Learning to Navigate a New Financial Technology

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Motivation

- ▶ Unprecedented expansion in access to basic financial accounts and consumer financial products in past decade
  ⇒ 1.2bn gained access to a formal account (World Bank 2019)

- ▶ Significant overall benefits of greater financial inclusion
  (Callen et al 2019; Dupas et al 2018; Jack and Suri, 2016)

- ▶ But: consumer protection concerns as new financial products and technologies expanded to less experienced customer populations

- ▶ Intermediaries can profit from exploiting inexperienced customers
  (Campbell et al 2011, Anna 2022). Low trust, use of formal accounts (Bachas et al 2021).

- ▶ This paper: Is there learning-by-doing? Can learning-by-doing help mitigate risks to consumers, build trust, and stimulate product use?

Payroll Accounts

We introduce a simple financial technology, payroll accounts, in a population of largely unbanked factory workers in Bangladesh

Basic financial technology

- ▶ <u>Bank payroll accounts:</u> use existing banking infrastructure, but have limited functionality, potentially high social barriers
- ▶ <u>Mobile money payroll accounts:</u> more functionality, fewer social barriers, but more complex, scope for exploitation

Large financial inclusion potential

- ▶ 85% of employees in developing countries still receive cash wages
- ▶ Payroll accounts have clear benefits for employer and employee

Payroll accounts are currently being rolled out to millions of employees

- ▶ Buyers enforce wage transparency, labor standards
- ▶ Covid-19: efforts to phase out in-person cash transactions

Setting and Sample

Within-firm field experiment with 3,136 workers at two large factories in the garment manufacturing sector in Bangladesh

- ▶ Most study participants are female, migrant workers
    - ▶ workers remit, on average, 15% of monthly earnings
    - ▶ many hope to work 5-10 years to accumulate wealth
    - ▶ 73% have savings goal in mind when they start working
- ▶ Largely unbanked population with low financial experience

Ever used...	
Bank account	0.05
Mobile money account	0.21
Trust bank	0.62
Trust mobile money	0.38
Has savings	0.49
Has formal savings	0.28

Study Design and Data

Within-firm field experiment with 3,136 workers at two large factories in the garment manufacturing sector in Bangladesh

Identification challenge

▶ Selection into account ownership and use. Experiment needs to generate variation in both to identify "learning-by-doing"

Treatment conditions

1. Control group: status quo cash wage payments
2. Bank or mobile account + cash wage payments [access]
3. Bank or mobile account + direct deposit wage payments [active use]
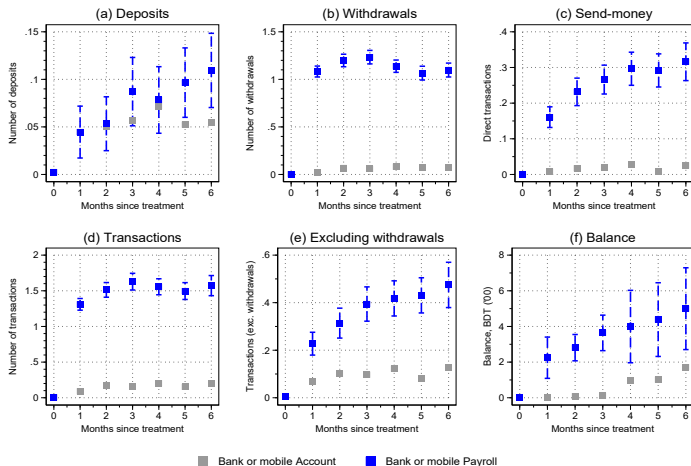
Learning outcomes

▶ Transactions without assistance
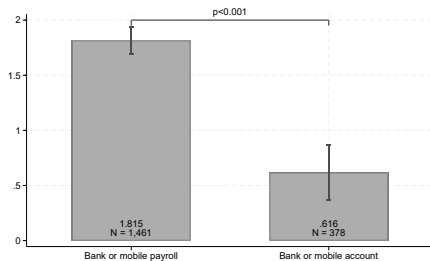▶ Direct transactions

Real effects: financial well-being outcomes

▶ Savings, consumption, remittances, shock-mitigation

Results: Impacts on Account Use


- Bank or mobile Account
- Bank or mobile Payroll

▶ To examine "learning-by-doing", payroll account treatment needs to incentivize interaction with the technology, active account use

Results: Learning I [Outside Transactions]

- ► <u>Endline:</u> payroll accounts group 58 pp more likely to make transactions without assistance (outside transactions) than accounts only group
- ► Suggests that active engagement with accounts overcomes some social barriers, at baseline 60% uncomfortable using branches, mobile agents

