BANKING THE POOR VIA SAVINGS ACCOUNTS: EVIDENCE FROM A FIELD EXPERIMENT[*]

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Abstract

In a setting with low penetration of bank accounts, I randomly gave access to bank accounts with zero fees at local bank branches to a large sample of female household heads in Nepal. The zero fees and physical proximity of the bank led to high take-up and usage rates compared to similar studies in other settings. However, impact on income, aggregate expenditures, and assets are too imprecisely estimated to draw a conclusion. I do find reallocation of expenditures across categories (e.g. more spending on education and meat and fish, and less on health and dowries), and higher ability to cope with shocks. On qualitative outcomes, I find households report that their overall financial situation has improved. The lack of a clear story on mechanisms, yet strong result on aggregate self-perception of financial wellbeing, is consistent with access to quality savings accounts leading to household improvements via multiple mechanisms.

JEL Codes: D14, O16, G21
Keywords: savings accounts, financial access, transaction costs

1 Introduction

Saving promotes asset accumulation, helping to create a buffer against shocks and to relax credit constraints, thus it may provide an important pathway out of poverty. Although increasing evidence shows that the poor are willing and able to save, they do so largely through informal mechanisms, such as storing cash at home, joining savings clubs, and buying livestock and durable goods, which are illiquid and riskier than bank accounts (Collins, Morduch, Rutherford, and Ruthven 2009; Karlan and Morduch 2010; Dupas and Robinson 2013b; Rutherford 2000). Unfortunately, the majority of the world's poor generally lack access to formal savings accounts or banking services of any kind (Demirguc-Kunt and Klapper 2012).

This study examine the impact of offering a savings account with minimum transactions costs, i.e. zero fees and high proximity to a bank-branch. Would poor households open and use such a savings account if given access to one? Would this access help them to save, accumulating small sums into large sums? Would there be any asset accumulation or welfare effects?

I address these questions via a randomized field experiment that considers a large and diverse sample of households. Access to a simple bank account—with no opening, maintenance or withdrawal fees—was randomly offered to a sample of 1,118 female household heads in 19 slums in Nepal.[1] The account that was offered operates through local bank-branches. Through this experiment, I assess the causal impact of access to the bank account on household saving behavior, asset accumulation, expenditures, and income. I use two data sources: detailed household surveys at baseline and a year after the start of the intervention, and bank administrative data.

My results show, first, that there is untapped demand for savings accounts without opening, maintenance, or withdrawal fees, and proximity to local bank-branches: 84% of the households that were offered the account opened one. Second, the poor do save: 80% of the households that were offered the account used it frequently, making

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[1]Female household head is defined here as the female member taking care of the household. Based on this definition, 99% of the households living in the 19 slums were surveyed.

deposits of about 8% of their weekly income 0.8 times per week. Households slowly accumulated small sums into large sums that they occasionally withdrew.

Despite the high take-up and usage rates, the impact on monetary assets and total assets for treatment households compared to control households, a year after the savings accounts were offered, is too imprecisely estimated to draw a conclusion. Likewise, the aggregate expenditures measure is too noisy to detect a statistically significant impact. Nevertheless, the treatment had a positive and statistically significant effect on households' expenditures on education, meat and fish consumption, and festivals and ceremonies, and a negative effect on other items. Thus, it appears that treatment households might have re-allocated their expenditures across items. Such explanation would be consistent with the account holders' withdrawal reasons (from the bank administrative data), as well as with the reasons treatment households reported they save in the account. Finally, financial access appear to have somewhat improved the household's self-reported financial situation.

Overall, my findings show that, if given access to a basic savings account with minimum transaction costs, poor households do use it with high frequency. While I cannot find a statistically significant effects on assets, access to a savings account seems to help poor households to manage their resources better, changing their expenditures across categories, although not in aggregate levels, and to report that their overall financial situation has improved.

This study contributes to a better understanding of the characteristics that poor households may value in a formal savings account and that may help explain take-up and usage. The take-up and, especially, usage rates of the savings account offered in this study are much higher than the ones found in other studies. A comparison of the account features of the savings account considered in this study with those offered in other interventions suggests that poor households appear to value a savings product that is associated with low transaction costs in the form of proximity to a local bank-branch and no fees, and that is offered by a trusted banking institution. Distance from a bank-branch has been proposed as a reason for low usage of a savings

account (Brune, Giné, Goldberg, and Yang 2014). Also, as suggested by anecdotal and survey evidence from Banerjee and Duflo (2011) and Dupas, Green, Keats, and Robinson (forthcoming), high fees may discourage usage. Furthermore, lack of trust in the banking institutions was reported as one of the main reasons people did not begin saving in their account by Dupas et al. (forthcoming). Hence, consistent with Karlan, Ratan, and Zinman (2014), decreasing transaction costs and improving trust in banking institutions increases the effective usage of formal savings products by the poor.

Another relevant result of this study is to show that, despite the lack of target-based commitments, households are able to accumulate small sums into large sums that are invested in targeted expenditure categories, such as education and food consumption. An account without an explicit commitment might have advantages and disadvantages for the poor. On the one hand, poor households might value such a savings account as they can dip into their savings to address a shock, while permitting them to safely store their money in good times. On the other hand, liquidity might be an obstacle for accumulating savings. While few randomized experiments have shown that commitment savings products help current or former bank clients and cash crop farmers to save for a specific purpose, exercising their self-control early on (Ashraf, Karlan, and Yin 2006b; Brune et al. 2014), this study shows that poor households are able to save even with savings account without explicit commitments.

My paper contributes to the rapidly growing literature studying the impact of providing access to ordinary savings accounts,[2] as well as commitment savings accounts,[3] to different samples of individuals and households on a variety of outcomes.

This study is also linked to the non-experimental literature that shows that providing access to financial services to the poor appears to increase income and reduce poverty (Aportela 1999; Burgess and Pande 2005; Bruhn and Love 2009).

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[2]e.g., Ashraf, Karlan, and Yin 2006a; Brune et al. 2014; Cole, Sampson, and Zia 2011; Dupas et al. forthcoming; Dupas and Robinson, 2013a; Kast and Pomeranz 2014; McConnell 2012; and Schaner 2013.

[3]e.g., Ashraf et al. 2006b; Brune et al. 2014; Karlan and Linden 2014; Karlan, McConnell, Mullainathan, and Zinman 2012; Karlan and Zinman 2013; and Kast and Pomeranz 2014.

The following section describes the field experiment, the savings account, and the data. Section 3 shows and discusses the results in terms of take-up and usage. Section 4 measures the impact of access to the savings account on assets, liabilities, and net worth. Section 5 estimates the effects on household welfare, focusing on expenditures and perceived financial situation. Finally, Section 6 concludes.

2 Background and Experimental Design

The field experiment took place in 19 slums in the area surrounding Pokhara, Nepal's second largest city. Some of these slums are right at the outskirts of the city, whereas others are farther out in semi-rural and rural areas. This variation allowed me to have a large and diverse sample of households.

