insurance networks among poor households (Jack and Suri, 2014). However, it is also possible that the composition of savings may also help with shock mitigation. One aspect of the mobile EWP arm that the workers particularly appreciated is its flexibility – mobile money cash out is extremely convenient and can be done at thousands of locations around Dhaka. This flexibility may facilitate timely shock mitigation by keeping resources highly liquid.

3.5 Trust

Table 7 shows the effects of the intervention on trust in financial institutions and mobile service providers. Columns (1) and (3) ask workers to rate their confidence in putting 1000 taka in a bank or mobile money account, respectively, for a 1 month period. Columns (2) and (4) report the confidence of workers in putting 5000 taka in an account for a 1 year horizon. First, note that mobile money has a trust deficit among members of the control group. The average confidence in mobile money accounts for the 5000 taka deposit is 6.256 out of 10, compared to 7.635 out of 10 for banks.

We find that workers who receive payments to a mobile money account or only access to a mobile account report significantly greater confidence in holding money in that type of account for up to a year. Both this group of workers and workers receiving electronic wage payments into a bank account report confidence in holding money in a bank account for up to a year. Note that the increase in confidence due to receiving the mobile EWP treatment erases the trust gap between banks and mobile money.

Columns (5) and (6) further explore the perceptions of workers. Note again, that in the control

group, only 78% of workers believe that mobile money firms behave in the best interest of their customers, compared to 92% for banks. All workers offered any account are significantly more likely to report their belief that mobile money providers act in their customers best interest and they would recommend a mobile account to others. Notably, only workers receiving wage payments into a bank account would differentially be more likely to recommend a bank account to others.

These results highlight that workers tend to already have high levels of confidence and trust in banks, but have less favorable views of mobile money platforms. The treatment improves general trust in both kins of institutions, but is especially successful at closing the gap between banks and mobile money.

3.6   Work Satisfaction and Job Outcomes

Table 8 examines the effect of access to an account and electronic wage payments on work satisfaction and other workplace outcomes. Most notably, workers paid directly into a bank account report a significant higher likelihood of working overtime when offered. This is consistent with other studies finding, for example, self-employed adults offered a bank account work more hours. Our results extend this literature to suggest that adults work harder and exert more effort when they have greater privacy, security, and control over their earnings. One interpretation of the bank EWP treatment is that it effectively increases the control rights of the workers over that income, increasing desired labor supply.

The table also shows that our treatments improved job satisfaction. The points estimates of all four treatment groups are positive, and the treatment effects for the mobile EWP and bank only groups are statistically distinguishable from zero. These results are consistent with other survey evidence suggesting that when asked at endline whether, hypothetically, they would switch to a different method, the vast majority of workers reported that they wanted to keep whatever method they were assigned.

4   Conclusion

Our preliminary results suggest that broadly, our treatments "worked" for stimulating the usage of formal financial products. We find detectable increases in savings in both bank treatments. The extensive margin response of bank EWP is particularly strong. We also find substantial change in teh composition of savings in the two bank treatments. In contrast, the mobile money treatments did not have very strong long-run impacts on total savings accumulation. This is consistent with the typical usage patterns of mobile money accounts, and low incidence of savings accumulation in the mobile wallet.

Moreover, we find evidence that electronic wage payments likely did help workers better respond to shocks, especially in the mobile EWP treatment. All treatments appeared to increase general

trust in financial intermediaries, especially the mobile money platforms.

One lingering question is, given the average benefits of electronic wage payment and the costs of cash for the factories, why hasn't the market stepped in to expand the scale of electronic wage payments? In experience implementing the project, there may be several key barriers at play. First, factories may fear resistance by workers. It is true that in our experience, workers may have been nervous at the prospect of changing their method of getting paid. However, our results suggest that our workers not only learned how to use their accounts and adjusted to the new system, but actually preferred the electronic account types at endline.

Second, one important barrier to scale-up may be insufficient identification documentation. We found that many workers do not have national ID cards, and among those who do, there are many mistakes in the information printed on the cards. This makes it hard to satisfy the "know your client" (KYC) requirements imposed by the central bank. Moreover, any changes in the regulatory requirements put any implementation of electronic payments at risk. During our project implementation, Bangladesh Bank changed the documentation requirements five times, for example.

