Draft Final Report

Can discounted withdrawal fees catalyse mobile money usage? Field experimental evidence from Gambia

Hamidou Jawara
Adama Touray
Fatoumata Singhateh
Lamin Jammeh

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Can Discounted Withdrawal Fees Catalyse Mobile Money Usage? A Field Experimental Evidence from Gambia

Baseline Report 2019

Jawara, Hamidou [1], Touray, Adama[1], Singhateh, Fatoumata[1], and Jammeh, Lamin [*1]

[1]University of The Gambia

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Abstract

This is a draft final project report on price subsidy and digital payments system in Gambia. Underutilization of financial products due to transaction cost or lack of information is an issue of huge policy relevance in developing countries. In this project, we used a field experiment to study whether subsidizing the prices of withdrawals charges of an mobile wallet combined with monthly reminders can encourage inactive wallet users to make more use of their wallets. The preliminary results indicate that this intervention increases just mildly the active use of a mobile money wallets. Interestingly, we also find that higher price subsidies do not motivate more usage than lower price subsidies, thus, implying the increase in information is the foci means via which the intervention catalyses usage.

Keywords: Digital finance, transaction cost, developing countries, Gambia.

JEL *classification:* D13, G21, O16, P34

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1 INTRODUCTION

1.1 Motivation and Context of the Study

Mobile money banking as a tool for financial inclusion is increasingly becoming popular in the developing world, particularly in Sub-Saharan Africa. Due to easy access to mobile phones than bank branches by the poor and low transaction cost, mobile money (or digital finance in general) is heralded as a sound tool that can substantially increase access to financial services by the poor (Kendall and Voorhies, 2014). Initially, it used to be popular only in East African countries such as Kenya where the revolution started with M-pesa, but now it is also becoming ubiquitous in Western Africa. Due to low access to financial services and high access to mobile phones, offering of financial services via mobile phones is heralded as an important tool that can revolutionize financial services adoption and usage in developing countries thereby fostering rapid financial inclusion. However, despite becoming rampant in many developing countries, the role of mobile money in revolutionizing formal financial account access and usage has so far been modest (Demirgüç-Kunt et al., 2017)

Due to low levels of financial inclusion in Gambia and the huge poverty levels in the country, mobile money banking is seen as a potential game changer in terms of stimulating financial inclusion and consequently catalyzing economic growth and development in the country. For instance, while the banking penetration rate is about 25% (Jaabi, 2017), the mobile phone penetration rate is about 67% (GSM, 2017), which is among the highest in Western Africa. This indicates that offering financial services via mobile technology offers an opportunity for broader financial inclusion in Gambia. In line with this, the first mobile money service was launched in 2016 by Qcell - one of the largest GSM operators in the country.

But despite its promise, the revolutionary potentials of mobile money could be limited by high marginal cost such as high cash-out or transaction fees usually associated with service. In the case of Gambia's biggest mobile money provider, QMoney, the cash-out fees currently charge are on average higher than what similar providers like Mpesa charges for withdrawals fees. These high cash-out fees could be a reason why the gains of mobile money in terms of revolutionizing financial access in Gambia have been modest. Moreover, evidence (See Karlan et al., 2014), has shown that high monetary cost has the potential to deter the poor from using financial services. In this regard, it is important to understand how responsive to price of cash-outs demand and use of mobile money is. This has important policy implication as it will highlight whether subsidizing withdrawal fees could be a viable tool to increase financial service access and use in Gambia via mobile money.

Therefore, in this project, we study whether subsidizing cash out fees could stimulate more usage of mobile money services. In other words, we study the responsiveness of usage of mobile money services to changes in price of cash-out fees. To this effect, we use a randomized field experiment where we randomly vary the cost of cash-out charges among some randomly selected clients of QMoney, a private mobile money provider. The clients are randomly assigned to one of three different withdrawals fees discount: 0% , 15% and 30%. We then study how the adoption of the new offer and usage of mobile money accounts varies across different withdrawal or cash-out fees subsidies. Thus, by experimentally varying one element of transaction fee (cash-out fees) we can determine how this is relevant for usage rates. The preliminary evidence we find is that price subsidies mildly increase in the usage of mobile wallets. In addition, we also find that higher price subsidies do not increase usage more than lower price subsidies. Given that our intervention also included calling the wallets in the treatment sample to remind them that their discounts are still active, implies that the mechanism through which the intervention affects usage is via information and not primary. However, since the intervention is still ongoing, the results must be interpreted with care.

1.2 Research Questions and Objectives

The primary objective of our study is to provide rigorous evidence on the use of digital payment systems and how they can be improved. Given our research objectives, we ask the following questions:

1. What is the impact of withdrawal fee discounts on usage of e-money accounts? Given that high monetary cost such as high cash-out fees can be a limitation to mobile money usage; it's important to examine whether the use of mobile money changes due to reduction in monetary cost.

2. What is the elasticity of mobile money usage to changes in price of cash-outs? The impact of cash-out pricing on demand and usage will depend on the elasticity of demand and usage. Thus, knowing the nature of the elasticity of mobile money account usage to variation in price of cash-outs will help to uncover the specific roles cash out fees play in the usage of mobile money accounts.

3. Third, Is the reduction in transaction cost a useful tool to promote digital finance access and usage in The Gambia?

2 MOTIVATION AND PRECEDENTS

2.1 Price vs Infromation - Is Mobile Money Too Expensive or Are Potential Users Misinformed?

In this experiment, we create exogenous variation in withdrawal fees to identify the effect of withdrawal subsidies on usage of mobile money services. Mobile money being a means of offering financial services at lower transaction cost than standard financial products like basic savings account (e.g. do not require any minimum balance and users can save on transportation cost), it is an attractive financial product for the poor. However, high withdrawal charges can inhibit its usage. Therefore, it is not far-fetched that high marginal cost such as withdrawal charges can be a constraint for using mobile money services; more so for the poor, who are usually the target of providers of such services.

Therefore, when withdrawal fees constraints are binding in that they affect the optimal choices of an individual in the decision to use mobile money ser-

vices, then, the expectation is that the easing of such a constraint via subsidies should motivate more mobile money account usage. That is we should expect to see a positive responsiveness of mobile account usage to a positive change in withdrawal fees. In other words, the elasticity parameter we are after should be greater than one and significant. Having said that, it is worth highlighting that even though our hypothesis that the elasticity parameter of interest should be elastic is reasonable, it is nonetheless possible to still get zero elasticity as related studies (Such as Karlan and Zinman, 2018) have found for saving yields. This will be the case if withdrawal fees constraints do not bind, which will mean other features of mobile money (e.g. lack of information) rather than price are more important influencers of account usage or that they are more salient that they render withdrawal fee discounts ineffective.

Accordingly, the main research hypothesis of interest in this study is that mobile money usage response to changes in price of withdrawal or cash-out fees. Therefore, the main outcomes we expect our intervention to impact in the short run are outcomes related to account usage such whether the wallets became active and cash-ins and cash-outs. Other outcomes that can be indirectly impacted are frequency of using accounts for other payments such as P2P transfers or bill payments. Despite services such as P2P transfers come with no additional cost, they can be made unattractive if high cash-out fees render the entire product unattractive. For this reason, these variables can also be impacted by a change in cash-out charges.

2.2 Literature Review

Given that pricing and design are paramount for the success of any privately offered product, especially a product that targets the poor in developing countries, there has recently been a growing interest to understand the responsiveness to price and design of various products usage or demand by the poor. For instance, in the context of health-related products like bednets and chlorine, studies on demand or usage responsiveness to price or "cost sharing" were carried out by Cohen et al. (2010) in Kenya and Ashraf et al. (2010) in Zambia; respectively. As among the first field experimental studies on this topic, these studies have been able to provide rigorous evidence on how the pricing of these products affect their demand and usage.

Similarly, in the financial inclusion literature, there has been a mounting number of studies in recent years to understand how the pricing of financial products affect their demand and usage. This started with studies by Banerjee and Duflo (2006), Mills et al. (2008), and Grinstein-Weiss et al. (2013) in the USA that looked at the impact of matching contributions on retirement saving and individual development accounts. Recently, there has been an increasing number of studies in developing countries context as well. Specifically, studies by Schaner (2015) in Kenya, and recentlyKast et al. (2018) in Chile, and Karlan and Zinman (2018) in the Philippines, all looked at the impact of an increase in savings yields on demand and usage of commitment saving accounts. However, despite studying similar financial products, these studies find mixed results on elasticity to yields of saving accounts. In particular, while Schaner (2015) finds a positive effect of saving yields on account usage by well-matched couples, Karlan and Zinman (2018) and Kast et al. (2018) didn't find a statistically significant impact of savings yield on demand and usage of savings accounts. In other words, they find that price elasticity of the saving accounts studied were not different from zero. In fact, in the study by Karlan and Zinman (2018), which unlike in the previous studies used "market-viable rates" in their experiment, they find that even the upper bound of elasticity estimates are less than 0.5. Therefore, the emerging evidence so far on this topic is inconclusive. Hence, for better policy recommendations, more evidence is required. Our study, even though not on savings yields, is one of those attempts. Moreover, we contribute to the evidence on access barriers to usage of digital payments and whether subsidies can catalyse usage.

Particularly, our project contributes to the growing literature from two standpoints: first, the current evidence is focused on the elasticity of savings yields and not much evidence on other aspects of saving such as transaction fees. Second, almost all the evidence that exist currently is based on commitment savings products. Thus, no evidence exists on the elasticity of usage of digital products like mobile money, which are now very popular in developing countries.

3 EXPERIMENTAL DESIGN

3.1 Context, experiment design, and escription of the intervention

Our experiment targets clients of a mobile money provider in Gambia who do not actively use their mobile money wallets. In Gambia, there are currently two GSM operators providing mobile money services, Qcell with QMoney and Africell with Africellmoney. But due to outreach and service reliability at the time of the start of the study, we partner with QMoney mobile money for the experiment. The QMoney mobile money account offers all the basic services associated with a standard financial account such as a basic savings account with a commercial bank. In particular, it enable users to deposit and withdraw funds from their account and use the account to send or receive transfers from others including bill payments. Like any electronic wallet, the QMoney mobile money account provides access to electronic money that is exchangeable (at a rate of one to one) to physical money at any time. It doesn't cost anything to exchange cash into e-money (i.e. cash-ins) but it cost something to exchange e-money into cash (be it cash-out or bill payments). Among the fundamental features of the product are cash-ins and cash-outs; hence, the pricing of these features should also affect the desirability and usage of the technology. In this experiment, we focus on cash-out charges for two reasons: first, for QMoney users it is currently the most expensive aspect of the product; thus, it has direct impacts on usage – our main outcome of interest. Second, cash-outs also affect the attractiveness of the entire product as it affects liquidity. Specifically, high cash-out fees mean higher price for liquidity and for users that care about this feature of the product it might limit their usage of the technology. Therefore, by subsidizing withdrawal fees, we expect the use of accounts by beneficiaries to increase.

In implementing the experiment, first, we identify inactive wallets from QMoney mobile wallet platform; inactive clients are clients that have not used their wallet for any transaction three months before the start of the project, i.e. between June 1st and August 31st 2018. Second, after we identify these wallets, they are assigned to one of three experimental arms: a control arm consisting of participants that will not receive any of withdrawal discounts and two treatment arms where participants will receive one of two withdrawal fee discounts; a withdrawal

fee discount of 15% or 30%. The withdrawal fees discounts will be offered for just 6 months, which has been communicated to all clients. The randomization of participants to each arm was done at the individual wallet level. Hence, after the population of the inactive wallets on the QMoney platform was determined, a random number of the wallets were selected for inclusion into the study. Then, a calling exercise was undertaken to determine the address and willingness to participate of the owners of the selected wallets. Upon conclusion of the calling exercise, a list of successful calls was developed and interview of participants on this list followed. Hence, the list of all successful interviews became the experimental sample, which was used to select wallets into treatment and control groups using STATA. Specifically, 42% of participants in the experimental sample are assigned to the control arm and the rest to treatment arms at the rate of 1/2 to each arm.

