# Information Provision via Mobile Phones to Increase Mobile Banking in Ghana

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**Sector(s):** Finance, Firms

**Fieldwork:** Viamo

**Sample:** 15,000 bank clients across Ghana

**Target group:** Adults

**Outcome of interest:** Credit balance/repayment Savings/deposits Take-up of program/social service/healthy behavior

**Intervention type:** Digital and mobile Information

**AEA RCT registration number:** AEARCTR-0006275

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**Research Papers:** Encouraging Digital Financial Technology Adoption during a Crisis: Experimental...

**Partner organization(s):** Opportunity International of Ghana, Christ Church Research Centre

Mobile banking could help people in low- and middle-income countries who live in remote areas more easily access banking services; however, people may be hesitant to take up mobile banking, as with many new technologies, due to lack of knowledge of the technology and clear instructions for how to use it. Researchers partnered with Opportunity International Savings and Loans Limited (OISL) to conduct a randomized evaluation to test the impact of high-frequency interactive voice response (IVR) calls on people's use of mobile banking services and their financial behaviors in Ghana. People who received the IVR calls were more likely to use mobile banking and make on-time loan repayments, increasing their access to subsequent loans; however, they were not more likely to save.

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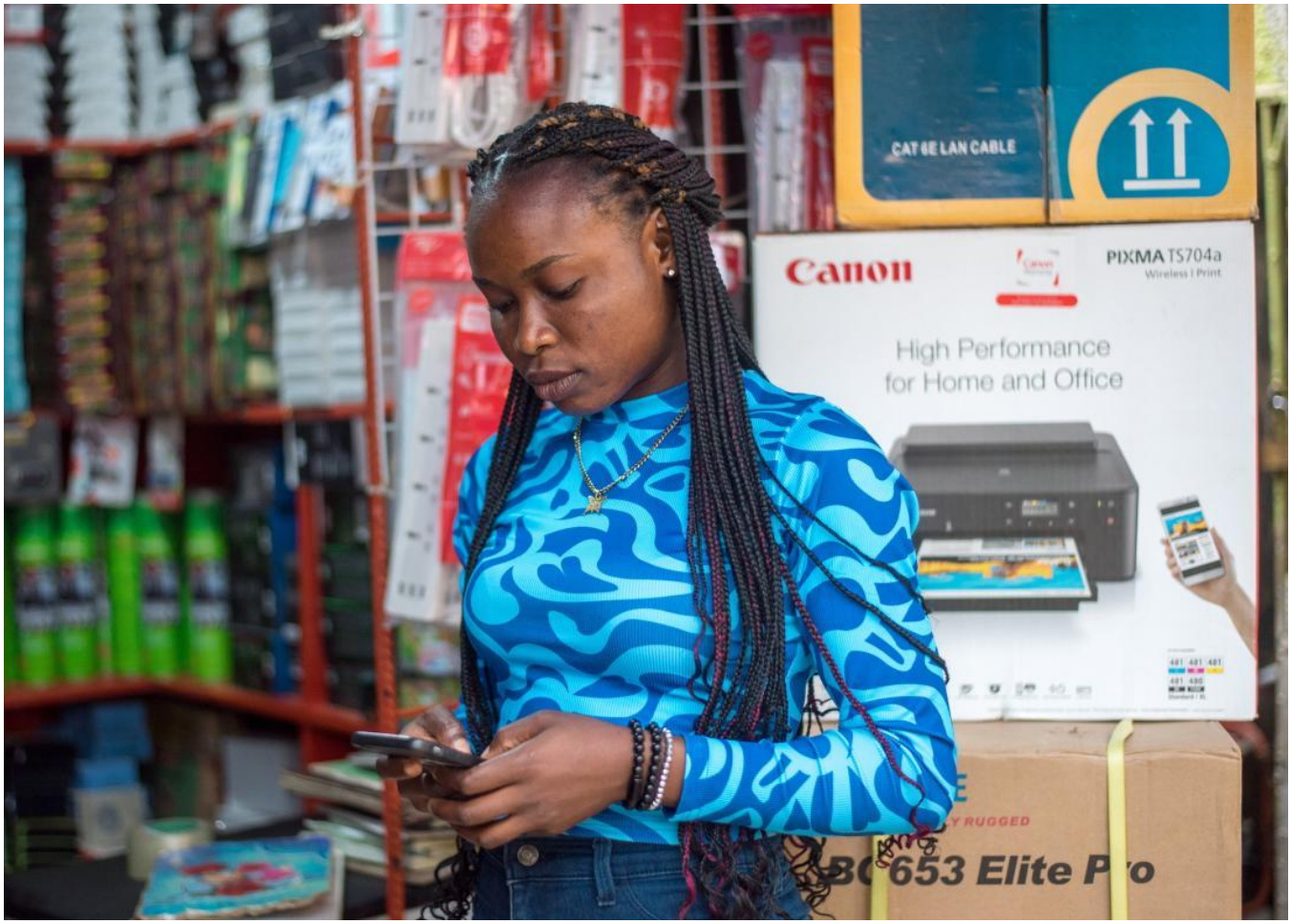
Access to banking services can help households access savings, enabling them to respond to unexpected shocks like the Covid-19 pandemic. However, many people in low- and middle-income countries face barriers such as long travel times to bank branches and high transaction costs, limiting their engagement with the banking system. Mobile banking services could offer a solution by linking people's bank accounts to their mobile phones, reducing the need for physical bank visits. However, people may be hesitant to take up mobile banking, as with many new technologies, due to limited knowledge of the technology and the absence of clear instructions for how to make transactions.