2.1 Savings Institutions in Nepal

Formal financial access in Nepal is very limited: 26% of Nepalese households have a bank account, according to the nationally representative "Access to Financial Services Survey," conducted in 2006 by the World Bank (Ferrari, Jaffrin, and Shrestha 2007). Access is concentrated in urban areas and among the wealthy. Thus, most households typically save via microfinance institutions, savings and credit cooperatives, and Rotating Savings and Credit Associations (ROSCAs).[4] Also, households commonly have cash at home and save in the form of durable goods and livestock.

The main reasons reported in the nationally representative survey for not having a bank account are transaction costs, especially distance from banking institutions, and complicated deposit and withdrawal procedures. In addition, among those households that reported having a bank account, usage is low: 54% of these households report going to the bank less than once a month.[5] Furthermore, having a bank account does

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[4] A ROSCA is a savings group formed by individuals who decide to make regular cyclical contributions to a fund in order to build together a pool of money, which then rotates among group members, being given as a lump sum to one member in each cycle.

[5] Going to the bank is a very good proxy of account usage because online banking is almost nonexistent in Nepal.

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not necessarily mean that savings are deposited there. Only 37% of the households that had an account and had savings in the previous year declared that they had deposited money in the account. Moreover, banks typically charge high opening, withdrawal, and maintenance fees and require a minimum balance.[6]

In the sample considered in this study, prior to the intervention, only 17% of the households have a bank account, 35% less than in the national sample. This is consistent with the fact that banks in Nepal tend to serve urban areas and the wealthy (Ferrari et al. 2007). In fact, in the sample considered in this study, only some of the slums are in urban areas and the average household earns $3 a day and has an average size of 4-5 people. In line with the figures reported in the nationally representative survey, 18% of the sample were members of a ROSCA, and 54% belonged to a microfinance institution or savings cooperative at baseline. Similarly to the nationally representative sample, distance from banking institutions helps to explain why households are unbanked. Indeed, there are no bank offices in the slums in which the sample population lives, and the vast majority of bank branches are located in the city center. Analysis of baseline data shows that an increase in transportation costs as a fraction of monetary assets is negatively correlated with the probability of having a bank account.

Considering loans, according to the Access to Financial Services Survey, 68% of Nepalese households have an outstanding loan, whether from a formal financial institution, informal provider, or both. Moreover, when considering all the sources for loans, microfinance institutions and savings and credit cooperatives are by far the largest providers (28%), followed by banks (24%) and family and friends (20%). In the sample considered in this study, at baseline, the fraction of households with at least one outstanding loan is 89%, 24% greater than in the national sample. This is consistent with the low level of income and the high vulnerability to shocks of the households in the sample. Furthermore, MFIs provide 34% of the total loans in the

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[6]Minimum balance requirements vary from bank to bank and depend on the savings account type. Among the ten Nepalese banks with most branches, the most common minimum balance requirement is Rs. 500, equivalent to about $7, as Rs. 70 were approximately $1, during the intervention period.

sample, family and friends 24%, while banks only 4%.

Finally, Ferrari et al. (2007) state that an estimated 69% of foreign remittances come through informal channels, usually family and friends, even among households with a bank account. In the sample considered in the study, at baseline, one third of the households who declared remittances as a source of income have a bank account. However, this does not necessarily imply that the account is used to receive remittances.

2.2 The Savings Account

I worked in collaboration with GONESA, a non-governmental organization (NGO), operating in 21 slums in the area of Pokhara, Nepal.[7] In the early 1990s the NGO began to establish and manage one kindergarten center in each area. In 2008, GONESA started operating as a bank and began offering formal savings accounts. The accounts are very basic but have all the characteristics of any formal savings account.[8] The enrollment procedure is simple and account holders are provided with an easy-to-use passbook savings account. Customers can make transactions at the local bank-branch offices in the slums, which are open twice a week for three hours,[9] or during regular business hours at the bank's main office, located in downtown Pokhara. Nevertheless, this option is inconvenient because it requires customers to spend time and money to travel to the city center. For safety considerations, the bank capped both deposits and withdrawals made in the slums at Rs. 30,000. Thus, if an account holder wanted to make a deposit or withdrawal above the cap, she had to go to the bank main office. Nevertheless, nearly all transactions' amounts were below the cap.[10] Only 1% of the 21,450 transactions (i.e. withdrawals plus deposits), 13% of the 1,588 withdrawals,

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[7]Two of the 21 slums were used to pilot the savings account. The field experiment analyzed in this study was then conducted in the remaining 19 slums.

[8]The product offered by GONESA in this field experiment is the result of focus groups, product design, and pilot testing that I conducted jointly with the NGO.

[9]The established weekdays and business hours of each bank-branch office were publicly announced at the start of the intervention and did not change.

[10]In the one-year period considered in this study, according to the bank administrative data, only three withdrawals and one deposit were above the cap (and took place at the bank's main office).

and 18 of the 19,862 deposits made in the first year of operations took place in the bank's main office.

The bank does not charge any opening, maintenance, or withdrawal fees and pays a 6% nominal yearly interest (inflation is above 10% in Nepal[11]), similar to the average alternative available in the Nepalese market (Nepal Rastra Bank, 2011). In addition, the savings accounts have no minimum balance requirement.[12] Finally, the savings account operates without any commitment to save a given amount or to save for a specific purpose.

2.3 Experimental Design and Data

Before the introduction of the savings accounts, a baseline survey was conducted in May 2010 in each slum. All households with a female head ages of 18-55 were surveyed and the female household head was interviewed.[13] This survey collected information on household composition, education, income, income shocks, monetary and non-monetary asset ownership, borrowing, and expenditures on durables and non-durables. In total, 1,236 households were surveyed at baseline.

After completion of the baseline survey, GONESA bank progressively began operating in the 19 slums between the last two weeks of May and the first week of June 2010, as follows. A pre-announced public meeting was held in each slum. Anybody in the village who wanted to attend the meeting could attend.[14] At this meeting, participants were told (1) about the benefits of savings; (2) that GONESA bank was about to launch a savings account; (3) the characteristics of the savings account; (4) what the savings account could help them with and how they could use it; and (5) that the savings account would only be initially offered to half of the households via a public lottery. The short public talk was given by an employee of the bank with

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[11]The International Monetary Fund Country Report for Nepal (2011) indicates a 10.5% rate of inflation during the intervention period.

[12]The account's conditions were guaranteed for as long as the participants chose to have an account open; in other words, the bank did not impose any time limit.

[13]The same respondent interviewed at baseline was interviewed at endline.

[14]Attendance did not increase one's probability of being offered an account.

the support of a poster and was followed by a short session of questions and answers. The main aim of the session was to provide some kind of financial literacy on the benefits of savings and savings accounts to the entire sample so that the effect of the intervention would be mainly caused by the offer of the accounts.[15] Then, separate public lotteries were held in each slum to randomly assign the female household heads to either the treatment group or the control group. There was no stratification beyond village.[16] Moreover, the number of individuals within each slum who would have been offered the account was set for each public lottery. In each slum, every female household head interviewed at baseline was entered in the lottery. Half of the women in each slum were assigned, through a public lottery, to the treatment, the other half to the control group.[17]

In total, 567 women were randomly assigned to the treatment group and were offered the option of opening a savings account at the local bank-branch office;[18] the rest were assigned to the control group and were not given this option, but were not barred from opening a savings account at another institution.[19] Treatment households could open the account on the first and subsequent days in which the bank was opened in the slums, usually one to five days after the lottery.[20] In order to open an account a person needed to stand in line twice on two separate days: one day to have a picture taken and to fill in an application, and a second day to receive the material related to the account (account number, passbook, etc.).