But before the randomized assignment of participants to the different experimental arms is implemented, a baseline survey of the eligible participants is necessary; it allows for the collection of information on the experimental sample that can be used to check the for balance of observed characteristics before the intervention. In this regard, our baseline survey was meant to collect information on the clients' socio-economic characteristics including basic information about their financial behaviour such as whether they own other financial products like credit or saving with a commercial bank and their savings habits. Additionally, a module on hypothetical time discounting for time preferences elicitation was included. After the completion of the baseline survey and the assignment of wallets into treatment and control, owners of wallets selected to be in the treatment group received SMS from QMoney followed by a call from the researchers inviting them to accept the new offers received. Upon acceptance of the offer, i.e. reveal their willingness to take up, the discounted withdrawals on their accounts are applied immediately. The discounts are payable at the end of every month and by QMoney.

Once the intervention is rolled-out, we plan to carry out our first follow-up in 5 to 6 months; depending on the availability of funds, further rounds of follow-ups could be done to assess whether the intervention affect household welfare of participants. The first follow-up survey will collect information on household characteristics and their perception about the withdrawal discounts. This survey

will complement the information on the usage of the accounts that will come from the administrative data of QMoney. This information will allow us to make a deeper analysis of the usage of the accounts.

Therefore, by randomly assigning eligible participants or clients to any of these experimental groups with equal probability, we will generate an exogenous variation in withdrawal or cash-out fees that we can use to identify how usage response to subsidized price of withdrawals.

3.2 Randomization Units and selection of sample

We target inactive clients on Qodoo mobile money platform; inactivity is determined by whether a client uses an account regularly or not. In particular, we focus on clients that have not made in any transaction with their wallet in the three months before our intervention. Thus, we are hypothesizing that high transaction fees could be among the reasons for low account usage among these clients. Therefore, by exposing them to withdrawal subsidies, we will give them an incentive to use their accounts more often. Simple random assignment of selected participants into control and treatment arms was done using STATA.

The required sample size was determined before the baseline survey using power calculations and pre-intervention data on the main outcome indicators interest for the inactive users of the Qodoo wallet. The focus was on two main measures of outcome: (1) Average monthly cash-ins of a wallet and (2) average monthly Net balance of a wallet. Hence, a client is regarded inactive when she has not used her wallet for any transaction 3 months before the start of this study, i.e. before 1st September 2018. Before the baseline, the sample size was determining using power calculations and assuming an effect size of 0.135 on cash-ins and net wallet balance. The power calculations done after the baseline survey indicated that with a sample size of 1014 observations, can still detect effect sizes less than 0.20, which is acceptable.

4 DATA SOURCES

4.1 Baseline Survey

4.1.1 Baseline Survey and Start of the Intervention

4.1.2 General Description

The survey targeted registered inactive wallets on the QMoney platform. The definition of inactivity adopted is based on the QMoney definition, which is wallets not used for any transaction for three months. Therefore, in our case, the target sample consist of all wallets that between June and August 2018 were inactive. To select the evaluation sample from the population of such wallets on the QMoney platform, a list of all inactive users were requested and received from QMoney. We used this list to randomly select 2625 wallets to be in our evaluation sample.

Given that the list of the eligible population that we received from QMoney had information on just the number associated with a wallet and not the name or address of the user of the wallet, it was suggested that we call the numbers to confirm the names and addresses of the wallet holders; the explanation from QMoney on this is that a number link to a mobile money wallet is also used as a regular phone number by the owner. Due to high demand for numbers, a number is recycled if it is inactive for three months. If a number is recycled, both the name and address of the owner could be different from what it is in the database of the mobile money provide; such information is usually not updated. Therefore, our baseline survey was divided into two stages; in the first stage, a calling exercise was done to confirm the addresses and names of holders of the wallets in the evaluation sample. This calling exercise started with random assignment of 154 numbers to call in 3 days to each enumerator. In the second phase, interviews with the wallet holders reached in the first stage were conducted.

At the end of the first calling exercise and even after some interviews were conducted, it came to our noticed that the list provided to us by QMoney had wallets that were actually active wallets; this was caused by the fact that when the initial list of inactive wallets was being prepared, some transactions were not considered. Given that a wallet could be inactive for one transaction (e.g. bank transfer) but active with regards to others (e.g. cash-ins), the failure to

account for all transaction created the problem. As our study targets just inactive wallets, we had to fix t this problem before proceeding with the data collection. Therefore, to eliminate the active number in the list, we did the following : first, we requested for data on all transaction from QMoney and identified wallets that were, in terms of cash-ins or cash-outs, inactive. Second, we merged the list from step one with the list of active wallets for all the other transactions (i.e. bank to wallet transfer, bill payment, buying airtime, P2P transfer). Finally, when a wallet is found to be inactive for cash-ins and cash-outs but active for the other transactions, the wallet is eliminated from the initial list. Through this algorithm, about 900 wallets in the initial list were found to be active, which were discarded from the first list. Finally, about 8000 numbers were randomly selected from the new list. [1] Due to these changes, the list of wallet holders to be contacted by each enumerator changed from 154 to about 572 wallets. The contacting of wallets in the new list lasted for three days and the enumerators were able to successfully reach a significant number of wallet holders for interview. Before the interviews, successfully contacted wallet holders were sorted according to region, and assignment of wallets to enumerators for interview was done based on proximity, i.e. each enumerator was given a list of wallet holders in the same area; this was done to ensure that the enumerators do not have to travel back and forth to the same area. After the assignment of questionnaires to the enumerators was completed, interviews started the next day.

Aside the challenge discussed in the preceding paragraph, two other challenges faced were: (i) a lot of users identified in the first stage as registered clients and interested in participating in the study, were found to be actually unregistered and (ii) some of interviewees that have initially shown interest in the study later became not interested. Due to these latter challenges, we had to extend the duration of the data collection exercise; this helped us to make more successful interviews. Notwithstanding the successful address of the challenges, it was still difficult to reach our target sample size of 2625 wallets. But as we argue in section 5.1.1, these shortcomings will not have a significant impact on the study in terms of power. Therefore, overall, the data collection can be regarded as successful

[1] the expansion of the second list beyond our target sample is motivated by the experience from the previous calling exercise that a lot of the holders of the wallets in the initial list consist were not reachable. Therefore, by expanding the list, we are able to easily replace wallets the new list when they are not reachable.

as the number of successful interviews made was substantial and we had a very good response rate.

4.1.3 Geographical Coverage and Enumerators Selection and Distribution

Since QMoney services are available nationwide and respondents were selected via a random sample from the population of inactive wallets on the QMoney platform, the survey was nationwide. However, the holders of most of the selected wallets (about 50 percent) are residence of the urban areas of The Gambia (i.e. The Greater Banjul area- Banjul, Kanifing Municipal Council and some part of West Coast region) and the other 50 percent are residence of the rural areas of The Gambia (i.e. North Bank Region, Central River Region, Lower River Region and Upper River Region, and some part of West Coast Region).

For the baseline survey, initially, 17 enumerators and 4 supervisors were trained and used. However, after the first calling exercise, about 3 enumerators drop-out, thus, leaving us with 14 enumerators. The 14 enumerators were tasked to administer all the interviews. As the survey is nationwide, all five regions of the country (WCR, LRR, NBR, CRR, and URR) plus the two municipalities (KMC and BJL) were covered. The number of enumerators sent to a region or municipality depended on the number of QMoney inactive wallet holders that are reachable in that region or municipality. Hence, in terms of the target sample, 5 enumerators were sent to the biggest region and municipality (i.e. KMC and WCR). For the remaining regions or municipality (LRR, NBR, CRR, URR, and BJL), an enumerator was sent to each. Given that in LRR there were few inactive wallet holders, the enumerator that covered BJL also covered LRR.

Before the start of the survey, two days training of enumerators on usage of data collection tool and administering of questionnaire was carried out. The first day of the training focused on making sure that enumerators and supervisors understand the rationale of the study and also going through the entire questionnaire with them to ensure that they understand every module and question on it. The second day of the training was divided into two parts. For the first part, a simple test was given to the participants that gauged their understanding of the lessons of the first day. After that, a general review of the first day was done, and training on how to use the data collection tool was done. The second part

of day two, then, focused on simulation exercises to foster better understanding of both the software and the questionnaire. The simulations exercises were done in both pairs and in groups.

Before starting the survey, a pre-test of the questionnaire was also done. To this effect, inactive wallets outside the evaluation sample were used. Specifically, we randomly selected about 34 clients in the sampling frame. Therefore, each enumerator was assigned two respondents to interview. Hence, the pre-test lasted for a day. No major issues regarding the questionnaire came up during the pre-test. The minors issues that came up were issues related to the use of CAPI tool. The identified issues were all addressed before the beginning of the survey.

4.1.4 Modules Covered and Data Collection Tool

Baseline Questionnaire comprises of six (6) Modules: Individual and Household Characteristics, Mobile Money, Financial Access and Literacy, Time Preference (two modules to capture time inconsistency and present bias), Risk and Savings Behaviour. The individual and household characteristics module has 32 questions covering demographic, income, and some basic household characteristics. The module on mobile money has 20 questions covering the services used as well as the frequency of usage of those services; the main services considered are: Bill payments, transfers, and buying air time. Financial access and literacy part comprise of 22 questions covering both access to finance and the level of financial literacy of the wallet holder. In collecting information on access to finance, we focus on access to credit and savings. The financial literacy module collected information on the the wallet holder's understanding of basic financial concepts like inflation, ability to do basic numeracy skills like calculating interest rates, as well as his/her financial attitudes. Both time preferences modules comprises of 3 questions to assess, respectively, time inconsistency and present bias of respondents. And finally, the risk and savings behaviour module consist of 5 questions of which two assess the risk attitude of the respondent and 3 assess the respondents savings behaviour. The risk attitude questions collected information on respondents generalize perception of risk and their understanding of risk diversification. The generalize perception of risk question asked the respondents to rate themselves on their willingness to take risk. The risk diversification asked the respondents to a make choice between investing in one business or investing

in multiple businesses.

For the data collection, we used a CAPI data collection tool called Survey Solutions. Thus, the enumerators were provided with android tablets to conduct interviews using the survey solution interviewer app. During the survey, all completed forms are uploaded onto the survey solution platform daily for the supervisors to vet before they are approved. To ensure quality and consistency of the data collected, two headquarters (HQ) users also vet all the approved forms from the supervisors daily; these checks and balances were instituted to increase the quality of the data collected.

4.2 Administrative Data

The administrative data is provided by QMoney on a monthly basis. The data contains the outcome variables capturing the following transactions: cash-outs, cash-ins, bills payment and merchant payment. All transactions made by the wallet in the evaluation in relation to aforementioned items are sent to us monthly. The data is used to generate outcome indicators reported here in three forms: total amount of the transaction, average amount of the transaction and number of times the wallet is used for that transaction. In additions to these variables, we also generated two other variables from the administrative data, namely; (1) an indicator variable of whether a wallet was active or not, which is one if the wallet has been used for any of the highlighted transactions once in the last two months (note that the definition of activeness in the baseline data was three months) and (b) a turnover variable to capture transaction volume, which is the sum of all transactions that were done with the wallet. The data we received has two waves of post treatment data (i.e. Jan-Feb and Feb-Mar) and two waves for the pretreatment as well (i.e. July-August and October). We used the data for October and August to check whether the wallets became active when the calling exercise started and before the intervention. We found that the just two wallets were active in this period and they were dropped. Then the administrative data was merged with the baseline data for the analysis.

5 APPLICATION AND RESULTS

5.1 Descriptive Statistics

5.1.1 Baseline Survey

The baseline data comes from the baseline survey that was conducted between 26th November 2018 and 23rd January 2019. The total number of inactive wallets holders successfully interviewed in the baseline is about 1014 wallet holders. About 58 percent of the evaluation sample are assigned to receive the withdrawal discounts and 42 percent did not. In this subsection, we discuss the main results from the baseline data using summary statistics on observable characteristics of the holders in the evaluation sample, as well as, reporting on similarity in observed characteristics between wallet holders in the control group and those in the treatment group.