Third, firms may fear the costs of upkeep of an electronic payroll system. Troubleshooting is essential to keep payroll accounts operational. For example, ATM cards may be lost or captured by the ATM machines, workers may forget their pin codes. Moreover, workers may lose their SIM cards causing a loss of access to their mobile money accounts. Our results show that when implementation works well, trust in the financial system improves. However, a botched implementation could easily have exactly the opposite result.

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Figures and Tables

Figure 1: **ATM Screen – Withdrawal**
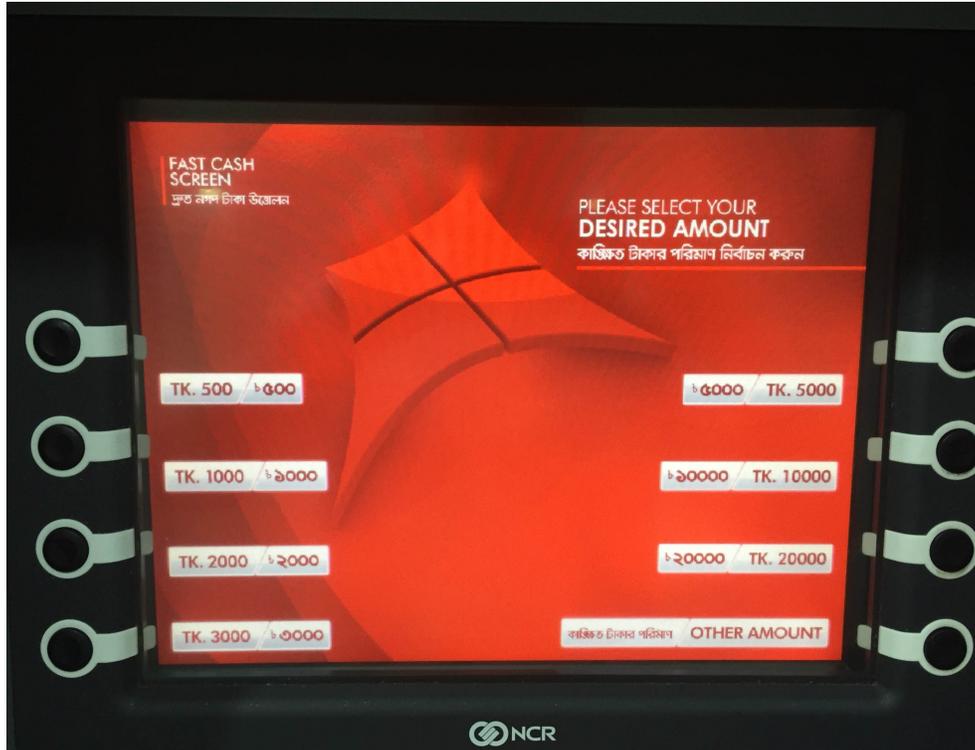
Notes: The customized withdrawal menu of an ATM machine, located on the premises of a participating garment factory.

Figure 2: **Salary Withdrawal**

Notes: A worker withdrawing her salary at the factory ATM.

Table 1: **Summary Statistics**

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Savings Experiment						
	Observations	Mean	Median	StDev	Min	Max
I. Demographics						
Female	3,136	0.591	1	0.492	0	1
Married	3,136	0.715	1	0.452	0	1
Primary school education	3,136	0.651	1	0.477	0	1
Work experience (years)	3,136	4.660	3	3.476	0	11
Tenure in current job (years)	3,136	3.487	2	3.287	0.5	11
II. Savings						
Savings	3,136	0.502	1	0.500	0	1
Savings balance, Total Tk	3,136	14074.46	0	23886.03	0	180000
Formal savings	3,136	0.253	0	0.435	0	1
Formal savings balance, Tk	3,136	8,456.23	0	19,511	0	180,000
Informal savings	3,136	.304	0	.460	0	1
Informal savings balance, Tk	3,136	5,618.22	0	1,4238	0	120,000
Savings at home, Tk	3,136	1310.188	0	5504.988	0	60000
Savings with family in Dhaka, Tk	3,136	530.533	0	4353.779	0	60000
III. Financial Planning						
Has savings goal	3,136	0.737	1	0.440	0	1
Reached savings goal? (yes=10)	2,312	2.847	2	2.214	1	10
Has made remittance, last 6 months	3,136	.815	1	.388	0	1
Total remittances last 6 months	3,136	58,842.36	54,000	86,803.20	0	2,092,800
Remittances Dhaka, last 6 months	3,136	12,200.70	0	71,016.31	0	862,800
Remittances home village, last 6 months	3,136	46,641.66	44,000	49,698.32	0	1,438,800
IV. Financial Capabilities						
Has used mobile money	3,136	0.748	1	0.434	0	1
Gives in to temptations to spend	3,136	0.719	1	0.449	0	1
Trouble saying no to requests for fin. help	3,136	0.802	1	0.399	0	1
Trouble staying within financial plans	3,136	0.651	1	0.477	0	1
Had to cut meals last 12 months	3,136	0.169	0	0.375	0	1
Would not be able to save 5000 taka over next 6 months if needed	3,136	0.220	0	0.414	0	1
V. Trust in Financial Institutions						
Confidence in Bank	1,633	8.102	10	2.647	1	10
Confidence in bKash	1,633	6.056	6	3.370	1	10
VI. Work Satisfaction						
Overall job satisfaction	3,135	7.264	8	2.453	0	10
Satisfaction with benefits	3,135	7.347	8	2.506	0	10