A year after the beginning of the intervention, in June 2011, the endline survey was

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[15]Only one public session was held in each slum. There were no individual marketing sessions.

[16]GONESA required that the random assignment into treatment and control groups be done publicly with balls in an urn, making stratification based on occupation or income infeasible.

[17]If in a village there was an odd number of women, the 50% + 1 woman was assigned to the treatment group.

[18]The offer did not have a deadline.

[19]Only 12% of the control households who declared not to have an account in the baseline survey, reported to have one in the endline survey. Similarly, 11% of the treatment households who declared not to have an account at baseline, reported to have one (aside from the account offered in the field experiment) in the endline survey.

[20]The vast majority of account holders opened the account within the first month (22%, 45%, 17% and 16% of the account holders opened the account in the first, second, third, and fourth week, respectively).

conducted. In addition to the modules contained in the baseline survey, information on household expenditures and networks was also collected. The survey included questions specifically addressed to the treated group that were aimed at understanding the role played by supply and demand factors in explaining take-up and usage of the account. Of the 1,236 households interviewed at baseline, 91% (i.e., 1,118) were found and surveyed in the endline survey.[21] Attrition for completing the endline survey does not differ statistically between treatment and control households and is not correlated with observables, as shown in the Appendix Table A1. Hence, performing the analysis on the restricted sample for which there is endline data should not bias the estimates of the treatment effect.

Finally, for the analysis presented in this paper, I also use GONESA bank's administrative data on savings account usage. These data include date, location (local bank-branch office or main office), and amount of every deposit and withdrawal, as well as the withdrawal reason, for all of the treatment accounts.[22]

2.4 Sample Characteristics and Balance Check

My sample comprised households whose female heads were, on average, 37 years old and had less than three years of schooling (see Table 1A). Roughly 90% of respondents were married or living with their partner. The average household size at baseline was 4-5 people, two of whom were children.

Weekly household income at baseline averaged Rs. 1,687 (equivalent to about $24, as Rs. 70 were approximately $1 during the intervention period) although there is considerable variation. Households earned their income from varied sources: working as an agricultural or construction worker, collecting sand and stones, selling agricultural products, raising livestock and poultry, running a small shop, working as a driver or helper, making and selling wool and garments, working as a teacher, receiv-

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[21]Considering treatment and control groups separately, 91% and 90% of the households in each group were found, respectively. Those households that could not be tracked had typically moved out of the area, with a minority leaving the country.

[22]Households were not required to provide the reason of their withdrawal to the bank employee managing the transaction. Provision of such information was optional.

ing remittances and pensions, and collecting rents. Only 17% of the households listed an entrepreneurial activity as their primary source of income.[23] Also, the majority of households (84%) reported living in a house owned by a household member, and 78% reported owning the plot of land on which the house was built.

Table 1B shows households' assets and liabilities at baseline. Total assets owned by the average household had a value of more than Rs. 40,000. Monetary assets accounted for 35% of total assets. Non-monetary assets—consumer durables, and livestock and poultry[24]—accounted for the remaining 65%. As mentioned previously, 17% of the households were banked at baseline, 18% had money in a ROSCA, and 54% stored money in a microfinance institution (MFI). Households also typically had more than one week's worth of income stored as cash in their home.

Considering liabilities, as mentioned earlier, 89% of the households had at least one outstanding loan. Most loans are taken from shopkeepers (40%), MFIs (38%), family, friends, or neighbors (31%), and moneylenders (13%). Formal loans from banks are rare, with only 5% of the sample reporting an outstanding loan borrowed from a bank.

Summary statistics from Table 1B show a high level of participation by the sample population in financial activities. However, most transactions are carried out with informal partners, such as kin and friends, moneylenders, and shopkeepers rather than with formal institutions like banks. This is consistent with previous literature showing that the poor have a portfolio of financial transactions and relationships (Banerjee, Duflo, Glennerster, and Kinnan forthcoming; Collins et al. 2009; Dupas and Robinson 2013a; Rutherford 2000).

Finally, going back to Table 1A, the sample population seems highly vulnerable to shocks; 41% of the households indicated having experienced a negative external

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[23] I code as entrepreneurial activities: having a small shop, working as a driver, raising and selling livestock and poultry, selling agricultural products, making and selling wool and garments, and making and selling alcohol.

[24] Livestock and poultry include goats, pigs, baby cows/bulls/buffaloes, cows, bulls, buffaloes, chickens, and ducks.

income shock during the month previous to the baseline survey.[25] Of the households, 52% coped with a shock using cash savings, 43% coped by borrowing (17% from family and friends, 17% from a moneylender, and 9% from other sources). Only 1% reported coping by cutting consumption or selling household possessions, possibly suggesting that households have some ability to smooth consumption when facing a negative shock.[26]

Overall, Tables 1A and 1B show that for the final sample considered for the analysis (i.e., those 1,118 households that completed both the baseline survey and the endline survey), treatment and control groups appear to be balanced along all characteristics.[27]

3   Results: Take-Up and Usage

Of the 1,118 households included in the final sample, 567 were given the opportunity to open a savings account. As shown in Table 2, 84% opened an account and 80% used it actively, making at least two deposits within the first year of being offered the account.[28]

To study the determinants of take-up and active use of the account I restrict the sample to the treatment group, i.e. those individuals ever offered the account.[29] Results, reported in the Appendix Table A2, show that take-up and active use of the account are positively related to having a bank account at baseline, and negatively related to earning income from an entrepreneurial activity. Moreover, belonging to

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[25]Shocks include health shocks, lost job, livestock loss, broken/damaged/stolen goods or equipment, low demand for business, decrease in the wage rate, and death of a household member.

[26]An alternative explanation could be that shocks were small in economic terms.

[27]The analysis carried out in this paper focuses on those 1,118 households that completed both the baseline survey and the endline survey. However, the initial sample of 1,236 households that completed the baseline survey is also balanced.

[28]For the original sample of 1,236 households surveyed at baseline, take-up and usage rates are not different: 622 were given the opportunity to open a savings account, 82% took up the account, and 77% used it actively.

[29]Take-up is a binary variable equal to 1 if the account was opened. Active use is a binary variable equal to 1 if the account holder made at least two deposits within the first year of being offered the account.

an MFI increases the probability of opening an account by 5%. None of the other explanatory variables however, are statistically significant. This is not surprising given that more than 80% of those offered an account opened one and used it actively.

The majority of the transactions that treated households made during the study period were deposits. In fact, as shown in Table 2, account holders made an average of 48 transactions: 44 deposits and 4 withdrawals. Forty-four deposits in a period of 12 months is equivalent to 0.8 deposits per week. The average amount deposited on a weekly basis was Rs. 131, roughly 8% of the average weekly household income as reported in the baseline survey. The average weekly balance steadily increased over the study period, reaching, a year after the start of the intervention, Rs. 2,362 for the average account holder.[30] Account holders did not demonstrate a significant preference for making deposits either sooner or later in the week. Rather, deposits were evenly distributed between the first and second day of the week in which the bank was open in the village, and were of very similar amounts. Nevertheless, the fact that the local bank branch is open on pre-established days and at predetermined times could potentially cause some kind of "reminder effect" and help the account holders develop some habit formation to save regularly.[31] Similarly, the limited opening hours might have acted as an implicit commitment for some households. While this could be the case, households could make withdrawals during regular business hours, as in any other bank, at the bank's main office. In fact 13% of the withdrawals took place in the banks main office. Moreover, treated households did not perceive to be limited in their access to the bank. In fact, 70% of the account holders reported as the account feature they values the most the ability to easily deposit and withdraw any amount of money any time (see Appendix Table A3, Panel B).