Description of the basic characteristics of the inactive wallet holders in the experimental sample are reported in Table 1. The results show that the inactive wallet holders are composed of mainly young people as the average age in the sample is about 34 years. A large proportion of the inactive wallet holders in the evaluation sample (more than 80%) are males; thus, there is a substantial gender difference in the sample, which could extend to the population of mobile money users. Many of the holders are either married or not married, but the proportion of married holders is (about 58%) higher. Many of the inactive wallet holders are not head of their household; however, the difference between is not that substantial. The inactive wallet holders are living in households with an average of 11 members. Majority of the inactive clients (about 83 %) reported that they have been with QMoney for more than a year. A large proportion of the inactive users have have been to school; about 91 percent have reported that they are educated. Hence, the low usage of wallets does not seem to be correlated with lack of education. An interesting finding is that, in terms of our subjective measure of poverty, the inactive clients of the mobile money services do not seem very poor. For example, the proportion of inactive wallet holders living in a household with piped water as the main source of drinking water is about 86 percent, which is higher than the national proportion of about 47 percent (GBOS, 2017). Also, just a small proportion of the clients live in a household where the main material of the floor is Sand or Vinyl. Just a very few proportion (about

18 percent) of the target group reported that they are poor relative to most households in their community. Therefore, put together, poverty does not seem to be a factor why the inactive clients are not using their accounts. Regarding trust of the financial provider, the results indicate that the client have a high level of trust of the provider. In particular, about 98 percent of the inactive users in the evaluation sample have reported they believe that their money is safe with QMoney. Among the few that reported that they don't think their money is safe with QMoney, most of the distrust is motivated by lack of information about the service.

Checking if the inactive wallets holders are credit constraint, the results indicate that only 16 percent of them have requested a loan in the last 12 months and the main reason of not requesting for a loan is not needing it. A substantial amount of the inactive clients have access to a bank account; just about 36% of the respondent reported not having a bank account. Ownership of ATM cards among clients with bank accounts is about 32%. For inactive wallet holders with bank accounts, the primary usage of the accounts is for savings; about 95 percent reported that they use their bank accounts mainly for savings. A significant number of the inactive wallet holders do also use alternative means of savings, i.e. savings via means different from ownership of bank accounts; for instance, about 58 percent have reported that they do keep money in the household or in a cash box. Regarding financial literacy, the result shows that, even though a large proportion of the clients have a basic understanding of inflation and basic numeracy skills (not surprising given a significant proportion are educated), still a significant number of the respondents lack such understanding or skills; for example, more than 40 percent do not understand inflation. Regarding preference for risk, the results indicate that most of the inactive wallet holders are risk averse, but a substantial proportion (about 40%) do prefer taking risk.[2].

A test of balance of individual and household characteristics of wallet holders in the control group and those in the treatment group, using a simple t-test, are reported in the fourth column of Table 2. Also shown in the table is the mean and standard deviation of each covariate for each group. The results show that, with

[2]The measure of risk averseness is computed from the risk question that asked respondent to rate their willingness to take risk using a scale between 0 and 10. Therefore, all those that rated themselves below 5, 5, and above 5 are, respectively, regarded as risk averse, neutral, and lover

the exception of the proportion of wallet holders that attended school and proportion that own a formal bank account, which are, respectively, lower and higher for the treatment group and mildly significant, evidence exists that the respondents in the two groups are similar in their observable characteristics. Thus, as expected randomization succeed in making the two group similar in their characteristics at baseline. Also reported in Table 2, is the F-test for a joint significance of the covariates in predicting the probability of receiving treatment. The results imply that the covariates are jointly insignificant in predicting treatment status. Thus, the balance of observable characteristics is obtained. Reported in Table **??** are the average of the covariates for wallet holders in the two treatment groups (i.e either receiving the 15% or 30% withdrawal charges discount). Like in Table 2, the results from the t-test of difference in means are reported in last column of the table. Therefore, we see that except for three observable characteristics (Gender, number of assets own, and income from wage employment as primary income source), all the covariates are statistically similar for inactive wallet holders in two groups. The results of the F-test reported in the Table **??** imply that the observable covariates are also irrelevant in determining who receives a 15 percent or 30 percent subsidy on withdrawal charges. In Table 4, we report the results from the test of difference in average covariates between wallet holders in each treatment group and wallet holders in the control group. The results from this exercise indicate that generally the observable characteristics of inactive wallet holders in the different treatment arms are similar to those in the control arm; in particular, except for two indicators (whether the individual has gone to school or not and the main material for the floor of the individual's household dwelling) all characteristics are statistically similar for the individuals in the two treatment arms and those in the control arm. In this regard, the probability of receiving one of the two withdrawal subsidies can be considered as random; the results from the F-test on joint significance reinforces this conclusion.

Notice that the sample size reported in this section is less than the target sample size of 2625 respondents. This come from the fact that due to the challenges highlighted in section 4.1.2 and time constraints, we had to discontinue the baseline data collection without reaching the target sample, which was based on getting a 0.135 effect size on the holder's net account balance. [3] Given the

[3]Note that this sample size accounts for 44% of non-response. Thus, the actual target sample

implication this could have on the power of the study to detect the effect size we are after, we had to redo our power analysis using the new sample size of 1012 wallets. We find that, except for net wallet balance, for all the other indicators, the new sample size still provides a power of 0.80 to detect an effect size of 0.135. For the net account balance, with a 0.80 power, the study detect just effect sizes of 0.20 and above. Even though the change in effect size for net account balance is substantial, it is still possible to detect an acceptable level of effect size. Hence, relying on 1012 successful interviews to evaluate our intervention affects, with regards to power, only the net account balance indicator. In addition, the fact that up to about 60% of the respondents successfully contacted were willing to participate in the study, implies that we have a very good response rate.

5.1.2 Administrative Data

The descriptive statistics of the administrative data are reported in table 4. Between January 26th and April 26th 2019, about 7 percent of the evaluation sample became active. If considered by group, about 6 percent of the control group became active while 7 percent of the pooled treatment became active. However, the rate of activeness is higher for treatment 1 (about 9 percent) relative to treatment 2 (about 5 percent); this result is strange given that the subsidy is higher for wallets in treatment 2 than treatment 1.

The average turnover in the overall sample for the first three months is GMD 240 (about 6 dollars). The turnover for the active wallets in the control group is about GMD 243 (about 5.7 dollars) and about GMD 223.8 (about 4.7 dollars) in the pooled treatment. The level of transaction volume is substantially higher for treatment 2 (about GMD 286 or 6 dollars) than it is for treatment 1 (about GMD 189 or 3.5 dolloars). Therefore, treatment 2 has the highest mean turnover even though the rate of activeness in this group much lower. Note that when we focus on just the active group, turnover is substantially higher. In particular, the mean turnover for the active group is about 7056 (about 144 dolloars per month). The variability in mean turnover is quite substantial.

For cash ins, the average total cash-in in the three months for wallets in the treatment group is about GMD 128 and it is about GMD 118 for the control group, but for the active wallets this is about GMD 885 and GMD 1120, respec-

size is 1798 wallets.

tively. The number of cash-ins is also higher for the control group. Specifically, the average number of cash-in the evaluation sample is 0.05 times while it is 0.11 and 0.10, respectively for the control and pooled treatment. When we focus on just the active users, it is about 0 times in the overall sample. Regarding cash-out, which is the indicator directly affected by the withdrawal subsidy, the average cash out in the overall sample is about GMD 56 and for the active group it is GMD 977. The variability in cash-out is substantial; variability in average cash-out in the evaluation sample is about GMD 532 . For number of cash-outs, it is about 0.05 times in the evaluation sample with a variability of 0.3 times. Number of cash-out by wallets in the pooled treatment group is higher than those in the control group. Unsurprisingly, cash-out is substantially higher for the wallets receiving the biggest subsidy. For bill payments, which involves using a wallet for buying airtime or buying electricity KWh, the average amount spent on telephone and electricity bills is about GMD 9.00 in the evaluation sample. The average bill pay is much more higher for wallets in the control group than wallets in any of the treatment arms. Specifically, the average amount of bills paid with treated wallets is about GMD 9 and it is about GMD 18. For the active group, mean bills paid for the wallets is GMD 422 and GMD 25, respectively. Thus, the variability in bill payment in the evaluation sample is quite substantial. The number of times a wallet is used for bill payments is also substantially higher for the control group. For the two treatments, the mean bills paid with a wallet is higher for wallets in treatment 1. The table also shows that not many of the wallets are used for settling merchant payments. In the evaluation sample, the average number of times a wallet is used for merchant payment is about 0.006 times. Thus, this element of the wallet is hugely underutilized. The summary statistics by month is reported in table 4a, 4b, and 4c.

5.2 Preliminary Experimental Results

Table 5 presents the results on from the estimation of average treatment effects (ATT) using the first three waves of the monthly administrative data; the admin. data is the main source of data for the outcome variables of interest. The results indicate that the intervention increases the proportion of active wallets by about 1.1%. In other words, about 1.1% more wallets in the treatment than in the control group became in three months active. Column 3 and 4 of the

table indicates that the difference in the proportion active between control and treatment 1 and treatment 2 is higher for treatment 1. Specifically, proportion of active wallets is about 2.4% higher for treatment 1 while it is less 1 percent higher for treatment two. Thus, the intervention seems to increase activeness more in the first treatment than in the second treatment. As mentioned in the preceding graph, given that the main aspect of the intervention is discounting of prices of withdrawals, this result is surprising. However, given the price discount is combine with a monthly telephone call reminder, it could be the increase in information that is deriving the results rather than the discount itself. Having said that, it is important to note that intervention is still ongoing and perhaps at the end of the intervention period these results might change.

Regarding impact of the intervention on turnover, the average mean turnover for the control, as reported in table 5, is about GMD 244. Average mean turnover for wallets in the pooled treatment is about GMD 16 lower than in the control. But, the average mean turnover is GMD 43 higher for the wallets in treatment 2 than in the control group. The average turnover is substantially lower (about GMD 92) for wallets in treatment 1 than in the control group. The results further highlight that the wallets in the control group have a higher (about GMD 11 more) mean total cashin compared to wallets in the pooled treatment. However, the mean difference in cashin between wallets in the control and in treatment 2 is positive indicating that average total cash-out of the latter group is about GMD 26 higher. However, the differences are not statistically significant.

Contrary to the cash-in, the average total cash out is higher for both pooled treatment and the individual treatment groups compared to the control group. But the mean number of cash-outs is lower for the treatment 1 and mildly higher for the pooled treatment than for the control group. Thus, despite the effect on total cash-out being positive for all the treatment sub-samples, the effect on number of cash-out is mixed. Furthermore, the results imply that the intervention increases cash-outs, but, the effect, like all the treatment effect estimates, is not also statistically significant. The effect of the intervention on Bill and Merchant payment (i.e. using the wallet to make payment in shops) are negatives and statistically insignificant. Thus, the intervention does not seem to increase the usage of wallets for other payments such as buying airtime, electricity units, and paying in shops. Again, it is important to view these results with care as the

intervention is still ongoing.

6 CONCLUSION AND POLICY RECOMMENDATION

Access to digital financial services in developing countries as a means for broader financial inclusion continue to be an issue of huge policy relevance. One of the things that inhibit the use of such services is high transaction cost and lack of information. In this study, we aimed at providing evidence on whether discounting price of withdrawals will encourage usage of mobile money wallets. To this end, we partner with a private mobile money provider in Gambia to pilot this experiment, which involves subsidizing cash-out fees of a random group of inactive wallet holders and study if this changes their usage behaviour. Using preliminary data, we find evidence that price subsidy does mildly make wallets more active but the effect is not statistically significant. Moreover, we find that more wallets in the group receiving the lesser price subsidy than those receiving the bigger price subsidy became active. Hence, while price of mobile money services is probably a constraint, our results indicate that they may not the main barrier to usage of the services. Meaningful discounts increase the usage of the wallets for other transactions just marginally. Moreover, the fact the higher of the two discounts did not increase usage more than the lower discount indicates that the channel through which the experiment operated was information, salience and awareness rather than price; even if our results are very preliminary and therefore do not account for full impact. The information element come from the fact the wallets are reminded about their discounts every month via a telephone call.