Table 2: **Balance**

Dependent variable:	(1) Female	(2) Married	(3) Has children	(4) Has savings	(5) Has formal savings	(6) Time at current job	(7) Time expected to stay in job
EWP Bank	-0.00227	0.00330	0.0150	-0.00174	-0.0221	0.0204	0.146
	(0.0246)	(0.0224)	(0.0248)	(0.0250)	(0.0219)	(0.0817)	(0.531)
EWP Mobile	0.00421	-0.0178	0.0172	0.0335	-0.0185	0.01000	0.115
	(0.0247)	(0.0227)	(0.0248)	(0.0251)	(0.0221)	(0.0824)	(0.615)
Bank only	-0.0102	0.00623	0.00296	0.0395	0.00404	0.0142	0.282
	(0.0407)	(0.0373)	(0.0409)	(0.0410)	(0.0342)	(0.0851)	(0.649)
Mobile only	-0.00732	-0.00953	0.0118	-0.000181	-0.0328	0.00627	-0.585
	(0.0296)	(0.0272)	(0.0297)	(0.0300)	(0.0258)	(0.0963)	(0.690)
Observations	3,136	3,136	3,136	3,136	3,136	3,136	3,136
R-squared	0.001	0.003	0.007	0.005	0.020	0.302	0.011
Control Mean EL	0.593	0.721	0.558	0.486	0.277	3.018	3.475

Notes: The table presents a test of random assignment. Each column reports results from a separate regression in which the dependent variable indicated in the header is regressed on each of the four treatment indicators. Heteroskedasticity robust standard error are reported in parentheses.

Table 3: **Attrition by Treatment**

Dependent variable:	(1) In data=1	(2) In factory=1	(3) In data=1	(4) In factory=1
Bank EWP	0.00405	-0.00284	-0.00255	-0.0110
	(0.0216)	(0.0240)	(0.0212)	(0.0236)
Mobile EWP	0.0288	-0.000972	0.0262	-0.00505
	(0.0213)	(0.0240)	(0.0210)	(0.0238)
Bank only	0.00456	0.0217	0.000276	0.0168
	(0.0359)	(0.0397)	(0.0354)	(0.0390)
Mobile only	-0.00899	-0.00419	-0.0106	-0.00646
	(0.0262)	(0.0289)	(0.0258)	(0.0284)
Observations	3,136	3,136	3,136	3,136
R-squared	0.002	0.004	0.034	0.033
BL Controls	–	–	✓	✓
Control Mean EL	0.751	0.643	0.751	0.643

Notes: The table summarizes attrition by treatment condition. The dependent variable in columns (1) and (3) is a dummy equal to one for each individual that remains in the sample until the endline. The dependent variable in columns (2) and (4) is a dummy equal to one if a worker remains employed by the factory until the endline. Standard errors, in parentheses, are heteroskedasticity-robust.

