Information Campaigns to Increase Mobile Banking Adoption in Ghana

Researchers:

Emma Riley

Abu Shonchoy

Sector(s): Finance

Sample: 15,000 bank clients

Target group: Adults

Outcome of interest: Technology adoption Savings/deposits

Intervention type: Financial literacy Nudges and reminders

AEA RCT registration number: AEARCT-0006275

□□□□□□□□ **:** Harvard Dataverse

Partner organization(s): Opportunity International of Ghana

Digital financial services like mobile banking can be a powerful tool to promote financial inclusion, especially for those living in rural areas or with limited access to banking. In Ghana, researchers worked with a bank that provides services to low-income customers with limited access to mainstream banking to evaluate the impact of sending pre-recorded informational voice calls and text messages on the adoption of mobile banking. Clients that received messages encouraging mobile banking were more likely to use mobile banking services and repay loans on time, while clients that received messages encouraging savings only had no measurable change in behavior.

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Digital financial services can reduce the high transaction costs of traveling to one's bank by providing account access directly to a user's mobile phone. This is especially true for people who live far from a banking institution, where the distance to the nearest bank can pose a barrier to financial inclusion. This has led to the proliferation of mobile money usage, where telecommunication firms offer digital banking services, person-to-person transfers, and payments via cell phone. In Sub-Saharan Africa, the percentage of adults with a mobile money account has nearly tripled over seven years, from 12 percent in 2014 to 33 percent by 2021. Newer digital financial service products are being built upon existing mobile money networks.

Recent studies have cited a lack of information and/or understanding as barriers to the take-up and utilization of new technologies. However, it is unclear whether providing information alone to potential clients will increase their utilization of new products. As digital financial services expand, identifying ways to support low-literacy and marginalized group integration into formal banking systems may offer new pathways to financial inclusion. Sending pre-recorded voice messages through an automated system (called interactive voice response (IVR)) may offer a relatively inexpensive way to reach those with low literacy. Can an interactive pre-recorded telephone campaign increase digital banking service utilization in Ghana? Additionally, might encouraging the use of mobile banking lead to a change in client savings habits or loan repayment?

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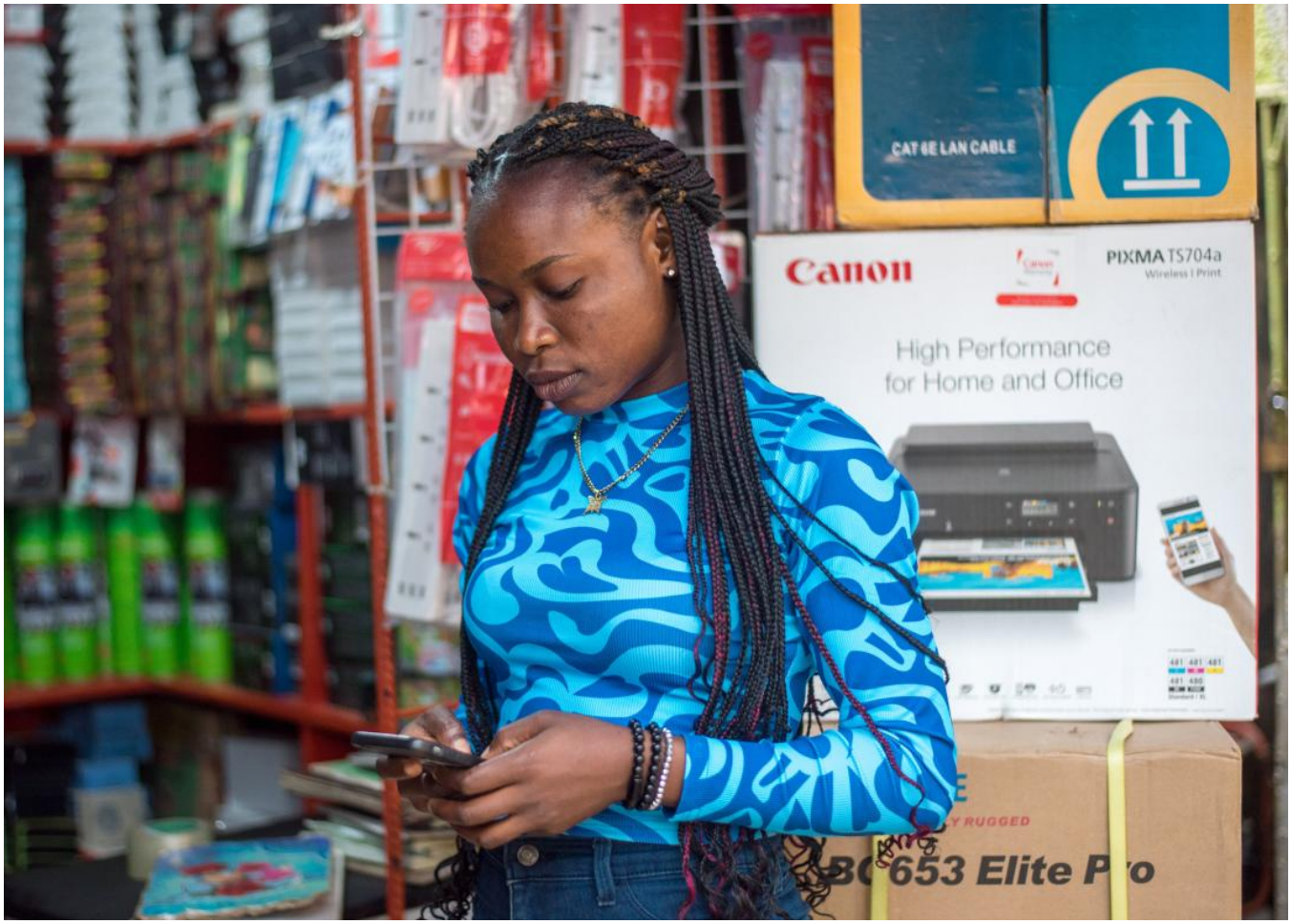
In Ghana, mobile money account usage increased from 39 percent in 2017 to 60 percent in 2021, though rural Ghanaian usage lags at 48 percent.[1] In the midst of the Covid-19 lockdowns, the government requested citizens limit their travel outside of work and home, and banks encouraged clients to not physically go to the branches. During this same time, banks saw late loan repayments increase from 10 percent to 30 percent. As such, the Covid-19 lockdown presented a good opportunity to introduce a new technological product that reduced social interaction while promoting healthy financial behavior.