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Table 1: Descriptive Statistics: Baseline Survey

	(1) Mean	(2) Min	(3) Max	(4) SD	(5) Kurtosis	(6) N
Age	33.47	13	99	11.74	6.71	1014
Gender	1.82	1	2	0.39	3.67	1014
Married	0.58	0	1	0.49	1.12	1014
Educated	1.09	1	2	0.29	9.13	1014
Household Head	1.55	1	2	0.50	1.04	1014
Household size	10.54	1	99	8.84	43.00	1012
Poor	0.18	0	1	0.38	3.80	1014
Registration	0.84	0	1	0.37	4.46	1014
Bank account	1.35	1	2	0.48	1.34	1012
Savings	0.95	0	1	0.22	17.14	649
Risk Averse	0.68	0	2	0.61	2.34	1014
Sand or Vinyl	0.08	0	1	0.28	9.64	1014
Assets Ownership	7.56	0	17	3.39	2.46	1014
Wage employment	0 .41	0	1	0.49	1.13	1014
Frequency of use (Cashin)	0.08	0	8	0.59	93.76	1014
Frequency of use (Cashout)	0.06	0	7	0.52	121.11	1014
Frequency of use (Bill pay)	0.01	0	8	0.26	874.21	1014
Frequency of use (P2P-receive)	0.10	0	9	0.76	78.46	1014
Frequency of use (P2P-send)	0.09	0	8	0.70	80.14	1014
Frequency of use (Merchabt pay)	0	0	0	0	0	1014

Table reports the descriptive statistics of the respondents in the evaluation sample. Note: Registration = registered more than a year ago; Savings = Savings as the main reason of opening a savings account. SD= Standard Deviation.

Table 2: Descriptive Statistics: Baseline Data

	Total	Control	Pooled Treatment	T15%	T30%
Age	33.94	34.59	33.44	33.64	33.28
	(11.76)	(12.31)	(11.30)	(12.01)	(10.61)
Gender	1.815	1.816	1.815	1.782	1.846
	(0.388)	(0.388)	(0.388)	(0.414)	(0.361)
Married	0.581	0.590	0.574	0.561	0.587
	(0.494)	(0.492)	(0.495)	(0.497)	(0.493)
Educated	1.091	1.110	1.077	1.090	1.065
	(0.288)	(0.313)	(0.267)	(0.287)	(0.247)
Household Head	1.552	1.526	1.572	1.562	1.580
	(0.498)	(0.500)	(0.495)	(0.497)	(0.494)
Household size	10.53	10.70	10.40	10.27	10.53
	(8.856)	(9.053)	(8.690)	(8.666)	(8.771)
Poor	0.178	0.154	0.197	0.204	0.188
	(0.383)	(0.361)	(0.398)	(0.404)	(0.391)
Registration	0.840	0.851	0.831	0.841	0.823
	(0.367)	(0.357)	(0.375)	(0.366)	(0.383)
Bank account	1.358	1.374	1.348	1.368	1.324
	(0.480)	(0.484)	(0.477)	(0.483)	(0.469)
Savings	0.949	0.948	0.950	0.934	0.965
	(0.220)	(0.223)	(0.218)	(0.249)	(0.185)
Risk Averse	0.680	0.676	0.950	0.734	0.631
	(0.615)	(0.580)	(0.218)	(0.663)	(0.614)
Sand or Vinyl	0.087	0.100	0.078	0.093	0.061
	(0.282)	(0.301)	(0.267)	(0.292)	(0.241)
Assets Ownership	7.544	7.597	7.504	7.163	7.843
	(3.412)	(3.395)	(3.433)	(3.274)	(3.543)
Wage employment	0.411	0.420	0.404	0.368	0.439
	(0.492)	(0.494)	(0.491)	(0.483)	(0.497)
Frequency of use (Cashin)	0.076	0.068	0.086	0.024	0.089
	(0.590)	(0.560)	(0.630)	(0.269)	(0.624)
Frequency of use (Cashout)	0.0584	0.051	0.068	0.028	0.075
	(0.520)	(0.458)	(0.594)	(0.275)	(0.586)
Frequency of use (Bill pay)	0.011	0.017	0.002	0.028	0.007
	(0.261)	(0.341)	(0.0483)	(0.471)	(0.117)
Frequency of use (P2P-receive)	0.097	0.111	0.077	0.087	0.137
	(0.759)	(0.809)	(0.684)	(0.684)	(0.919)
Frequency of use (P2P-send)	0.083	0.072	0.107	0.069	0.061
	(0.694)	(0.618)	(0.807)	(0.597)	(0.599)
Frequency of use (Merchant pay)	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)
No. of Observations	1014	1014	1014	1014	1014
F-test			1.34		
P-value			0.16		

Table reports means of covariates (column 1-3, respectively) of wallet holders in the control, treatment, and overall sample. Reported in column 4 are the mean difference of the covariates between those in the control group and those in the treatment group. The F-statistics for a test of the joint significance of the covariates is reported in the last rows. Note: reported in parenthesis are standard deviation (column 1-3) and p-values (column 4) from a t-test of significance of the difference between the two groups; $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 3: Baseline Data Results

	Control Group Levels	Difference Pooled Treatment - Control	Difference T15% - Control	Difference T30%-Control
Age	34.59***	-1.150	-0.950	-1.316
	(0.568)	(0.747)	(0.895)	(0.892)
Gender	1.816***	-0.0005	-0.034	0.0306
	(0.0187)	(0.0247)	(0.0295)	(0.0294)
Married	0.590***	-0.015	-0.029	-0.003
	(0.0239)	(0.0314)	(0.0376)	(0.0374)
Educated	1.110***	-0.033	-0.020	-0.045*
	(0.0139)	(0.0183)	(0.0219)	(0.0218)
Household Head	1.526***	0.046	0.037	0.0545
	(0.0240)	(0.0316)	(0.0379)	(0.0377)
Household size	10.700***	-0.298	-0.433	-0.166
	(0.428)	(0.563)	(0.677)	(0.672)
Poor	0.154***	0.043	0.0503	0.0339
	(0.0185)	(0.0243)	(0.0291)	(0.0290)
Registration	0.851***	-0.020	-0.010	-0.028
	(0.0177)	(0.0234)	(0.0279)	(0.0278)
Bank account	1.374***	-0.026	-0.006	-0.050
	(0.0232)	(0.0305)	(0.0366)	(0.0364)
Savings	0.948***	0.002	-0.014	0.017
	(0.0134)	(0.0175)	(0.0211)	(0.0206)
Risk Averse	0.676***	0.006	0.058	-0.045
	(0.0297)	(0.0391)	(0.0468)	(0.0466)
Sand or Vinyl	0.100***	-0.023	-0.007	-0.039
	(0.0136)	(0.0179)	(0.0214)	(0.0214)
Assets Ownership	7.597***	-0.093	-0.434	0.246
	(0.164)	(0.217)	(0.259)	(0.258)
Wage employment	0.420***	-0.016	-0.052	0.019
	(0.0238)	(0.0315)	(0.0376)	(0.0375)
Frequency of use (Cashin)	0.0862**	-0.018	-0.0620	0.002
	(0.0265)	(0.0862)	(0.0418)	(0.0416)
Frequency of use (Cashout)	0.068**	-0.016	-0.040	0.007
	(0.0396)	0.0330)	(0.0395)	(0.0251)
Frequency of use (Bill pay)	0.002	0.015	0.025	0.004
	(0.0126)	(0.0166)	(0.0199)	(0.0198)
Frequency of use (P2P-receive)	0.077*	0.034	0.010	0.060
	(0.0367)	(0.0482)	(0.0578)	(0.0576)
Frequency of use (P2P-send)	0.107**	0.034	-0.038	-0.046
	(0.0335)	(0.0448)	(0.0529)	(0.0527)
Frequency of use (Merchant pay)	0	0	0	0
	(0)	(0)	(0)	(0)
No. of Observations	1012	1011	1011	1011

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 4: Administrative Data Descriptive Statistics (Month 1, 2 & 3)

	Total	Control	Pooled Treatment	T15%	T30%
Active	0.067	0.061	0.0714	0.087	0.0582
	(0.251)	(0.240)	(0.258)	(0.280)	(0.235)
Turnover	240.2	243.5	223.8	189.4	286.3
	(1773.2)	(1751.1)	(1755.1)	(1193.5)	(2234.8)
Total Cashin	132.4	117.6	127.6	100.3	186.2
	(1164.9)	(1102.2)	(1141.8)	(722.3)	(1550.5)
No. of Cashin	0.116	0.120	0.110	0.127	0.0993
	(0.943)	(1.168)	(0.733)	(0.821)	(0.642)
Avergae Cashout	51.53	52.55	51.67	63.63	37.94
	(531.7)	(697.7)	(370.3)	(428.1)	(294.0)
Total Cashout	74.67	73.26	77.02	76.27	75.14
	(665.3)	(778.6)	(574.5)	(509.1)	(625.1)
No. of Cashout	0.0505	0.0447	0.0557	0.0479	0.0616
	(0.391)	(0.344)	(0.426)	(0.295)	(0.521)
Total Charges (Cashout)	2.631	2.499	2.775	2.562	2.894
	(20.37)	(20.67)	(20.35)	(15.52)	(23.97)
Average Bill Pay	9.012	17.98	2.492	2.019	2.947
	(153.1)	(234.2)	(23.86)	(13.88)	(30.48)
Total Bill Pay	27.17	43.22	15.72	12.90	18.07
	(353.5)	(511.3)	(161.3)	(103.2)	(201.4)
No. of Bill Pay	0.302	0.438	0.206	0.185	0.223
	(5.454)	(8.151)	(1.769)	(1.326)	(2.099)
Average Merchant Pay	4.955	7.059	3.484	3.425	3.425
	(70.25)	(83.82)	(58.98)	(58.52)	(58.52)
Total Merchant Pay	5.946	9.412	3.484	0	6.849
	(99.42)	(118.6)	(83.48)	(0)	(117.0)
No. of Merchant Pay	0.006	0.009	0.003	0	0.007
	(0.0994)	(0.119)	(0.0835)	(0)	(0.117)
No. of Observation	1012	1012	1012	1012	1012

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 5: Administrative Data Results: (Month 1, 2, 3)

	Control Group Levels	Difference Pooled Treatment - Control	Difference T15% - Control	Difference T30%-Control
Active	0.061***	0.011	0.024	-0.003
	(0.0122)	(0.0159)	(0.0165)	(0.0191)
Turnover	243.5**	-16.24	-54.03	42.79
	(86.08)	(111.4)	(134.9)	(134.9)
Total Cashin	117.6*	11.67	-17.31	68.63
	(56.53)	(71.50)	(88.59)	(88.59)
No. of Cashin	0.120**	-0.009	0.007	-0.021
	(0.0458)	(0.0599)	(0.0717)	(0.0717)
Mean Cashout	52.55*	-0.151	11.08	-14.61
	(25.81)	(33.97)	(40.45)	(40.45)
Total Cashout	73.26*	4.782	3.008	1.878
	(32.30)	(42.51)	(50.62)	(50.62)
No.of Cashout	0.045*	0.012	0.003	0.017
	(0.019)	(0.025)	(0.029)	(0.030)
Total Charges (cashouts)	2.499*	0.311	0.0628	0.395
	(0.989)	(1.302)	(1.550)	(1.550)
Mean Bill Pay	17.98*	-15.24	-15.96	-15.04
	(7.427)	(9.773)	(11.64)	(11.64)
Total Bill Pay	43.22*	-26.90	-30.31	-25.15
	(17.15)	(22.57)	(26.87)	(26.87)
No. Bill Pay	0.438	-0.226	-0.253	-0.215
	(0.265)	(0.348)	(0.415)	(0.415)
Mean Merchant Pay	7.059*	-3.476	-3.634	-3.634
	(3.410)	(4.488)	(5.344)	(5.344)
Total Merchant Pay	9.412	-5.796	-9.412	-2.562
	(4.824)	(6.350)	(7.559)	(7.559)
No. Merchant Pay	0.009	-0.004	-0.009	-0.003
	(0.0048)	(0.006)	(0.008)	(0.008)
No. of Observations	1012	1012	1009	1009

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 6: Administrative Data Descriptive Statistics (Month 1)