Table 4: **Treatment Effects: Savings**

VARIABLES	(1) Has formal account (non-zero balance)	(2) Has any savings	(3) Total savings	(4) Total savings log	(5) Total formal savings	(6) Total formal savings log	(7) Total informal savings	(8) Total informal savings log	(9) Savings at home	(10) Savings with family or friends in Dhaka
Treat: Bank EWP	0.547***	0.0965***	2,380	1.166***	4,199*	4.329***	-1,681	-0.133	-1,293**	-818.0
	(0.0240)	(0.0200)	(2,859)	(0.213)	(2,299)	(0.243)	(1,699)	(0.233)	(614.0)	(730.5)
Treat: Mobile EWP	0.352***	-0.0237	498.4	-0.137	2,265	0.440*	-1,911	-0.423*	-745.1	37.10
	(0.0260)	(0.0228)	(2,754)	(0.236)	(2,258)	(0.257)	(1,782)	(0.238)	(688.8)	(795.2)
Treat: Bank Only	0.0710*	0.0383	5,530	0.618	7,861**	0.809*	-1,432	0.486	192.5	-1,862**
	(0.0425)	(0.0370)	(4,657)	(0.387)	(3,925)	(0.421)	(2,921)	(0.391)	(1,003)	(925.4)
Treat: Mobile Only	0.0323	-0.0214	2,107	-0.137	3,544	0.273	-1,209	-0.160	-14.29	-544.8
	(0.0304)	(0.0279)	(3,553)	(0.287)	(2,893)	(0.306)	(2,145)	(0.287)	(879.1)	(865.6)
Observations	2,279	2,279	2,279	2,279	2,279	2,279	2,279	2,279	2,279	2,279
R-squared	0.278	0.079	0.203	0.118	0.252	0.275	0.086	0.078	0.034	0.031
Basic BL Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Control Mean EL	0.268	0.816	33927	7.519	18258	2.734	15670	6.232	3521	2416

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: The table reports treatment effects on savings. Each column reports results from a separate regression of the dependent variable in the header on the four treatment indicators and a set of baseline controls. Standard errors, in parentheses, are heteroskedasticity robust.

Table 5: **Treatment Effects: Large Purchases**

VARIABLES	(1) Dummy any large purchase last 12 months	(2) Dummy bought land	(3) Dummy bought business asset	(4) Dummy bought gold	(5) Dummy bought house
Treat: Bank EWP	-0.0294	-0.00541	-0.0129	-0.0246	0.0125
	(0.0212)	(0.00980)	(0.0109)	(0.0156)	(0.00778)
Treat: Mobile EWP	0.0135	0.0160	-0.0111	0.00709	0.00578
	(0.0222)	(0.0111)	(0.0109)	(0.0170)	(0.00693)
Treat: Bank Only	0.0532	0.0144	-0.0115	0.0630*	-0.00471
	(0.0410)	(0.0200)	(0.0179)	(0.0338)	(0.0101)
Treat: Mobile Only	0.0136	-0.00203	0.0106	0.00173	0.00222
	(0.0272)	(0.0122)	(0.0153)	(0.0203)	(0.00785)
Observations	2,279	2,279	2,279	2,279	2,279
R-squared	0.038	0.025	0.019	0.032	0.052
Basic BL Controls	✓	✓	✓	✓	✓
Control Mean EL	0.168	0.0306	0.0402	0.0880	0.0115

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Notes: The table reports treatment effects on large purchases. Each column reports results from a separate regression of the dependent variable in the header on the four treatment indicators and a set of baseline controls. Standard errors, in parentheses, are heteroskedasticity robust.

Table 6: **Treatment Effects: Shock Mitigation**

VARIABLES	(1) Cut meals	(2) Unable to pay for medical expenses	(3) Cut meals or unable to pay for medical expenses	(4) Unable to pay for school expenses	(5) Unable to pay for legal expenses	(6) Number of shocks	(7) Would be able to save 5000 taka if needed (-)
Treat: Bank EWP	-0.0122	-0.0196	-0.0249	-0.00323	-0.00237	-0.0430	-0.0573
	(0.0139)	(0.0143)	(0.0185)	(0.0136)	(0.00502)	(0.0293)	(0.0525)
Treat: Mobile EWP	-0.0314**	-0.0302**	-0.0444**	-0.0105	-0.00327	-0.0666**	0.0257
	(0.0129)	(0.0136)	(0.0176)	(0.0132)	(0.00490)	(0.0289)	(0.0531)
Treat: Bank Only	-0.0159	-0.0123	-0.00428	-0.0252	0.000792	-0.0463	-0.124
	(0.0242)	(0.0250)	(0.0332)	(0.0178)	(0.00960)	(0.0446)	(0.0866)
Treat: Mobile Only	-0.0182	-0.00682	-0.00760	-0.0256*	-0.000707	-0.0494	0.0232
	(0.0163)	(0.0184)	(0.0235)	(0.0142)	(0.00686)	(0.0350)	(0.0659)
Observations	2,278	1,935	1,935	1,935	1,935	1,935	2,267
R-squared	0.039	0.043	0.038	0.027	0.039	0.042	0.102
Basic BL Controls	✓	✓	✓	✓	✓	✓	✓
Control Mean EL	0.0650	0.0643	0.106	0.0488	0.00665	0.175	1.712