Opportunity International Savings and Loans Limited (OISL) is a rural bank that offers loans and savings accounts, primarily to low-income Ghanaians who are excluded from mainstream banking. Through their mobile money wallet, users can make transactions for a fixed fee of 1 cedi (US$.16), compared to an average cost of 24 cedi (US$3.84) for round-trip travel to their bank. As digital financial services utilize the current cellular infrastructure, services do not require a smartphone or internet, making mobile banking much more accessible.

Participants in this study were clients of OISL who were registered for mobile banking, had not used it in the last month, and did not have more than US$1,700 in savings. On average these clients were 40 years old, had a savings account balance of about 300 cedis (US$50), and 29 percent had a loan at the beginning of the study.



Woman on cell phone in Nigeria.

Photo credit: Tolu Owoeye, Shutterstock.com

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Researchers partnered with OISL to conduct a randomized evaluation testing the impact of an IVR on mobile banking uptake in addition to loan and savings behavior.

Using administrative data from OISL, researchers narrowed the pool of clients through criteria such as recent account usage, registration for mobile banking, and savings account limits to generate a sample of 36,000 potential participants. From this group, 15,000 were randomly selected and placed into one of three groups:

1. *Mobile Banking IVR (5,000 clients)*: Clients in this group received a series of ten IVR phone calls from August to November 2020. If a client's first call was not answered, they received a second follow-up call three days later; clients could re-hear the message if they called back the same number. The ten unique messages spoke to the benefits and features of mobile banking and how to utilize the service. Additionally, the messages encouraged clients to save. Clients also received SMS text reminders of the information and detailed instructions on performing certain mobile banking transactions.
2. *Savings IVR (5,000 clients)*: Clients in this group received a series of ten IVR messages reminding and encouraging them to save, but the messages did not include the mobile banking component.
3. *Comparison (5,000 clients)*: Clients in the comparison group did not receive any messages.

Researchers used administrative records from OISL to collect high-frequency data on mobile banking transactions, savings account balances, and loan records during each month of the intervention (August to November 2020) and five months later, in April 2021. This data was complemented with a follow-up IVR survey asking those in the Mobile Banking IVR and Savings IVR groups about their saving behavior, bank visits, and mobile banking knowledge and use, though no one in the comparison group received the survey.

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On average across the four months of the study, OISL clients in the Mobile Banking IVR group increased their mobile banking usage and reduced late loan repayment, while there was no meaningful change in behavior from those in the Savings IVR group.

Mobile banking usage: On average across the four months of the study, clients in the Mobile Banking IVR were 6.3 percentage points more likely to make a mobile banking transaction relative to 2.4 percent of clients in the comparison group. Having received the Mobile Banking IVR nearly doubled the average number of transactions a month, from 0.075 in the comparison group to 0.15. Further, the value of transactions more than tripled from US$1.76 in the comparison group to US$6.4. Mobile Banking IVR clients made more withdrawals than transactions, though their average balance remained similar to the comparison group, suggesting they made more frequent withdrawals of smaller amounts relative to deposits.

The impact on mobile banking use, total value of transitions, and number of transactions was small at first and grew over time. This suggests some clients needed to hear multiple messages before taking up the service. Mobile banking usage declined after the intervention stopped, though clients in the Mobile Banking IVR were still twice as likely to use mobile banking relative to the comparison group. The Mobile Banking IVR impacts were similar across the study population, not concentrated within any particular subgroup. Clients in the Savings IVR group did not change their mobile banking use relative to the comparison group.

Financial behaviors: Neither clients in the Savings IVR nor Mobile Banking IVR group saved more relative to the comparison group. However, the clients that received the Mobile Banking IVR were 2.4 percentage points from a base of 30 percent late payments (an 8 percent increase) more likely to pay their loans on time. Additionally, there was no meaningful change in bank account usage, though clients reported a reduction in physical trips, which researchers take as suggestive that many clients substituted in-person visits for mobile banking transactions.

Overall, this study provides an example of how a large-scale IVR-based information campaign can effectively support technology adoption at a cost-effective price of US$.28 per month per customer. Further, digital financial services can benefit consumers by

reducing transaction costs associated with accessing banking services, especially in areas with transportation challenges and/or low banking presence, enabling greater financial inclusion. The lack of effect from the Savings IVR suggests that providing encouragement alone is not effective without the tools that enable savings and timely loan repayment. Though this study took place during a period when technological adoption was encouraged to reduce social interactions, researchers believe an increase in mobile banking use is likely to have persisted in line with global trends.

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1. The Global Findex Database 2021 should be cited as: Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, and Saniya Ansar. The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19. Washington, DC: World Bank, 2022. The data was collected in 2021, but the report was published in 2022.