Comparisons of savings account balances across time show that households differ in savings behavior. Savings were accumulated at different rates by each household,

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[30]Bank administrative data on the interest rate accrued in a year by each account show that, on average, account holders earned a yearly interest of Rs. 126.

[31]Previous research has shown that reminders, via text messages or self-help group meetings, have a positive effect on savings (Karlan et al. 2012; Kast, Meier, and Pomeranz 2011).

depending on the frequency and size of deposits. Moreover, although 17% of the households with a bank account actively deposited money over the course of the year without making a single withdrawal, the majority accumulated small sums into larger sums that then were eventually withdrawn, in full or in part.

Households also had different savings motives. Bank administrative data showed that the main reasons for withdrawing money were to pay for a health emergency (17%), to buy food (17%), to repay a debt (17%), to pay for school fees and materials (12%), and to pay for festival-related expenses (8%). Hence, the savings accumulated in the account were reportedly used for both planned expenditures and unexpected shocks. The average size of a withdrawal was Rs. 1,774, slightly more than a week's household income.

Figures 1 and 2 show the number of withdrawals made in any given week for the five main withdrawal reasons listed above. Figure 1 considers withdrawals made for education (school fees and school material) and festival-related expenditures. These expenditures can be considered planned because the start of the school year and the religious festivals happen on (arguably known) precise dates. In fact, withdrawals for education-related expenditures spiked 49 weeks after the accounts had been offered (i.e., during the week of April 18-24, which corresponds to the first week of school for the Nepalese academic year 2011-2012). Similarly, withdrawals for festival-related expenditures spiked at weeks 17, 22, 25, 35, 47, and 51 in correspondence with the Teej festival, Dashain festival (which is considered the most important and lasts a week), Tihar festival, Maghe Sankranti, New Year according to the Nepali calendar, and Dumji festival, respectively.[32]

Figure 2 illustrates withdrawals made for health-related expenditures, to buy food when income was low, and to repay a debt. There are not particular dates on which withdrawals spike. This is partly explained by the fact that these are unplanned expenditures incurred due to a negative shock to health or employment that occurred

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[32]During the intervention period (i.e., May 2010-May 2011) the Teej festival happened on September 11, Dashain festival from October 17-23, Tihar festival from November 4-8, Maghe Sankranti on January 15, Nepali's New Year on April 14, and Dumji festival on April 25.

randomly or that happened in the past, for which a loan was taken out. Hence, households might be using the savings in the account as a buffer.

The administrative data are in line with the motives for saving as reported by the households that had an account in the follow-up survey a year after the introduction of the bank accounts (see Appendix Table A3, Panel A.) The top five reported reasons for withdrawing the money saved in the account were health, consumption smoothing, education, to pay for festival-related expenses, and to repay a debt.

The picture that emerges from the savings motives reported by the treated households in the sample tends to indicate that households might value access to a savings account for different reasons than entrepreneurs do. When given access to the basic savings account, households generally did not report using the money saved in the account for microenterprise development, as entrepreneurs do (Dupas and Robinson 2013a).[33] Nevertheless, they still reported using their savings to make productivity-enhancing investments, such as education-related expenditures, and to smooth consumption.

The bank administrative data also suggests that, given the high frequency of deposits and the small size of weekly deposits, households seem to slowly accumulate small sums into large sums. This saving behavior is very different from that observed in entrepreneurs. In Dupas and Robinson (2013a), entrepreneurs in Kenya made few and large deposits, equivalent to about 25% of their weekly income.

3.1 Discussion on Take-Up, Usage, and Account Features

A comparison of take-up and usage, and account features of the savings account considered in this study with those offered in similar interventions could shed some light on the characteristics that the poor value in savings products. Table 3 reports, for each of the studies that offered a savings account, the following information: the country in which the field experiment took place; the setting (rural, semi-urban, urban); the

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[33]Only 5% of the treated households withdrew to buy poultry or livestock, or to invest in their current business. However, when restricting the sample to those households whose main source of income comes from an entrepreneurial activity, this percentage raises to 13%.

target population (banked/unbanked, male/female, entrepreneurs, farmers, salaried workers, students, etc.); the type of account offered (ordinary, commitment, etc.); whether the account charges opening fees and/or minimum balance fees; whether there are withdrawal fees; whether there are deposit fees; the nominal interest rate and inflation rate; the take-up rate; and the usage rate.[34] Five studies offered an ordinary savings account (Ashraf et al 2006a, Cole et al. 2011, Dupas and Robinson 2013a, Dupas et al. forthcoming, Schaner 2013), one study offered an ordinary savings account with text message reminders (McConnell 2012), two studies offered ordinary and commitment savings accounts (Brune et al. 2014, Kast and Pomeranz 2014), and four studies offered commitment accounts (Ashraf et al. 2006b, Karlan and Linden 2014, Karlan et al. 2012, Karlan and Zinman 2013).

Compared to other studies that offered an ordinary savings account with no opening or minimum balance fees, there is large variation in take-up rates. On the one side, Dupas and Robinson (2013a) obtained an 87% take-up rate when offering the option to open an account to a sample of microentrepreneurs in rural Kenya; Dupas et al. (forthcoming) found a 62% take-up rate when offering the option to open an account to a random subset of unbanked individuals in rural Kenya; and Schaner (2013), who offered to 749 previously unbanked couples in rural Kenya both individual and joint savings account, obtained that all couples opened at least one account.[35] On the other side, Ashraf et al. (2006a) found a 28% take-up rate when offering a savings account to 346 existing or former clients of a rural bank in the Philippines; McConnell (2012) obtained a 12% when offering a savings account to 1,601 market vendors in Ghana, 39% of which were already are banked; and Cole, Sampson, and Zia (2011) found a take-up rate of around 10% among unbanked households in rural and urban Indonesia, despite the fact that a $3-$14 subsidy was provided for opening an account.

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[34]Not all this information was available for the studies reported. When the information was not available, it was noted with NR, as in not reported.

[35]5% of the couples chose to open all three accounts offered (one of for each partner and a joint account).

Since the take-up rates of the ordinary savings accounts offered in Dupas and Robinson (2013a), Dupas et al. (forthcoming), and Schaner (2013) are the most similar to the one in my study (84%), I continue the comparison with these studies. As mentioned earlier, 80% of treatment households in my study used the account actively, making at least two deposits in a year.[36] The usage rates in these other three studies are much lower. In Dupas and Robinson (2013a), 41% of their treatment entrepreneurs used the account actively (making at least one transaction within the first six months), while in Dupas et al. (forthcoming) only 18% of the treatment individuals used the account actively (making at least two deposits in a year), and in Schaner (2013) 22% of the accounts were active, i.e. received at least one deposit within the first six months.