Results: Learning II [Transactions Without Intermediary]
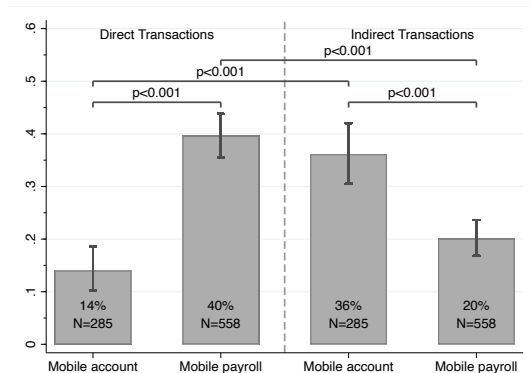
- ▶ <u>Endline:</u> Payroll accounts group is 42 pp more likely to make direct transactions than account only group

- ▶ <u>Note:</u> Total remittances remain constant. Decrease in intermediated transactions not due to more send-money transactions overall

Results: Savings, Consumption & Shocks

Table: Effects on Savings, Consumption & Shocks

	Has any savings (1)	Log total savings (2)	Log discretionary consumption (3)	Shocks index (4)
Bank or mobile payroll	0.0381**	0.509**	-0.135**	-0.0511**
	(0.0188)	(0.198)	(0.0632)	(0.0258)
Bank or mobile account	-0.0052	0.0729	-0.0786	-0.0487
	(0.0242)	(0.252)	(0.0793)	(0.0309)
Test: payroll = account	0.036	0.040	0.443	0.916
Observations	2376	2376	2376	2002
Mean control [endline]	0.815	7.519	8.466	0.169

- ▶ Large increase in savings at endline, only for payroll treatment
- ▶ Savings funded (in part) out of non-food, discretionary consumption
  - ▶ No impacts on food consumption; remittances, if anything, decrease
- ▶ Treatments decreased incidence of unmitigated shocks
  - ▶ Consistent with prior savings, MM literature (Dupas and Robinson 2013, Jack and Suri 2014)

Results: Trust in the Technology
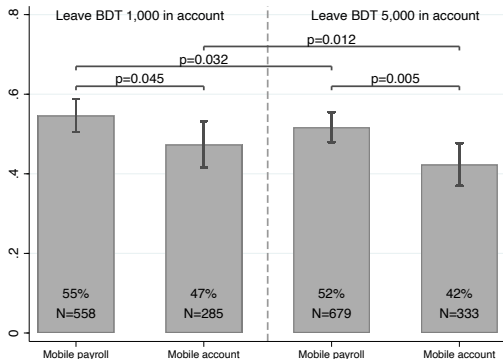
- ▶ Treatment incentivizes active use of technology, reduces costly mistakes, increases trust off very low base

Results: Who Learns to Use the Technology?

One might expect heterogeneity on range of baseline characteristics:

- ▶ Gender, household composition and control, financial literacy etc.
- ▶ Use machine-learning method of Chernozhukov et al (2018)

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Method detects heterogeneity in impact on key outcomes:

- ▶ Consumption (indicative of new savings)
- ▶ Person-to-person transfers, outside transactions (indicative of learning and improved consumer protection)

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Which traits are associated with large vs. small impacts?

- ▶ "Savers" and "Learners" largely disjoint groups of workers
- ▶ Female, low education, low financial control, low experience more likely to decrease consumption, less likely to make direct transactions
- ▶ Suggests that learning-by-doing insufficient for most marginalized groups from a consumer protection perspective

Can Consumer Learning Drive Out Misconduct? [Audit Study]

Indirect Transactions Lead to Illicit Fees (Overcharging)

- ▶ Does consumer learning reduce agent misconduct?
- ▶ Does this vary in markets with more sophisticated consumers?

The Audit Study

- ▶ Workers trained to ask for help with send-money transaction
- ▶ High-knowledge and low-knowledge script
- ▶ Neighborhoods differ in payroll account penetration

- ▶ Outcome of interest: How frequently do agents overcharge?

Results: Consumer Learning and Misconduct [Audit Study]

	Extra charge = 1	
	(1)	(2)
Low knowledge	0.444***	0.362***
	(0.107)	(0.117)
Low adoption area × Low skill		0.176***
		(0.053)
Worker, Week, Area fixed effects	X	X
Observations	454	454
Clusters (# areas)	24	24
R-squared	0.142	0.168
Mean Omitted	.02	.00
Test: Low Skill + Low Skill × Low Adoption Area = 0		< 0.001

- ▶ <u>High vs. Low knowledge script</u>: same customer 44pp less likely to be overcharged
- ▶ Effects relatively larger in markets with low account penetration (0.176pp)

Conclusion

- ▶ We introduce a simple financial technology, payroll accounts, in a financially inexperienced population
- ▶ Study consumer learning with experimental design that varies access and incentives to actively use accounts
- ▶ Those who use accounts more extensively
  - ▶ Learn to use accounts without assistance
  - ▶ Learn to avoid exploitation by commissions-motivated agents
- ▶ Benefits heterogeneous: gender, financial experience, financial control at baseline all matter
  - ⇒ Need to target consumer protection efforts toward these groups
- ▶ Suggestive evidence: consumer learning can drive out bad behavior of agents