Dissemination of information through peer-to-peer learning is a common strategy to increase uptake of new technologies. However, this strategy is expensive and time consuming. An alternative strategy is harnessing mobile phones to reach large populations with information quickly; however, SMS campaigns have mixed success particularly in contexts with low literacy rates or when they lack engaging content. Can providing information through Interactive Voice Response (IVR) calls, a process of sending pre-recorded voice messages directly to individuals' mobile phones, encourage the adoption of mobile banking services and improve financial behaviors such as savings and loan repayment?

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This study took place in Ghana, a country where mobile money account ownership has increased in recent years, reaching 60 percent of adults in 2021, up from 13 percent in 2014. The increase was partly driven by innovation during the Covid-19 pandemic during which physical access to bank branches was restricted, making the need for remote banking solutions more salient. However, actual engagement with mobile banking has remained low, with only 37 percent of adults in Ghana using a mobile bank account to save money. One of the major providers of banking services to low-income and under-banked populations in Ghana is a microfinance organization called Opportunity International Savings and Loans Limited (OISL). OISL has 38 branches for 500,000 clients throughout all of Ghana, making it difficult for many clients to access banking services due to long travel times and high costs. The average travel time to a bank branch by public transport was fifty minutes each way with average travel costs of 24 cedis (US$2.12) in 2020 at the time of the study.

Participants in the study had a current account with OISL and were registered for mobile banking, but had not made a Mobile Banking transaction in the previous month. The average participant was forty years old and from locations throughout Ghana. Participants had an average savings balance of about 300 Cedis (US$50), though half had less than 11 Cedis (US$1.83) saved.




Woman on cell phone in Nigeria.

Photo credit: Tolu Owoeye, Shutterstock.com

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Researchers partnered with Opportunity International Savings and Loans Limited (OISL) to conduct a randomized evaluation to test the impact of high-frequency interactive voice response (IVR) calls on people's use of mobile banking services and other financial behaviors. Researchers randomly assigned 15,000 OISL clients to one of three groups:

1. *Mobile Banking IVR (5,000 clients):* This group received ten weekly IVR calls highlighting the benefits and features of mobile banking along with general advice on good financial behavior, such as saving and making loan repayments on time. Half of these calls were followed by SMS texts repeating the instructions for performing digital transactions.
2. *Savings IVR (5,000 clients):* This group received ten weekly IVR calls encouraging good financial behavior, such as saving and making loan repayments on time but without any information on mobile banking.
3. *Comparison (5,000 clients):* This group did not receive any IVR calls.

Researchers recorded the IVR calls in two local languages and English, and sent them to participants once a week from August to November 2020. Before, during, and after the intervention, researchers collected administrative records from OISL on all participants including data on transactions, saving account balances, and loan history. Researchers also conducted a phone survey through IVR immediately after the intervention ended. Clients responded to questions about their saving behavior, bank visits, and their use and knowledge of Mobile Banking using their phone keypad. Fifteen percent of participants answered at least one question in the phone survey.

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People who received the mobile banking IVR calls were more likely to use mobile banking, with the strongest effect on women and people above 40 years old. Receiving the savings IVR calls did not increase people's use of mobile banking. Neither IVR call encouraged people to save; however, people who received the mobile banking IVR calls were more likely to make on-time loan repayments and take out loans five months after the intervention.

*Use of mobile banking services:* Across the four months of the study, on average, 8.7 percent of clients who received the mobile banking IVR calls made at least one mobile banking transaction each month, a 6.3 percentage point increase from 2.4 percent in the comparison group (an over 250 percent increase). In addition, participants in the mobile banking IVR group made monthly mobile transactions about triple the value of those made by people who did not receive the messages, increasing the monthly transaction value from 11 Cedis (US$1.83) to about 40 Cedis (US$6.67). People who received the savings IVR message did not make more transactions than those in the comparison group, suggesting that information on the importance of saving and repaying loans is not enough to change behavior—provision of information on how to make a mobile transaction was critical to increasing mobile bank use. Five months after the intervention ended, 4.2 percent of people who had received the mobile banking IVR calls were still making a transaction once a month, a 1.3 percentage point increase from 2.8 percent of the comparison group (a 50 percent increase), demonstrating the lasting effects of the IVR messages on clients' behaviors.

*Effects on women and by age:* The effects of the IVR calls on women's use of mobile banking was slightly larger than the effect on men, which researchers posit may be because women were less likely to make mobile transactions prior to the start of the intervention than men. Similarly, older participants (over forty years old) who received the IVR calls were more likely to increase their use of mobile banking than younger participants, perhaps because they were more likely to listen to the messages than younger generations.

*Savings behavior:* Neither clients who received mobile banking or savings IVRs were more likely to save using their OISL accounts during the intervention or five months after the intervention.

*Loan repayment behavior:* Participants who received the mobile banking IVR calls were 2.4 percentage points less likely to have made a late loan repayment, compared to a 29.5 percent late repayment rate among clients in the comparison group (an 8

percent decrease). People who received the savings IVR calls did not increase their likelihood of making on-time payments compared to those in the comparison group. According to OISL staff, late repayments were common during the Covid-19 pandemic because clients were unable to travel regularly to the bank, hindering people from taking out new loans. People who received the mobile banking IVR calls were 1.9 percentage points more likely to have a loan five months after the end of the intervention compared to 17.2 percent in the comparison group (an 11 percent increase), demonstrating how mobile banking contributed to facilitating access to credit through easier loan repayment.

Researchers argue the IVR calls present a cost-effective approach to increasing people's use of mobile banking as the cost of an IVR message is similar to that of an SMS message. Due to the combination of human touch and practical guidance, IVR helped people adopt mobile banking services and reduced the burden on people to make costly trips to the bank.  OISL have continued to use IVR messages to inform their clients about their services