These differences in usage rates could be due to many reasons including the different contexts considered and differences in the savings products offered. First, diverse savings behaviors and informal saving options available to the poor in Kenya and Nepal might partly explain this variation in usage rates. Formal and informal savings options in Kenya and Nepal however, are comparable in terms of features, costs, and convenience. Moreover, previous literature has shown that the poor want to save and do so using several savings mechanisms that are similar across countries (Collins et al. 2009; Rutherford 2000).

A second explanation may be the lack of trust in banking institutions and their service reliability. While trust, does not seem to be an issue in Nepal, it is in Kenya where, among the three main reasons people do not use their bank accounts, are lack of trust in banking institutions and unreliable service (Dupas et al. forthcoming).[37] In my sample, trust in the banking institution that offered the account was considered the most valued account feature by only 9% of the users.[38] This could also be explained

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[36]When considering only the treated households (i.e. those that when offered an account decided to open one) the percentage of active users is 95%.

[37]Part of the reason could be due to the fact that in Nepal insurance of deposits up to Rs. 200,000 is mandatory for banks and financial institutions in order to safeguard savings of small depositors.

[38]Detailed percentages on the account features most valued are reported in Appendix Table A4, Panel B.

by the fact that households in my sample knew the GONESA since the 1990s, thus it might have been easier for them to entrust their money with GONESA bank.

Third, rural versus semi-urban and urban settings, where the risk of theft of cash kept at home might be higher might explain the variation in usage rates. Dupas and Robinson (2013a), Dupas et al. (forthcoming), and Schaner (2013) consider a rural setting, while the households considered in my sample live in rural, semi-urban, and urban settings. Nevertheless, the bank administrative data do not show any differences in usage rates when comparing frequency and amounts of deposits, and frequency of withdrawals between households living in semi-urban and urban areas compared to the ones living in rural areas.

Fourth, diverse occupations (e.g., entrepreneurs versus non-entrepreneurs) could also explain such differences in usage rates. Nevertheless, the bank administrative data do not show any differences in usage rates when comparing frequency and amounts of deposits, and frequency of withdrawals between households involved in entrepreneurial activities and the rest of the sample.[39]

Aside from the differences in the contexts considered, differences in the characteristics of the savings products offered might also matter. A likely explanation for the differences in usage rates may rely on the minimum transaction costs of the savings product offered, due to proximity to local bank-branches and the lack of fees.

The account offered aimed at improving convenience by enabling customers to make transactions, not only during business hours at the bank's main office, but also at the local bank-branch offices in the slums, opened twice a week for three hours. Physical proximity to a local bank-branch seems to matter: 99% of total transactions made by account users over the first year took place in the local bank-branches, despite the fact that they were open only twice a week for three hours. Moreover, as mentioned previously, 70% of the account holders reported as the account feature they values the most the "ability to easily deposit and withdraw any amount of

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[39]There is a difference in the average withdrawal size, which is Rs. 2,751 for households whose main source of income comes from an entrepreneurial activity and Rs. 1,578 for the rest of the sample.

money any time." This is consistent with the finding that, at baseline, households are less likely to be banked, the higher the cost of going to the bank.[40] Similarly, the 2006 World Bank survey indicates that most Nepalese households do not have or use a bank account because of distance. Furthermore, Dupas and Robinson (2013a) discuss that the low frequency of transactions and the high median deposit size, in their sample, are consistent with the fact that, as the bank's business hours were inconvenient, individuals saved up for some time and then deposited larger sums, instead of building up savings balances by depositing small amounts of money, as in my sample. Hence, convenience appears to be an important factor in influencing usage of a savings account.

Finally, lack of withdrawal fees may also be playing a role. Whereas in Dupas and Robinson (2013a), Dupas et al. (forthcoming), and Schaner (2013), account opening fees and minimum balance fees were waived, only in my study did withdrawal fees get waived as well. In fact, Dupas et al. (forthcoming) report survey evidence suggesting that one of the main reasons of low usage of bank accounts are expensive withdrawal fees. Moreover, anecdotal evidence from Banerjee and Duflo (2011) emphasizes the importance of high withdrawal fees in the poor's decision not to use a savings account.

Overall, the high usage rates observed in this study might be explained partly by trust in the banking institution and minimum transaction costs in the form of physical proximity to a bank-branch and zero fees. This is consistent with the constraints that may hinder the effective usage of savings products by the poor discussed by Karlan, Ratan, and Zinman (2014) in their review of the empirical evidence on access to savings accounts.

4 Results: Assets, Liabilities, and Net Worth

The high take-up and usage rates of the account that was offered suggest potential effects on asset accumulation. In this section, I study the impact of access to a formal

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[40]The cost of going to the bank is defined as the transportation cost, by bus, from each slum to the center of Pokhara, where bank-branches are, as fraction of monetary assets.

savings account on household assets a year after the start of the randomized intervention. The main outcome variables of interest are monetary assets, non-monetary assets, and total assets. Monetary assets include cash at home; money in banks; money in MFIs; money in ROSCAs; money kept for safekeeping by a friend, relative, or employer; and, for the treated households only, money they report having in the savings account they were offered by GONESA bank. Reported balances are highly predictive of actual account balances. For more than 95% of the treated households the reported balances are within a 5% difference of the actual balance they have in the account. Non-monetary assets include consumer durables, and livestock and poultry. Total assets include monetary and non-monetary assets. I also study the effect of access to a savings account on liabilities and net worth (total assets minus liabilities).

In order to quantify the effects of the intervention, I estimate the average effect of having been assigned to the treatment group, or intent-to-treat effect (ITT), on each outcome variable Y a year after the launch of the savings account.[41] I use the following regression specification:

$$Y_{i,t} = \beta_0 + \beta_1 T_i + \beta_2 Y_{i,t-1} + \beta_3 X_{i,t-1} + \lambda_v + \epsilon_{i,t} \tag{1}$$

where T_i is an indicator variable for assignment to the treatment group, $Y_{i,t-1}$ is the baseline value of the outcome variable, $X_{i,t-1}$ is a vector of baseline characteristics (age, years of education, and marital status of the account holder; number of household members; baseline household income; and three dummies for the main source of household income[42]), and ϵ_i is an error term for household i. I also include

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[41] I do not analyze the average effect for those who actively used the account because, among those who opened an account, only 5% (26/477) did not actively use it.

[42] The three dummies for the main source of household income are: income from an entrepreneurial activity, as salaried worker, and as casual worker. The omitted category is other sources of income. I coded as entrepreneurial activities: having a small shop, working as a driver, raising and selling livestock and poultry, selling agricultural products, making and selling wool and garments, and making and selling alcohol. I coded as salaried worker the following activities: government job, private job (full time), and teacher. I coded as casual worker the following activities: agricultural worker, sand and stone collector, construction worker, bus fare collector, helper, and other part-time/temporary job. The omitted category is other sources of income, i.e. pension, rent, remittances, jewelry income, and other sources.

village fixed effects λ_v because the randomization was done within village. I report the regression results both with and without controls and village fixed effects. The coefficient of interest is β_1, which estimates the intent-to-treat (ITT) effect.[43]

Table 4 presents the overall average effects of the savings account on monetary assets (columns 1-2), non-monetary assets (columns 3-4), total assets (columns 5-6), liabilities (columns 7-8), and net worth (columns 9-10). None of the intent-to-treat coefficients is statistically significant. Measures of assets, liabilities and net worth are inherently noisy and, consequently, the standard errors are large. Nevertheless, the magnitude of the ITT estimate for monetary assets (1,982.18) is similar to the average savings balance for the treatment group (calculated using the bank administrative data). In fact, as shown in Table 2, those households in the treatment group that opened an account and used it actively (80% of the treatment group, 451 out of 567), accumulated on average over the course of a year Rs. 2,362. Thus, the average household in the treatment group accumulated on average Rs. 1,889 (2,362*0.8).