	Total	Control	Pooled Treatment	T15%	T30%
Active	0.0396	0.0282	0.0575	0.0479	0.0479
	(0.195)	(0.166)	(0.233)	(0.214)	(0.214)
Turnover	164.0	129.4	448.0	113.3	265.1
	(1606.4)	(1438.2)	(3868.7)	(985.2)	(2222.5)
Total Cashin	110.1	87	249.9	67.55	186.2
	(1139.9)	(1069.4)	(2157.3)	(649.9)	(1550.5)
No. of Cashin	0.0981	0.0941	0.249	0.103	0.0993
	(0.931)	(1.156)	(1.965)	(0.801)	(0.642)
Avergae Cashout	20.41	9.598	52.01	31.27	25.28
	(221.1)	(100.9)	(374.0)	(324.2)	(221.5)
Total Cashout	42.43	30.31	164.5	40.03	62.48
	(440.9)	(362.4)	(1689.1)	(356.4)	(595.3)
No. of Cashout	0.0387	0.0329	0.0889	0.0308	0.0548
	(0.375)	(0.328)	(0.692)	(0.254)	(0.515)
Total Charges (Cashout)	1.690	1.318	4.923	1.452	2.469
	(16.50)	(13.57)	(41.48)	(11.34)	(23.34)
Average Bill Pay	1.098	1.106	2.896	0.949	1.235
	(9.741)	(11.46)	(26.08)	(7.757)	(8.790)
Total Bill Pay	11.47	12.08	24.95	5.695	16.36
	(183.3)	(223.9)	(231.0)	(59.25)	(199.4)
No. of Bill Pay	0.274	0.414	0.294	0.123	0.219
	(5.439)	(8.150)	(2.552)	(1.112)	(2.099)
Average Merchant Pay	0	0	5.226	0	0
	(0)	(0)	(72.17)	(0)	(0)
Total Merchant Pay	0	0	8.711	0	0
	(0)	(0)	(125.0)	(0)	(0)
No. of Merchant Pay	0	0	0.009	0	0
	(0)	(0)	(0.125)	(0)	(0)
No of Observation	1012	1012	1012	1012	1012

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 7: Administrative Data Descriptive Statistics (Month 2)

	Total	Control	Pooled Treatment	T15%	T30%
Active	0.037	0.035	0.047	0.048	0.027
	(0.188)	(0.185)	(0.212)	(0.214)	(0.164)
Turnover	277.5	519.9	174.3	10.89	191.3
	(4142.1)	(6198.8)	(1680.4)	(94.65)	(1808.2)
Total Cashin	85.68	122.2	111.0	0	118.1
	(1222.9)	(1620.4)	(1120.0)	(0)	(1159.4)
No. of Cashin	0.070	0.120	0.098	0	0.069
	(1.110)	(1.648)	(0.722)	(0)	(0.552)
Avergae Cashout	24.40 2	7.15	28.77	33.12	11.67
	(259.2)	(274.7)	(279.8)	(329.6)	(117.7)
Total Cashout	36.95	53.84	52.15	0	49.32
	(489.7)	(626.8)	(494.5)	(0)	(506.1)
No. of Cashout	0.027	0.031	0.044	0	0.048
	(0.331)	(0.277)	(0.409)	(0)	(0.515)
Total Charges (Cashout)	1.366	1.816	1.995	0	2.075
	(17.22)	(19.52)	(18.50)	(0)	(21.66)
Average Bill Pay	18.23	41.26	1.076	2.064	0.882
	(220.6)	(338.4)	(8.317)	(19.45)	(6.858)
Total Bill Pay	148.9	334.4	11.18	10.89	16.96
	(2592.4)	(3985.5)	(148.3)	(94.65)	(200.2)
No. of Bill Pay	0.257	0.315	0.172	0.127	0.301
	(2.627)	(3.223)	(1.693)	(0.927)	(2.806)
Average Merchant Pay	4.955	7.059	0	3.425	3.425
	(70.25)	(83.82)	(0)	(58.52)	(58.52)
Total Merchant Pay	5.946	9.412	0	0	6.849
	(99.42)	(118.6)	(0)	(0)	(117.0)
No. of Merchant Pay	0.006	0.009	0	0	0.007
	(0.0994)	(0.119)	(0)	(0)	(0.117)
No of Observation	1012	1012	1012	1012	1012

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 8: Administrative Data Descriptive Statistics (Month 3)

	Total	Control	Pooled Treatment	T15%	T30%
Active	0.0525	0.0447	0.0383	0.0685	0.0479
	(0.223)	(0.207)	(0.192)	(0.253)	(0.214)
Turnover	370.7	267.6	102.8	534.0	357.3
	(3713.1)	(3537.2)	(1293.5)	(4696.5)	(2725.5)
Total Cashin	208.1	149.2 60.10	278.4	223.4	
	(2159.3)	(2183.8)	(828.3)	(2489.6)	(1730.3)
No. of Cashin	0.219	0.179	0.0348	0.332	0.164
	(2.266)	(2.641)	(0.395)	(2.422)	(1.319)
Avergae Cashout	1.32	51.61	22.79	76.42	25.81
	(536.3)	(703.4)	(249.6)	(471.9)	(227.2)
Total Cashout	137.8	105.0	25.09	228.7	94.59
	(1553.6)	(1371.3)	(361.5)	(2194.9)	(889.9)
No. of Cashout	0.067	0.040	0.024	0.089	0.086
	(0.617)	(0.505)	(0.368)	(0.614)	(0.753)
Total Charges (Cashout)	3.992	2.828	1.056	5.932	3.747
	(38.19)	(33.75)	(15.47)	(48.09)	(32.77)
Average Bill Pay	2.318	1.592	1.498	2.672	3.021
	(24.38)	(22.20)	(14.71)	(19.44)	(31.02)
Total Bill Pay	17.75	8.440	14.17	20.03	29.02
	(190.3)	(117.5)	(157.8)	(173.1)	(274.0)
No. of Bill Pay	0.191	0.0565	0.218	0.202	0.377
	(1.972)	(0.642)	(2.108)	(1.449)	(3.273)
Average Merchant Pay	3.667	1.647	3.484	3.425	6.849
	(58.73)	(33.95)	(58.98)	(58.52)	(82.62)
Total Merchant Pay	7.037	4.941	3.484	6.849	10.27
	(115.1)	(101.9)	(83.48)	(117.0)	(130.7)
No. of Merchant Pay	0.008	0.007	0.003	0.007	0.010
	(0.133)	(0.146)	(0.0835)	(0.117)	(0.131)
No of Observation	1012	1012	1012	1012	1012

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 9: Administrative Data Results: (Month 1)

	Control Group Levels	Difference Pooled Treatment - Control	Difference T15% - Control	Difference T30%-Control
Active	0.0282**	0.0192	0.0197	0.0197
	(0.009)	(0.0123)	(0.0148)	(0.0148)
Turnover	129.4	46.72	-16.11	135.7
	(77.94)	(100.5)	(122.1)	(122.1)
Total Cashin	87.00	25.19	-19.45	99.22
	(55.30)	(69.82)	(86.65)	(86.65)
No. of Cashin	0.0941*	0.005	0.009	0.005
	(0.0452)	(0.0592)	(0.0708)	(0.0708)
Mean Cashout	9.598	19.30	21.67	15.68
	(10.73)	(14.11)	(16.81)	(16.81)
Total Cashout	30.31	22.27	9.728	32.18
	(21.40)	(28.16)	(33.53)	(33.53)
No.of Cashout	0.033	0.011	-0.002	0.022
	(0.0182)	(0.0239)	(0.0285)	(0.0285)
Total Charges (Cashout)	1.318	0.695	0.134	1.152
	(0.801)	(1.054)	(1.255)	(1.255)
Mean Bill Pay	1.106*	-0.014	-0.157	0.129
	(0.473)	(0.621)	(0.741)	(0.741)
Total Bill Pay	12.08	-0.731	-6.387	4.274
	(8.898)	(11.71)	(13.94)	(13.94)
No. Bill Pay	0.414	-0.226	-0.291	-0.195
	(0.264)	(0.348)	(0.414)	(0.414)
Mean Merchant Pay	0	0	0	0
	(.)	(.)	(.)	(.)
Total Merchant Pay	0	0	0	0
	(.)	(.)	(.)	(.)
No. Merchant Pay	0	0	0	0
	(.)	(.)	(.)	(.)
No. of Observations	1012	1012	1009	1009

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 10: Administrative Data Results: (Month 2)

	Control Group Levels	Difference Pooled Treatment - Control	Difference T15% - Control	Difference T30%-Control
Active	0.035***	0.004	0.013	-0.008
	(0.0091)	(0.0120)	(0.0143)	(0.0143)
Turnover	519.9**	-409.8	-509.0	-328.6
	(200.8)	(264.3)	(314.7)	(314.7)
Total Cashin	122.2*	-60.44	-122.2	-4.101
	(59.32)	(78.12)	(92.95)	(92.95)
No. of Cashin	0.120*	-0.0835	-0.120	-0.0515
	(0.0538)	(0.0709)	(0.0844)	(0.0844)
Mean Cashout	27.15*	-3.989	5.967	-15.48
	(12.58)	(16.56)	(19.71)	(19.71)
Total Cashout	53.84*	-28.00	-53.84	-4.520
	(23.75)	(31.28)	(37.21)	(37.21)
No.of Cashout	0.031	-0.006	-0.031	0.017
	(0.0160)	(0.0211)	(0.0251)	(0.0251)
Total Charges (Cashout)	1.816*	-0.735	-1.816	0.259
	(0.835)	(1.100)	(1.309)	(1.309)
Mean Bill Pay	41.26***	-39.19**	-39.20*	-40.38*
	(10.67)	(14.04)	(16.72)	(16.72)
Total Bill Pay	334.4**	-315.6	-323.5	-317.5
	(125.6)	(165.3)	(196.9)	(196.9)
No. Bill Pay	0.315*	-0.0931	-0.189	-0.0139
	(0.127)	(0.168)	(0.200)	(0.200)
Mean Merchant Pay	7.059*	-3.476	-3.634	-3.634
	(3.410)	(4.488)	(5.344)	(5.344)
Total Merchant Pay	9.412	-5.796	-9.412	-2.562
	(4.824)	(6.350)	(7.559)	(7.559)
No. Merchant Pay	0.009	-0.006	-0.009	-0.003
	(0.0048)	(0.0064)	(0.0076)	(0.0076)
No. of Observations	1012	1012	1009	1009

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 11: Administrative Data Results: (Month 3)

	Control Group Levels	Difference Pooled Treatment - Control	Difference T15% - Control	Difference T30%-Control
Active	0.045***	0.013	0.024	0.003
	(0.0108)	(0.0141)	(0.0170)	(0.0170)
Turnover	267.6	184.1	266.4	89.66
	(180.2)	(237.1)	(282.4)	(282.4)
Total Cashin	149.2	102.8	129.3	74.20
	(104.8)	(137.8)	(164.2)	(164.2)
No. of Cashin	0.179	0.0728	0.153	-0.014
	(0.110)	(0.145)	(0.172)	(0.172)
Mean Cashout	51.61*	1.112	24.81	-25.81
	(26.03)	(34.27)	(40.78)	(40.78)
Total Cashout	105.0	60.87	123.6	-10.46
	(75.38)	(99.25)	(118.1)	(118.1)
No.of Cashout	0.040	0.049	0.049	0.046
	(0.0299)	(0.0394)	(0.0469)	(0.0469)
Total Charges (Cashouts)	2.828	2.134	3.103	0.918
	(1.853)	(2.439)	(2.904)	(2.904)
Mean Bill Pay	1.592	1.326	1.080	1.428
	(1.183)	(1.557)	(1.854)	(1.854)
Total Bill Pay	8.440	16.63	11.59	20.58
	(9.230)	(12.15)	(14.46)	(14.46)
No. Bill Pay	0.057	0.239	0.146	0.320*
	(0.0955)	(0.126)	(0.150)	(0.150)
Mean Merchant Pay	1.647	3.602	1.778	5.202
	(2.850)	(3.751)	(4.465)	(4.465)
Total Merchant Pay	4.941	3.838	1.908	5.333
	(5.589)	(7.355)	(8.758)	(8.758)
No. Merchant Pay	0.007	0.002	-0.000	0.003
	(0.00648)	(0.00852)	(0.0101)	(0.0101)
No. of Observations	1012	1012	1009	1009