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Notes: The table reports treatment effects on shock mitigation. Each column reports results from a separate regression of the dependent variable in the header on the four treatment indicators and a set of baseline controls. Column 6 is a sum of columns 1, 2, 4 and 5. Column 7 is a 4-point scale where 1 is definitely yes and 4 is definitely not. Standard errors, in parentheses, are heteroskedasticity robust.

Table 7: **Treatment Effects: Trust in Financial Institutions**

VARIABLES	(1) Confidence 1000 taka in bank for 1 month	(2) Confidence 5000 taka in bank for 1 year	(3) Confidence 1000 taka in bkash for 1 month	(4) Confidence 5000 taka in bkash for 1 year	(5) Banks act in customers' best interest	(6) Bkash acts in customers' best interest	(7) Would recommend bank to others	(8) Would recommend bkash to others
Treat: Bank EWP	0.306*	0.387**	0.246	0.178	0.0376**	0.0443*	0.0662***	0.0558*
	(0.174)	(0.161)	(0.204)	(0.191)	(0.0155)	(0.0252)	(0.0233)	(0.0287)
Treat: Mobile EWP	0.308*	0.332**	1.263***	1.122***	0.0150	0.140***	0.0384	0.169***
	(0.175)	(0.163)	(0.196)	(0.186)	(0.0170)	(0.0224)	(0.0242)	(0.0268)
Treat: Bank Only	0.274	0.203	0.594*	0.432	0.000455	0.0928***	-0.0548	0.0532
	(0.265)	(0.254)	(0.332)	(0.316)	(0.0260)	(0.0321)	(0.0424)	(0.0436)
Treat: Mobile Only	0.428**	0.412**	0.793***	0.606***	0.0217	0.114***	0.0505*	0.127***
	(0.199)	(0.187)	(0.229)	(0.219)	(0.0194)	(0.0266)	(0.0289)	(0.0322)
Observations	1,935	2,278	1,935	2,278	1,935	1,935	1,935	1,935
R-squared	0.077	0.087	0.106	0.098	0.041	0.073	0.054	0.091
Basic BL Controls	✓	✓	✓	✓	✓	✓	✓	✓
Control Mean EL	7.687	7.635	6.406	6.256	0.920	0.783	0.805	0.670

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Notes: The table reports treatment effects on financial capabilities. Each column reports results from a separate regression of the dependent variable in the header on the four treatment indicators and a set of baseline controls. Standard errors, in parentheses, are heteroskedasticity robust.

Table 8: **Treatment Effects: Work Satisfaction**

VARIABLES	(1) Overall job satis- faction	(2) Satisfaction with benefits	(3) Likelihood of promotion	(4) How often do you work overtime when offered
Treat: Bank EWP	0.182	-0.142	-0.0285	-0.185***
	(0.143)	(0.155)	(0.0658)	(0.0568)
Treat: Mobile EWP	0.346**	0.187	-0.0272	-0.0920
	(0.143)	(0.153)	(0.0661)	(0.0584)
Treat: Bank Only	0.550**	0.402	-0.141	-0.0303
	(0.231)	(0.254)	(0.117)	(0.0930)
Treat: Mobile Only	0.202	0.0163	-0.0473	-0.0952
	(0.173)	(0.182)	(0.0798)	(0.0719)
Observations	2,278	1,935	1,883	1,934
R-squared	0.089	0.092	0.116	0.066
Basic BL Controls	✓	✓	✓	✓
Control Mean EL	7.176	7.262	3.057	1.435

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: The table reports treatment effects on work satisfaction. Each column reports results from a separate regression of the dependent variable in the header on the four treatment indicators and a set of baseline controls. Columns 1 and 2 were asked on a ten-point scale where is the highest satisfaction. Column 3 was asked on a 5-point scale where 1 is always and 5 is never. Standard errors, in parentheses, are heteroskedasticity robust.

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