Moreover, Figure 3 shows the cumulative distribution functions (CDFs) of monetary, non-monetary and total assets *at baseline* (Figure 3A) and *at endline* (Figure 3B) for the treatment (grey line) and control (dashed line) groups. At baseline, there do not seem to be any sizeable differences for any asset category. A year after the start of the intervention however, the monetary asset CDF for the treatment group appears to the right of the one for the control group, indicating the positive effect of getting access to a savings account on monetary assets. Similarly for total assets. I calculated the p-values from the two-sample Kolmogorov-Smirnov and the Wilcoxon rank-sum tests for equality of distributions functions for each asset category both at baseline and at endline. The two-sample Kolmogorov-Smirnov and Wilcoxon rank-sum tests for equality of distributions functions reject the null that the distribution of total assets and monetary assets at endline of treatment and control are drawn

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[43]Assuming that being offered the savings account does not have any other direct effect on savings other than motivating an individual to use the account, it is possible to estimate the treatment-on-the-treated effect by dividing the ITT by the take-up rate ($\frac{\beta_1}{take\text{-}up\ rate}$).

from the same population distribution.[44] Results do not change when considering as dependent variables the residuals from a regression of assets at endline on assets at baseline, thus accounting for baseline treatment-control differences in assets.[45] Nevertheless, as shown earlier, the regression estimates on the effect of access to savings accounts on assets are too imprecisely estimated to draw a conclusion.

5   Effects on Household Welfare

5.1   Household Expenditures and Weekly Income

This section studies the effects of access to a savings account on household expenditures and weekly income, and on the household perceived financial situation. Table 5 estimates the average effect of having been assigned to the treatment group on the amount spent by the household, in total and for different expenditures categories, in the 30 days prior to the endline survey.[46] The expenditure categories considered are: health, education, meat and fish, festivals and ceremonies, dowries, and other expenditures, which include clothes and footwear, personal care items, house cleaning articles, house maintenance, and bus and taxi fares. I use the same regression specification as in (1), with two differences. First, I do not control for baseline val-

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[44]The p-values from the two-sample Kolmogorov-Smirnov tests for total assets, monetary assets, and non-monetary assets *at baseline* are equal to 0.299, 0.905, and 0.467, respectively. While, the p-values from the two-sample Kolmogorov-Smirnov tests for total assets, monetary assets, and non-monetary assets *at endline* are equal to 0.047, 0.001, and 0.308, respectively. The p-values from the Wilcoxon rank-sum tests for total assets, monetary assets, and non-monetary assets *at baseline* are equal to 0.410, 0.712, and 0.520, respectively. While, the p-values from Wilcoxon rank-sum tests for total assets, monetary assets, and non-monetary assets *at endline* are equal to 0.023, 0.000, and 0.378, respectively. Imbens and Wooldridge (2009) argue that combining rank-sum tests with randomization-inference for the p-values (la Rosenbaum, 2002) is an important method for determining whether observed patterns in randomized experiments imply that the treatment had an effect on the outcome of interest.

[45]The two-sample Kolmogorov-Smirnov and Wilcoxon rank-sum tests for equality of distributions functions reject the null that the distribution of the residuals of the regressions of total assets and monetary assets at endline of treatment and control are drawn from the same population distribution. The p-values from the two-sample Kolmogorov-Smirnov tests are equal to 0.019, 0.000, and 0.354 for the residuals of the regressions of total assets, monetary assets, and non-monetary assets, respectively. Likewise, the p-values from the Wilcoxon rank-sum tests are equal to 0.020, 0.000, and 0.458 for total assets, monetary assets, and non-monetary assets, respectively.

[46]All expenditures items collected in the endline survey are included. Regarding food expenditures, only information on consumption of meat and fish was collected.

ues of expenditures, since information about household expenditure was not collected at baseline. Second, I add as additional baseline controls the amount of liabilities, having a bank account, belonging to an MFI, and belonging to a ROSCA.

Estimates show that the total household expenditures measure is too noisy to detect a statistically significant impact. Nevertheless, financial access has a positive and statistically significant effect on expenditures in education, meat and fish, and festivals and ceremonies. Treatment households spend on average 20% more in education and 15% more in meat and fish than control households. On the other side, there appears to be a negative (not statistically significant) impact on expenditures on health expenditures and dowries. Thus, it might be the case that treatment households might have re-allocated their expenditure across items. Such explanation would be consistent with the account holders' withdrawal reasons (from the bank administrative data), as well as with the reasons treatment households reported they save in the account. In fact, as mentioned earlier, bank administrative data show, among the main reasons for withdrawing money, to buy food (17%), to pay for school fees and materials (12%), and to pay for festival-related expenses (8%). This is also in line with the motives for saving as reported by the households that had an account in the follow-up survey a year after the introduction of the bank accounts (Appendix Table A3, Panel A).

As shown in Table 5, columns 5-6, access to a savings account had a positive and statistically significant effect on treatment households' expenditure on education. Regression results reported in Table 6 restrict the sample to those households with children 6-16 years of age. Estimates in columns 3-4 show that, restricting the sample to those households with children of school age, the impact of access to a savings account on the overall expenditures in education is greater. Furthermore, the endline survey collected expenditures in education in four different subgroups: school fees, textbooks, uniforms, and school supplies, such as pens and pencils. Regression results reported in Table 6, columns 5-12, show higher investments in human capital for the treatment group than for the control.

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The increase in investment in human capital appears to be on the intensive margin, not on the extensive margin. In fact, as columns 1-2 of Table 6 show, the treatment group is not more likely than the control group to have at least one of their children enrolled in school. This would be expected because an already high percentage of households with children 6-16 years of age has at least one child in school (81%). The estimated effects on the education-related expenditures are likely to be a lower estimate of the actual effects. The peak in withdrawals for education expenditures, as shown in Figure 1, was around the beginning of the school year, which happened almost two months before the start of the of the endline survey.

Next, Table 7 analyzes the effect on household weekly income and exposure to health shocks. When considering the full sample, there is no statistically significant difference in weekly income for treatment and control households. Also, access to a savings account does not appear to have reduced exposure to health risk. In fact, 23% of the treatment households and 22% of the control households were hit by a health shock, and the difference is not statistically significant.