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Figure 1: Evaluation Design

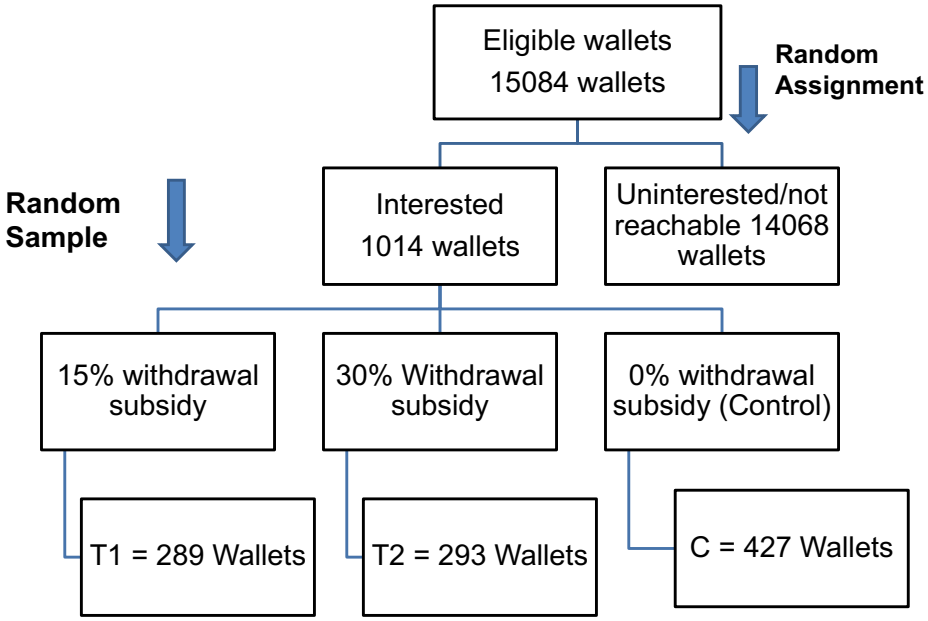
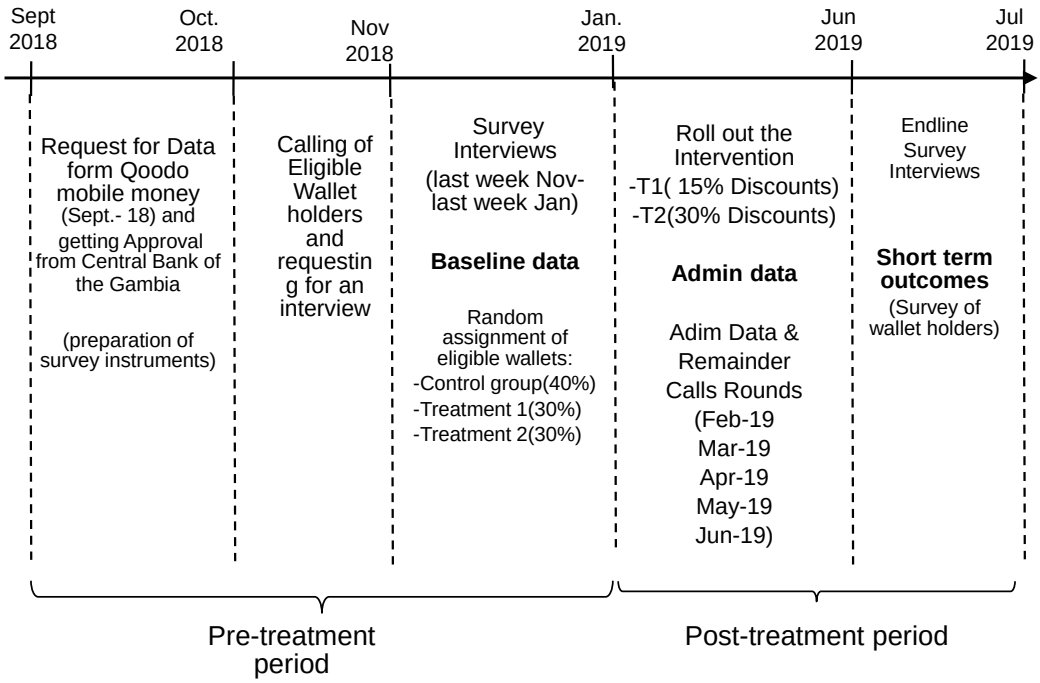


Figure 2: Timeline of Intervention



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Last modified by hamidou, 02.12.2018 14:45:18

Shared with:
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Sections: 8, Sub-sections: 6, Questions: 97.
Questions with enabling conditions: 48
Questions with validation conditions:43
Rosters: 3
Variables: 0

Baseline_Survey_mobile_money_final_version

SURVEY IDENTIFICATION INFORMATION QUESTIONNAIRE DESCRIPTION

Basic information

Title	Baseline_Survey_mobile_money_final_version
Version identificator	Draft
Version notes	second draft

Survey data information

Study type	Household Survey
Kind of data	Sample survey data [ssd]
Mode of Data Collection	CAPI

Survey information

Country	Gambia, The
Year	2018
Languages	English and local languages
Unit of analysis	individual
Coverage	nationwide
Universe	Qudoo mobile money users
Primary Investigator	Hamidou Jawara
Consultants	Adama Touray, Fatoumata Touray, Lamin B. Jammeh
Funding	Partnership for Economic Policy

Additional info

Keywords	Transaction cost and access to digital finance

COVER PAGE

1. Individual ID

I This question is required
E1 idnum.InRange(1,35000000)
M1 Error! number not valid

NUMERIC: INTEGER idnum
SCOPE: IDENTIFYING

STATIC TEXT

We would like to invite you to participate in a study on savings and digital finance. The research is being conducted jointly by researchers from the University of The Gambia in colloboration with Qodoo Financial Services. The research is financed by the partnership for Economic Policy (PEP). If you have any questions about this project, please feel free to ask them nowor any time in the future. The purpose of this study is to try to learn more about digital financial services usage and howit can be improved. We would like to interviewyou several times. First, we would like to administer a background questionnaire that will include questions about you, your family, your income, your assets, and other related subjects. That first survey, which I would administer today, will take about 45 minutes. Second, we would like to come back to interviewagain six months. When we come back, we would like to administer a questionnaire that will include questions about your income, expenditures, business, and among others. There is no risk for you if you decide to participate in the study. There are no direct benefits; however, your participation will help academics and policymakers understand the impact of digital finance usage and howit can be improved. Each time we would fill in the survey with you, we would keep your answers confidential. No one you knowwould have access to your answers. Only my colleagues at UTG and Qodoo would look at them. If you don't want to be in this study, you don't have to participate. Remember, being in this study is up to you and no one will be upset if you don't want to participate or even if you change your mind later and want to stop. Even if you agree to participate in the study, you won't have to answer all the questions in the surveys if you don't want to. Answering the questions is up to you and no one will be upset if you don't want to answer a given question or if you want to stop the survey in the middle. Also, even if you agree to participate in the study now, no one from UTG will be allowed to ask you additional questions in the future without asking for your consent again. You can quit the project at any time. All of the information that we obtain from you during the research will be kept strictly confidential. While there is a small chance that the confidentiality of the information collected could be compromised, we will take care to prevent this from happening. Each person interviewed will have their own ID number and your information will only be identified by this ID number after it has been input and the data is being analyzed.Your name and other identifying information about you will not be used in any reports of the research. All data from the survey will be properly archived.

2. Do you agree to participate?

I If consent is not given, you can end the interview at this point.

SINGLE-SELECT consent
01 ○ Yes
02 ○ No

3. Interview date

E $consent

DATE: CURRENT TIME dateint

4. Region

E $consent

TEXT region

5. Area

E $consent

SINGLE-SELECT area
01 ○ Rural
02 ○ Urban

6. Village or town

E $consent

LIST vil

7. GPS

E $consent

GPS gpscode
N
W
A

8. Has respondent been visited before?

E $consent

SINGLE-SELECT visitbf
01 ○ Yes
02 ○ No

9. Date of first visit

E (visitbf==1)

DATE datevis

10. Reason for second visit

E (visitbf==1)

SINGLE-SELECT resecvisit

01 ○ Problem with Questionnaire
02 ○ Respondent was busy
03 ○ It was meal time
99 ○ Other

10_Other, please specify

E resecvisit==99
E1 second_visit_re_os.Length>0
M1 Please provide an to this question

LIST second_visit_re_os

INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS

INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS

DEMOGRAPHIC

1. Name

I Optional

TEXT Nameres

2. Date of Birth?

I In order to confirm date, ask for ID card or Birth certificate or Voters card. If respo ndent doesn't have any of these documents and doesn't know date of birth, ente r current date.
E1 FullYearsBetween(birthDate,dateint)>=10
M1 Please years between birthdate and interview date cannot be less than 10 years
E2 FullYearsBetween(birthDate,dateint)<120
M2 Please years between birthdate and interview date cannot be greater 120 years

DATE birthDate

3. Age

E1 Age.InRange(10,110)
M1 Client age has to be between 10 and 110 years
E2 FullYearsBetween(birthDate,dateint)<=Age
M2 Please insert age that matches date of birth
E3 FullYearsBetween(birthDate,dateint)>=Age
M3 Please insert age that matches date of birth

NUMERIC: INTEGER Age

4. Sex

SINGLE-SELECT Gender

01 ○ Female
02 ○ Male

5. Current marital status

E Age>=13

SINGLE-SELECT: COMBO BOX marstatus

01 ○ Maried
02 ○ Consensual union
03 ○ Separated
04 ○ Divorce
05 ○ Widowed
06 ○ Never married

6. How many of your children currently live with you and under your support?

E1 child.InRange(0,50)
M1 Please note number of children cannot negative or above 50 children

NUMERIC: INTEGER child

7. Have you ever been to school?

E1 IsAnswered(self)
M1 Please provide an answer to this question

SINGLE-SELECT educ

01 ○ Yes
02 ○ No

8. Highest level completed

E (educ==1)
E1 IsAnswered(self)
M1 Please provide answer to this question

SINGLE-SELECT edulevel

01 ○ Primary education
02 ○ Secondary education
03 ○ Tertiary - University
04 ○ Tertiary - non-university
05 ○ Madrasa - elementary
06 ○ Madrasa - tertiary
99 ○ Others

8_Other, please specify

E (edulevel==99)
E1 education_os.Length>=1
M1 please provide an answer to this question

LIST education_os

.....

9. Primary occupation

E1 IsAnswered(self)
M1 Please provide answer to this question

SINGLE-SELECT: COMBO BOX poccup

01 ○ Market vendor
02 ○ Street vendor
03 ○ Farmer, fischerman, hunter, logger and related work
04 ○ Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers
05 ○ Hairdressers, Beauticians and Related Workers
06 ○ Machinery Mechanics and Repairers
07 ○ Building and related trade works
08 ○ Government official
09 ○ Retired personnel
10 ○ Administrative or clarical work
11 ○ Manson, Capentry Welderman, Mechanic, and related work
12 ○ Wage laborer
13 ○ Civil servant
14 ○ Miners, quarrymen and related workers
15 ○ Driver, Tricycle, or other transaport related jobs
16 ○ Houseworker (without wage) and unemployed student

And 2 other symbols [2]

9_Other, please specify?

E (poccup==99)
E1 primary_occup_os.Length>=1
M1 Please provide an answer to this question

LIST primary_occup_os

.....

INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS

INCOME

10. What are the main sources of income for you (maximum 3)?

MULTI-SELECT: ORDERED pincsource

01 ☐ Regular wage employment
02 ☐ Self employment - farming (agricultural or livestock)
03 ☐ Self employment - nonfarming (e.g casual labor, manual labour, fishermen, etc.)
04 ☐ Own business / employer
05 ☐ Property/land rental/Interest Revenue
06 ☐ Pension
07 ☐ Transfer from relatives
08 ☐ Other private assistance (e.g from philantrophies or NGOs)
09 ☐ Transfer from the government
99 ☐ Others

10_Others, please specify

LIST main_inc_source_os

E pincsource.Contains(99)
E1 main_inc_source_os.Length>=1
M1 Please provide an answer

INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS / INCOME

Roster: INCOME SOURCE - MAIN

generated by multi-select question pincsource

incsoma

E pincsource.Length!=0

10.1. In the last month, what was your total income from %rostertitle% ?

NUMERIC: INTEGER incomep

I Please ask for approximation. If case respondent does not, enter 999998
E pincsource.Length>0
E1 incomep>0
M1 Income cannot be less than zero

11. Subsidiary sources of income, if any (max 3)

MULTI-SELECT: ORDERED sincsource

- 01 ☐ Regular wage employment
- 02 ☐ Self employment - farming (agricultural or livestock)
- 03 ☐ Self employment - nonfarming (e.g casual labor, manual labour, fishermen, etc.)
- 04 ☐ Own business / employer
- 05 ☐ Property/land rental/Interest Revenue
- 06 ☐ Pension
- 07 ☐ Transfer from relatives
- 08 ☐ Other private assistance (e.g from philantrophies or NGOs)
- 09 ☐ Transfer from the government
- 10 ☐ None
- 99 ☐ Others

I Please select all tha is relevant
E1 IsAnswered(self)
M1 Please provide an answer to this question
E2 sincsource.Contains(10)? !(sincsource.ContainsAny(1,2,3,4,5,6,7,8,9,99)): true
M2 Please when none is selected, you cannot select the other options

11_Others, please specify

LIST Sub_income_os

E sincsource.Contains(99)
E1 Sub_income_os.Length>=1
M1 Please provide an answer to this question

INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS / INCOME

Roster: INCOME SOURCE - SECONDARY

generated by multi-select question sincsource

incsosec

E sincsource.ContainsAny(1,2,3,4,5,6,7,8,9, 99)

11.1. In the last month, what was your total income from %rostertitle%?

NUMERIC: INTEGER incomese

I Ask for approximation. In case respondent does know, enter 999998.
E sincsource.Length>0
E1 incomese>0
M1 Income cannot be less than zero
E2 IsAnswered(self)
M2 Please provide an answer to this question

12. Which of the following assets do you own?

I Please mark all that is relevant.
E1 `IsAnswered(self)`
M1 Please provide an answer to this question
E2 `indasset.Contains(23)? !(indasset.ContainsAny(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22)): true`
M2 Please you cannot pick the none option when the other option are selected

MULTI-SELECT `indasset`

- 01 ☐ Radio
- 02 ☐ Bicycle
- 03 ☐ Sewing Machine
- 04 ☐ Cooking pot
- 05 ☐ Cassette/CD Player
- 06 ☐ Bed
- 07 ☐ Cooking Stove (Sinkiru/Oss)
- 08 ☐ Bench
- 09 ☐ Chair
- 10 ☐ Foam Mattress
- 11 ☐ Straw Mattress
- 12 ☐ Kerosene Lamp
- 13 ☐ Metal Trunk (Wulis/Wulisoo)
- 14 ☐ Motorcycle
- 15 ☐ Cupboard
- 16 ☐ Land

And 6 other symbols [1]

INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS

GENERAL HOUSEHOLD CHARACTERISTICS

13. Are you the head of your household?

SINGLE-SELECT `hhead`

- 01 ○ Yes
- 02 ○ No

14.What is your relationship with the head?

E `hhead==2`

SINGLE-SELECT `rehead`

- 01 ○ Spouse
- 02 ○ Sibling
- 03 ○ Parent
- 04 ○ Child
- 09 ○ Others

14_oth. Specify other relationship with head

E `rehead==9`

TEXT `other_relationship_head`

15. Including you, how many people live in this household (in the last 6 month)?

I Please check whether number includes children.
E1 `hhsize>0`
M1 Please household size cannot be zero
E2 `hhsize<100`
M2 Please household size cannot be greater than 100

NUMERIC: INTEGER `hhsize`

16. How would you rate the standard of living of your household in relation to other households in your community?

I When you are the house of the respondent, Please don't ask the respondent thi s question. Instead answer question 21.

SINGLE-SELECT `subpor_ind`

- 01 ○ Very poor
- 02 ○ Poor
- 03 ○ Moderate
- 04 ○ Fairly rich
- 05 ○ Rich

INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS

OTHER HOUSEHOLD CHARACTERISTICS

17. What is the main source of drinking water for members of your household?

SINGLE-SELECT: COMBO BOX — drinking_water

- 11 ○ PIPED WATER: PIPED INTO DWELLING
- 12 ○ PIPED WATER: PIPED INTO YARD/PLOT
- 13 ○ PIPED WATER: PIPED TO NEIGHBOUR
- 14 ○ PIPED WATER: PUBLIC TAP/STANDPIPE
- 21 ○ TUBE WELL OR BOREHOLE
- 31 ○ DUG WELL: PROTECTED WELL
- 32 ○ DUG WELL: UNPROTECTED WELL
- 41 ○ WATER FROM SPRING: PROTECTED SPRING
- 42 ○ WATER FROM SPRING: UNPROTECTED SPRING
- 51 ○ RAINWATER
- 61 ○ TANKER TRUCK
- 71 ○ CART WITH SMALL TANK
- 81 ○ SURFACE WATER (RIVER/DAM/LAKE/POND/STREAM/CANAL)
- 91 ○ BOTTLED WATER
- 96 ○ OTHER, SPECIFY

17_oth. Specify the other source of drinking water for the members of this household.

E drinking_water==96

TEXT — drinking_water_os

.....

18. What kind of toilet facility do members of your household usually use?

SINGLE-SELECT — toilet

- 11 ○ FLUSH OR POUR FLUSH: FLUSH TO PIPED SEWER SYSTEM
- 12 ○ FLUSH OR POUR FLUSH: FLUSH TO SEPTIC TANK
- 13 ○ FLUSH OR POUR FLUSH: FLUSH TO PIT LATRINE
- 14 ○ FLUSH OR POUR FLUSH: FLUSH TO SOMEWHERE ELSE
- 15 ○ FLUSH OR POUR FLUSH: FLUSH, DON'T KNOW WHERE
- 21 ○ PIT LATRINE: VENTILATED IMPROVED PIT LATRINE
- 22 ○ PIT LATRINE: PIT LATRINE WITH SLAB
- 23 ○ PIT LATRINE: PIT LATRINE WITHOUT SLAB/OPEN PIT
- 31 ○ COMPOSTING TOILET
- 41 ○ BUCKET TOILET
- 51 ○ HANGING TOILET/HANGING LATRINE
- 61 ○ NO FACILITY/BUSH/FIELD
- 99 ○ OTHER, SPECIFY

18_oth. Specify the other type of toilet used by members of the household

E toilet==99

TEXT — toilet_os

.....

STATIC TEXT

For question 19 to 21, if you are at the house of the respondent, please do not ask the respondent these questions! Instead, record your observation.

19. Main material of the dwelling floor

I Do not ask the respondent this question!Instead, record your observation of this items

SINGLE-SELECT floor_material

- 11 ○ EARTH/SAND
- 12 ○ DUNG
- 21 ○ WOOD PLANKS
- 22 ○ PALM/BAMBOO
- 31 ○ PARQUET OR POLISHED WOOD
- 32 ○ VINYL OR ASPHALT STRIPS
- 33 ○ CERAMIC TILES
- 34 ○ CEMENT
- 35 ○ CARPET
- 99 ○ OTHER, SPECIFY

19_oth. Specify the other type of material of the dwelling floor

E floor_material==99

TEXT floor_material_os

.....

20. Main material for roof of Dwelling

I Record observations

SINGLE-SELECT roof_material

- 11 ○ NO ROOF
- 12 ○ THATCH / PALM LEAF
- 13 ○ SOD
- 21 ○ RUSTIC MAT
- 22 ○ PALM / BAMBOO
- 23 ○ WOOD PLANKS
- 24 ○ CARDBOARD
- 31 ○ METAL / TIN
- 32 ○ WOOD
- 33 ○ CALAMINE / CEMENT FIBRE
- 34 ○ CERAMIC TILES
- 35 ○ CEMENT
- 36 ○ ROOFING SHINGLES
- 99 ○ OTHER, SPECIFY

20_oth. Specify the other type of material of the roof of the dwelling

E roof_material==99

TEXT roof_material_os

.....

21. How would you describe the poverty level of this household?

I Please be objective in your assessment of the household poverty level.

E !subpor_ind.InRange(1,5)

SINGLE-SELECT subpoor

- 01 ○ Very poor
- 02 ○ Poor
- 03 ○ Moderate
- 04 ○ Fairly rich
- 05 ○ Rich

MOBILE MONEY

1. Since when did you first register for the Qodoo service?

SINGLE-SELECT register

- 01 ○ 0 to 1 months ago
- 02 ○ 2 to 6 months ago
- 03 ○ 6 to 12 months ago
- 04 ○ more than a year ago

2. What was the main reason for opening a mobile money account?

SINGLE-SELECT why_mmacct

- 11 ○ Cash-in
- 12 ○ Cash-out
- 13 ○ Bill payments
- 14 ○ Transfer money to someone
- 15 ○ Receive money from someone
- 16 ○ Making payments in shops
- 17 ○ Buying Qcell credit
- 18 ○ Buying Qpower
- 19 ○ Enjoy a promotional offer (e.g. Bonus)
- 99 ○ Others

2_Others, please specify

TEXT — why_mmacct_os

E why_mmacct==99
E1 why_mmacct_os.Length>=0
M1 please provide an answer to this question

3. Do you think your money is safe with Qodoo?

SINGLE-SELECT — mosafe

01 ○ Yes
02 ○ No

4.Why not?

E (mosafe==2)
E1 IsAnswered(self)
M1 Please provide an answer to this question

MULTI-SELECT — whntsaf

01 ☐ In an unregulated sector
02 ☐ Dealing with financial institutions that I don't trust
03 ☐ Services are unreliable
04 ☐ Once lost money from my wallet
05 ☐ Their workers cannot be trusted
99 ☐ Others

4_Others, please specify

TEXT — why_not_trust_os

E whntsaf.Contains(99)
E1 why_not_trust_os.Length>=0
M1 please provide an answer to this question

5. Which are the three most important things you do with your Qodoo account?

MULTI-SELECT — seruse

I Mark all that is relevant and in order of importance
E1 seruse.Length>0
M1 Must select at least one item
E2 seruse.Length<=3
M2 maximum is three items

11 ☐ Cash-in
12 ☐ Cash-out
13 ☐ Bill payments
14 ☐ Transfer money to someone
15 ☐ Receive money from someone
16 ☐ Making payments in shops
17 ☐ Buying Qcell credit
18 ☐ Buying Qpower
99 ☐ Others

5_Other, please specify

LIST — uses_account_os

E seruse.Contains(99)
E1 uses_account_os.Length>=0
M1 please provide an answer

MOBILE MONEY

Roster: FREQUENCY OF USE

generated by multi-select question seruse — frequse

E seruse.ContainsAny(11,12,13,14,15,16,17,18,99)

5.1. How frequently do you use your account for %rostertitle%?

SINGLE-SELECT — freuse

E seruse.ContainsAny(11,12,13,14,15,16,17,18,99)

01 ○ Daily
02 ○ Weekly
03 ○ Once every 2 weeks
04 ○ Once a month
05 ○ Once every three months
06 ○ Once every six months
07 ○ Once a year
08 ○ Less often than that
09 ○ Opened account but never used

6. How would you describe the quality of the signal on your Qcell number?

SINGLE-SELECT — qltsign

01 ○ No reception
02 ○ Bad (difficult to make or receive calls or messages)
03 ○ OK (can sometimes make or receive calls or messages)
04 ○ Good (can usually make or receive calls or messages)
05 ○ Excellent (can almost always make or receive calls or messages)

7. How far from you is the nearest Qodoo agent?

I Distance should be in minutes. If don't know, estimate or enter 998. When respondent is an agent enter 0.
E1 disagnt>=0
M1 Sorry, answer cannot be negative

NUMERIC: INTEGER disagnt

8. When was the last time you visited a Qodoo agent?

SINGLE-SELECT vmagent
01 ○ Today
02 ○ This week
03 ○ This month
04 ○ Within 3 months
05 ○ This year
06 ○ Never
07 ○ I am an agent
97 ○ Dont know

9. The last time you visited a Qodoo agent, could you complete the transaction?

E vmagent!=7 && vmagent!=6

SINGLE-SELECT ctagent
01 ○ Yes
02 ○ No

10. Why not?

E (ctagent==2)

SINGLE-SELECT reagent
01 ○ Agent unavailable
02 ○ Agent had not money
03 ○ Network problems
04 ○ Did not have ID
99 ○ Other

10_Other, please specify

E (reagent==99)
E1 why_not_trans_os.Length>=0
M1 please provide an answer

LIST why_not_trans_os

11. How long did it take to complete the transaction?

E (ctagent==1)

SINGLE-SELECT durtra
01 ○ Less than an hour
02 ○ Half a day
03 ○ A day
04 ○ Several days
05 ○ A week or more
09 ○ Could not complete

12. Which other mobile line do you use?

I Mark all that is relevant
E1 othline.Contains(9)? !(othline.ContainsAny(1,2,3)): true
M1 Please you cannot select the none option if you have selected any of the other options.