When restricting the sample to those households hit by a health shock in the last 30 days prior to the endline, the weekly income of households hit by a shock 30 days prior to endline decreases for both treatment and control group. However, treatment households suffer smaller reductions in income than control households: the weekly income of the average treatment household is Rs. 1,325 higher than the one of the average control household (Rs. 1,799), and this difference is statistically significant. Moreover, the weekly income of the average control household hit by a shock is 40% lower than the one of the average control household in the full sample (Rs. 1,799 versus Rs. 3,012), while the weekly income of the average treatment household hit by a shock is only 15% lower than the one of the average treatment household (Rs. 3,124 versus Rs. 3,699). This evidence tends to suggest that households offered a savings account do not suffer such large changes in weekly income when hit by a health shock during the previous month as control households. This could be explained by treatment households making other investments (e.g., more meat and fish), which may increase

the households's "health capital," causing members of treatment households to be affected by a health shock less strongly than control households, and being able to recover faster, thus missing less working days.[47] Another possible explanation could be that access to savings allows for more effective treatment, leading to faster recovery for the same severity of illness. Furthermore, as columns 7-8, shows, while the effect is not statistically significant, treatment households appear to spend less on health expenditure than control households. Similarly, columns 9-10 show that treatment households appear borrow less money when hit by a health shock, though, again, the coefficient is not statistically significant. The lower health-related expenditure and loans are consistent with the treatment group's ability to recover faster from health shocks than the control.

5.2 Overall Financial Situation

Table 8 presents the average effects of access to a savings account on the households' self-assessed financial situations. The endline survey a year after the start of the intervention contained three questions aimed at measuring the household's perceived financial situation. As shown in columns 1-2, households offered the savings account are 9% more likely to describe their financial situation as "living comfortably" or "having a little left for extras." In addition, estimates from columns 3-4 indicate that treatment households are also 7% more likely not to feel very or at all financially stretched month to month. Access to a savings account, however, does not improve households' sense of financial security, as presented in columns 5-6. The fact that treatment households do not feel more financially secure, while not feeling stretched or having a little left for extras, might be consistent with the fact that, while access to a savings account might have helped households manage their resources better, feel more in control, and be better able to cope with health shocks, it did not improve their overall financial situation. In fact, households assets and income did not increase.

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[47]This finding is consistent with treatment households possibly eating a more varied diet which includes meat and fish (see Table 5, columns 7-8).

Finally, the last two columns of Table 8 report the ITT estimates for an overall measure that aggregates the three outcomes of interest considered in columns 1-6. I construct this index following Kling et al. (2007) and Karlan and Zinman (2010). First, I standardize each of the three outcome variables into a z-score by subtracting its control group mean and dividing by its standard deviation. Then, I combine the three new outcome variables into one by taking the average of equally weighted standardized components. Thus, the treatment effect for the summary index is an estimate of the average effect on each outcome variable that composes the index, in standard deviation units. Regression results reported in columns 7-8 show that access to a savings account has a positive and statistically significant effect of 0.09 standard deviation units on the "overall financial situation" index. Hence, access to a savings account appears to have improved the household's perceived financial situation.

6   Conclusion

The poor often lack access to formal financial services, such as savings accounts, and have to adopt costly alternative strategies to save. Access to formal financial services that enable saving and asset building might be important for low-income households to smooth sudden income fluctuations due to negative shocks such as medical emergencies. Savings can also provide capital to be invested in education.

I use a randomized field experiment and the combination of pre- and post-survey data with bank administrative data to study the effects of access to a savings account with minimum transaction costs, i.e. zero fees and physical proximity to a local bank-branch, on household savings behavior and welfare. My study shows that there is high demand for this type of savings accounts and that households regularly deposit small amounts of money.

Despite the high take-up rate and usage rates, access to a savings account generates minor welfare effects. Impact on assets, aggregate expenditures, and income are too imprecisely estimates to draw a conclusion. Nevertheless, access to a sav-

ings account appears to help households to manage their resources better. Treatment households reallocate expenditures across categories, have a higher ability to cope with shocks, and perceive that their financial situation has improved.

A comparison with other studies offering access to ordinary savings accounts, their settings and account features, suggests that high take-up and usage rates may partly be explained by convenient access and lack of fees of any kind, especially withdrawal fees. However, banks might not find managing small accounts appealing because of the high administration costs associated with running them. Nevertheless, it might still be in the interest of banking institutions to offer such savings accounts in order to increase its pool of clients and future borrowers. Furthermore, costs might be reduced providing access to local branches that operates for limited hours. In addition, some efforts are being made to design savings products that meet the needs of the poor and are economically viable. Adoption of new technologies such as mobile banking and banking correspondents, i.e. retail stores and post offices where banking transactions can take place, could be a promising venue, as shown in Kenya, Brazil, Mexico, and India.[48]

Some caveats apply to this study. First, I consider a general sample of poor households in Nepal; future research should assess whether the large and positive effects of offering a basic savings account without fees is generalizable to households in other countries and if offered to men as opposed to women. Similar results in other settings would validate the importance of account characteristics such as simplicity and lack of fees for poor households. Second, the design of the field experiment with randomization at the household level, rather than at the village level, does not allow me to study the general equilibrium effects of giving access to bank accounts to the entire sample of households. Although this is a relevant topic on which future work should focus, my study aimed at first showing that basic savings accounts are in high demand and positively affect households' savings and investment behavior.

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[48]See Kendall (2010) and Mas and Radcliffe (2010) for mobile banking; McKinsey and Company (2010) and Reserve Bank of India (2006) for banking correspondents.

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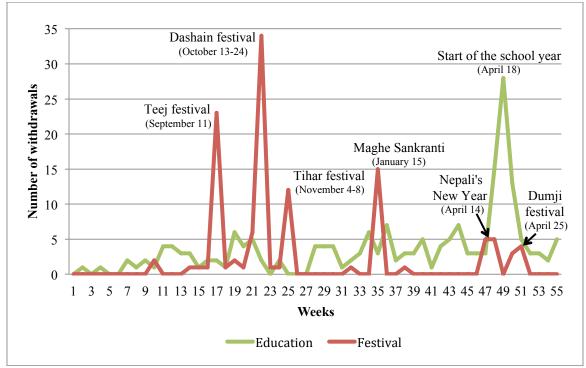**Figure 1: Number of withdrawals per week for education- and festival-related expenditures**
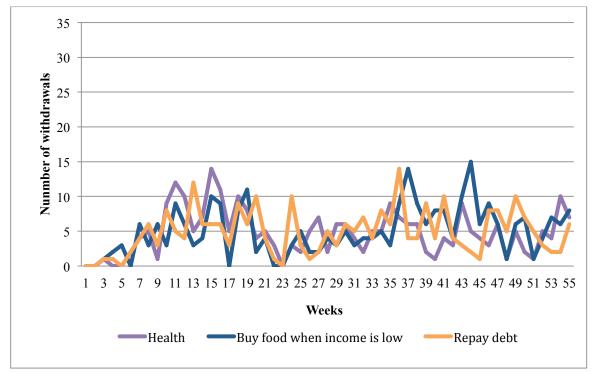