MULTI-SELECT othline
01 ☐ Africell
02 ☐ Gamcel
03 ☐ Comium
09 ☐ None

13. Do you own a mobile money account with this provider?

E othline.ContainsAny(1,2,3)

SINGLE-SELECT othaccs
01 ○ Yes
02 ○ No

14. How often is your main cell phone switched on?

SINGLE-SELECT onphon
01 ○ Always
02 ○ Usually
03 ○ Sometimes
04 ○ Rarely
05 ○ Never

15. Do you regularly use your phone for text messaging via SMS?

SINGLE-SELECT smsphon
01 ○ Yes
02 ○ No

FINANCIAL ACCESS AND LITERACY

1. In the last 12 months, did you request a loan?

E1 IsAnswered(self)
M1 Please provide answer to this question

SINGLE-SELECT accloan

01 ○ Yes
02 ○ No

2. What was the main reason for requesting the loan?

E (accloan==1)
E1 IsAnswered(self)
M1 Please provide an answer to this question

SINGLE-SELECT purloan

01 ○ Purchase food
02 ○ Purchase other goods
03 ○ Doctor/Medicine
04 ○ Special occasion (naming ceremony/wedding/funeral/etc)
05 ○ Purchase inputs
06 ○ Purchase land
99 ○ Other

2_Other, please specify

E (purloan==99)
E1 reason_loan_os.Length>=0
M1 Please provide an answer

LIST reason_loan_os

.....

3. Why didn't you request a loan?

E (accloan==2)

SINGLE-SELECT whnocre

01 ○ Do not need
02 ○ Do not want to risk collateral
03 ○ Too expensive
04 ○ Too complicated
05 ○ Can not pay back
06 ○ Do not know where to request
07 ○ Do not have collateral
99 ○ Other

3_Other, please specify

E whnocre==99
E1 request_loan_os.Length>=0
M1 Please provide an answer to this question

LIST request_loan_os

.....

4. During the last 12 months, did you receive any credit?

E1 IsAnswered(self)
M1 Please provide answer to this question

SINGLE-SELECT reloan

01 ○ Yes
02 ○ No

5. What was your main source of credit?

I Please ask for maximum 2 relevant sources.
E (reloan==1) ///cresour.Contains(10)? !(cresour.ContainsAny(1,2,3,4,5,6,7,8,9,99)): true

SINGLE-SELECT cresour

01 ○ Money lender
02 ○ Farmer association
03 ○ Family / friends
04 ○ Bank
05 ○ Credit union
06 ○ Trader (output)
07 ○ Trader (input)
08 ○ Microfinance
09 ○ Kafoo or Compin lending
99 ○ Other

5.1. What was the total amount received from this source?

I In case respondent cannot remember, enter 999998
E cresour.InRange(1,99)
E1 amtre>0
M1 Sorry, amount cannot be negative

NUMERIC: INTEGER amtre

5.2. How much is currently dued?

E cresour.InRange(1,99)
E1 amtdue>=0
M1 Amount cannot be negative
E2 self<=amtre
M2 please note that amount due cannot be greater than amount received

NUMERIC: INTEGER amtdue

5.3. What is the duration of the loan (in days)?

NUMERIC: INTEGER dura

I If month or year is recalled, enter the approximation in days. If cannot recall, ente r 998. If no time is specified, enter 9998.
E cresour.InRange(1,99)
E1 dura>0
M1 Please number of days cannot be negative

6. Why were you denied the loan?

SINGLE-SELECT ynrelo

01 ○ No collateral
02 ○ Withstanding debt
03 ○ Not enough income
99 ○ Other

I Just mark main reason why respondent was denied
E (reloan==2) & accloan==1
E1 IsAnswered(self)
M1 Please mark at least one option

6_Other, please specify

LIST why_denied_loan_os

E ynrelo==99
E1 why_denied_loan_os.Length>=0
M1 Please provide an answer

7. Do you have a bank account?

SINGLE-SELECT bankacc

01 ○ Yes
02 ○ No

E1 IsAnswered(self)
M1 Please provide an answer to this question

8. What do you do with your bank account?

MULTI-SELECT dobank

01 ☐ Savings
02 ☐ Borrowings
03 ☐ Bill payment
04 ☐ Sending or receiving transfer
05 ☐ Buying credit
99 ☐ Others

I Please mark all that is relevant and in order of importance
E bankacc==1

8_Other, please specify

LIST dobacc_os

E dobank.Contains(99)
E1 dobacc_os.Length>=0
M1 Please provide an answer

9. Do you currently have an ATM card?

SINGLE-SELECT atm

01 ○ Yes
02 ○ No

E bankacc==1
E1 IsAnswered(self)
M1 Please provide an answer to this question

10. Which other means of saving do you use?

MULTI-SELECT: ORDERED othmesav

01 ☐ Keep money in household / cash box
02 ☐ Local savings group / OSUSU
03 ☐ Microfinance organization
04 ☐ VISACAS/VSLAS
05 ☐ None
99 ☐ Others

I Please mark all that is relevant and in order of main usage
E1 IsAnswered(self)
M1 Please provide answer to this question
E2 othmesav.Contains(5)? !(othmesav.ContainsAny(1,2,3,4,99)): tru e
M2 Please none option cannot be selected when any of the other options is selecte d

10_Others, please specify

LIST means_savings_os

E othmesav.Contains(99)
E1 means_savings_os.Length>=0
M1 Please provide an answer

11. Suppose you have some money. Is it safer to put your money into one business or investment, or to put your money into multiple businesses or investments?

SINGLE-SELECT risk

01 ○ one business or investment
02 ○ Multiple business or investment
03 ○ Don't know

12. Suppose over the next 10 years the prices of the things you buy double. If your income also doubles, will you be able to buy less than you can buy today, the same as you can buy today, or more than you can buy today.

SINGLE-SELECT inflation

01 ○ Less
02 ○ The same
03 ○ More
04 ○ Don't know

13. Suppose you want to borrow 500 dalasis from a bank. Which is the lowest you will payback: 510 dalasis or 500 plus 10 percent?

SINGLE-SELECT numeracy

01 ○ 510
02 ○ 500 plus 10 percent
03 ○ Don't know

14. Amie has a very bright child who is currently in secondary school,but will probably do well in university. She is worried how her family will pay for the child's education. If Amie comes to you for advice, what would you suggest her to do?

SINGLE-SELECT finatt1

01 ○ Buy child insurance policy
02 ○ Borrow money from a moneylender
03 ○ Open a savings account in a bank
04 ○ Save at home
05 ○ Discontinue education

TIME PREFERENCE I

STATIC TEXT

Imagine you are going to be given a monetary sum from a trusted source. You will receive it either tomorrowor in one month.If you wait one month you will receive more. Would you prefer to be given:

1. 1,000 dalasis tomorrow or 1,100 dalasis in one month?

SINGLE-SELECT timpre1

01 ○ 1,000 tomorrow
02 ○ 1,100 in one month

2. How about 1,000 dalasis tomorrow or 1,200 dalasis in one month?

SINGLE-SELECT timpre2

01 ○ 1,000 tomorrow
02 ○ 1,200 in one month

3. How about 1,000 dalasis tomorrow or 1,400 dalasis in one month?

SINGLE-SELECT timpre3

01 ○ 1,000 tomorrow
02 ○ 1,400 in one month

RISK AND SAVINGS BEHAVIOR

RISK AND SAVINGS BEHAVIOR

RISK ATTITUDE

STATIC TEXT

Imagine a millionnaire has given you 100,000 dalasis to support youself. Almost immediately after you collect, you receive the following financial offer from a reputable bank, the conditions of which are as follows: There is the chance to double the money within two years. It is equally possible that you could lose half of the amount invested

1. How much of your money will you give to the bank?

SINGLE-SELECT risk1

01 ○ 0
02 ○ 20,000
03 ○ 40,000
04 ○ 60,000
05 ○ 80,000
06 ○ 100,000

2. Are you generally a person who is willing to take risks or do you try to avoid taking risks?

I Please ask the respondent to choose a relevant option, the value 0 means not a t all willing to take risks and the value 10 means very willing to take risks.

SINGLE-SELECT gpeprisk

01 ○ 0
02 ○ 1
03 ○ 2
04 ○ 3
05 ○ 4
06 ○ 5
07 ○ 6
08 ○ 7
09 ○ 8
10 ○ 9
11 ○ 10

SAVINGS BEHAVIOR

3. In a good month, how much are you able to save?

NUMERIC: INTEGER save

E1 save>=0
M1 Sorry, answer cannot be negative

4. Which of the following statements best describes your current cash savings?

SINGLE-SELECT persav

E1 IsAnswered(self)
M1 Please provide an answer to this question

01 ○ More than enough
02 ○ Enough for regular consumption needs and small unexpected expenditures
03 ○ Just enough for regular consumption needs
04 ○ Not enough for consumption needs
05 ○ Does not save

5. How much do you hope to save over the next 12 months?

NUMERIC: INTEGER hosave

I If respondent does not plan to save, type zero.
E1 hosave>=0
M1 Sorry amount cannot be negative

TIME PREFERENCE II

STATIC TEXT

Nowthe option will be to receive it either in 6 months or in 7 months.If you wait one month you will receive more. Please make your decisions based on howyou expect you would answer if the choice were actual and not hypothetical.Would you prefer to be given:

1. 1,000 dalasis in 6 months or 1,100 dalasis in seven months?

SINGLE-SELECT timpre21

01 ○ 1,000 in 6 months
02 ○ 1,100 in 7 months

2. 1,000 dalasis in 6 months or 1,200 dalasis in seven months?

SINGLE-SELECT timpre22

01 ○ 1,000 in 6 months
02 ○ 1,200 in 7 months

3. 1,000 dalasis in 6 months or 1,400 dalasis in seven months?

SINGLE-SELECT timpre23

01 ○ 1,000 in 6 months
02 ○ 1,400 in 7 months

TRANSLATOR

Was a translator involved?

SINGLE-SELECT translator

01 ○ Yes
02 ○ No

APPENDIX A — OPTIONS

[1] indasset: 12. Which of the following assets do you own?
Options: 1: Radio, 2: Bicycle, 3: Sewing Machine, 4: Cooking pot, 5: Cassette/CD Player, 6: Bed, 7: Cooking Stove (Sinkiru/Oss), 8: Bench, 9: Chair, 10: Foam Mattress, 11: Straw Mattress, 12: Kerosene Lamp, 13: Metal Trunk (Wulis/Wulisoo), 14: Motorcycle, 15: Cupboard, 16: Land, 17: TV, 18: Sofa, 19: TV stand, 20: center table, 21: Motor vehicle, 22: None

[2] poccup: 9. Primary occupation
Options: 1: Market vendor, 2: Street vendor, 3: Farmer, fischerman, hunter, logger and related work, 4: Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers, 5: Hairdressers, Beauticians and Related Workers, 6: Machinery Mechanics and Repairers, 7: Building and related trade works, 8: Government official, 9: Retired personnel, 10: Administrative or clarical work, 11: Manson, Capentry Welderman, Mechanic, and related work, 12: Wage laborer, 13: Civil servant, 14: Miners, quarrymen and related workers, 15: Driver, Tricycle, or other transaport related jobs, 16: Houseworker (without wage) and unemployed student, 17: Unemployed, 99: Others

LEGEND

Legend and structure of information in this file