Figure 2: Number of withdrawals per week for health-related expenditures, to buy food when income is low, and to repay a debt
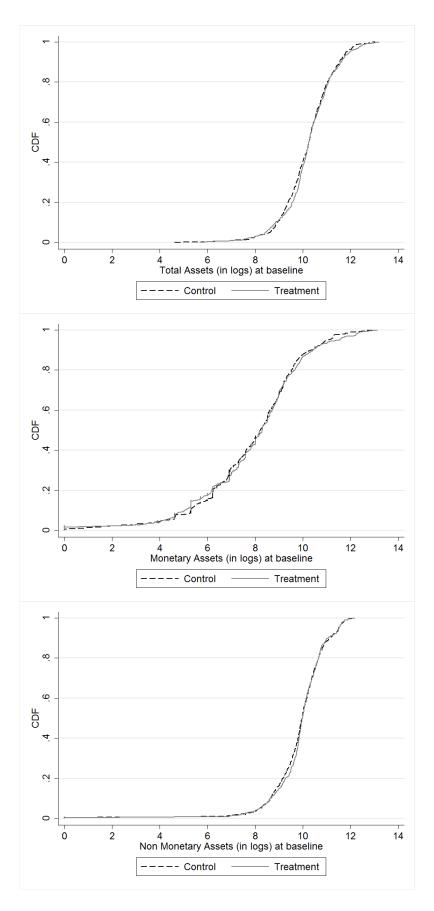
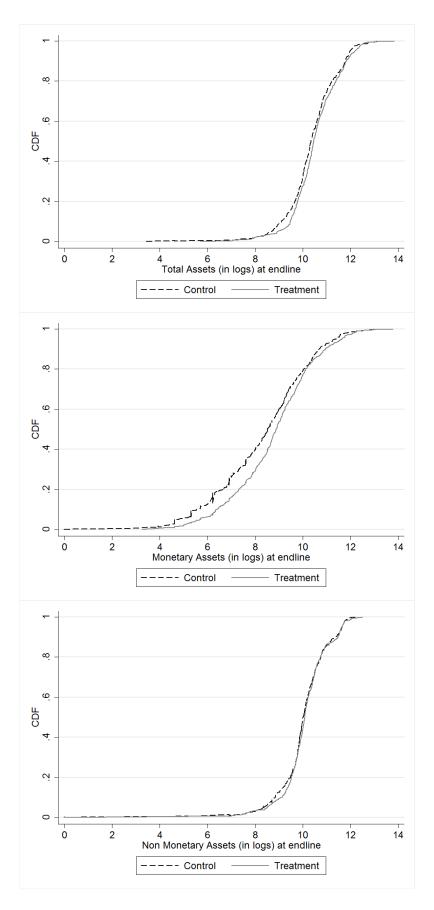**Figure 3A: CDFs of Monetary, Non-Monetary, and Total Assets by treatment status at baseline**

Figure 3B: CDFs of Monetary, Non-Monetary, and Total Assets by treatment status at endline

	Obs.	Mean			T-stat
		Sample	Control	Treatment	
Characteristics of the Female Head of Household)					
Age	1,118	36.63	36.56	36.69	0.19
		(11.45)	(11.51)	(11.41)	
Years of education	1,114	2.78	2.68	2.86	0.99
		(2.98)	(2.84)	(3.11)	
Proportion married/living with partner[1]	1,118	0.89	0.88	0.90	0.99
		(0.29)	(0.30)	(0.28)	
Household Characteristics					
Household size	1,118	4.51	4.52	4.49	-0.33
		(1.67)	(1.66)	(1.68)	
Number of children	1,118	2.16	2.16	2.16	-0.11
		(1.29)	(1.29)	(1.29)	
Total income last week	1,118	1,687.16	1,656.57	1,716.89	0.18
		(5,718.20)	(5,338.91)	(6,068.69)	
Proportion of households entrepreneurs	1,118	0.17	0.17	0.17	0.26
		(0.37)	(0.37)	(0.38)	
Proportion of households owning the house	1,115	0.84	0.83	0.85	0.74
		(0.37)	(0.38)	(0.36)	
Proportion owning the land on which the house is built	1,112	0.78	0.77	0.79	0.77
		(0.41)	(0.42)	(0.41)	
Experienced a negative income shock	1,118	0.41	0.39	0.43	1.42
		(0.49)	(0.49)	(0.50)	
Coped using cash savings	462	0.52	0.51	0.52	0.05
		(0.50)	(0.51)	(0.50)	
Coped borrowing from family/friends	462	0.17	0.18	0.16	-0.51
		(0.38)	(0.37)	(0.37)	
Coped borrowing from a moneylenders	462	0.17	0.15	0.18	0.75
		(0.37)	(0.36)	(0.38)	
Coped borrowing from other sources	462	0.09	0.10	0.08	-0.76
		(0.28)	(0.30)	(0.27)	
Coped cutting consumption	462	0.01	0.01	0.01	0.68
		(0.08)	(0.10)	(0.06)	
Coped selling household possessions	462	0.01	0.01	0.01	0.47
		(0.08)	(0.07)	(0.09)	
Coped in other ways	462	0.05	0.05	0.04	-0.52
		(0.21)	(0.22)	(0.20)	

[1]Marital status has been modified so that missing values are replaced by the village averages.

Table 1B: Descriptive Statistics by Treatment Status

	Obs.	Mean Sample	Control	Treatment	T-stat
Assets					
Total Assets	1,118	46,414.03	44,272.35	48,495.28	1.25
		(56,860.40)	(53,303.61)	(61,758.13)	
Total Monetary Assets	1,118	16,071.82	14,063.67	18,023.31	1.50
		(44,335.77)	(37,620.67)	(49,961.80)	
Proportion of households with money in a bank	1,118	0.17	0.16	0.17	0.35
		(0.37)	(0.37)	(0.38)	
Total money in bank accounts	1,118	6,167.98	4,760.08	7,536.16	1.44
		(32,546.34)	(24,720.22)	(38,637.24)	
Proportion of households with money in a ROSCA	1,118	0.18	0.17	0.19	0.78
		(0.39)	(0.38)	(0.39)	
Total money in ROSCA	1,118	2,805.42	2,209.18	3,384.83	1.4
		(14,130.68)	(8,903.28)	(17,786.25)	
Proportion of households with money in an MFI	1118	0.54	0.56	0.52	-1.18
		(0.50)	(0.50)	(0.50)	
Total money in MFIs	1,118	3,908.20	4,085.66	3,877.71	-0.20
		(16,901.39)	(19,917.15)	(13,350.78)	
Total amount of cash at home	1,118	2,068.00	1,903.39	2,227.96	1.44
		(4,924.16)	(3,911.38)	(5,738.79)	
Total Non-Monetary Assets	1,118	30,342.21	30,208.68	30,471.96	0.15
		(28,826.34)	(29,088.98)	(28,593.90)	
Non-monetary assets from consumer durables	1,118	25,436.81	25,409.62	25,463.23	0.04
		(24,483.91)	(25,148.70)	(23,842.34)	
Non-monetary assets from livestock	1,118	4,905.40	4,799.06	5,008.74	0.27
		(13,001.75)	(12,697.91)	(13,300.77)	
Grams of gold in savings	1,118	12.46	12.39	12.52	0.12
		(17.79)	(18.34)	(17.25)	
Liabilities					
Total amount owed by the household	1,118	50,968.62	53,834.81	48,183.31	-0.44
		(210,366.50)	(281.568.80)	(101,388.80)	
Proportion of households with outstanding loans	1,118	0.89	0.88	0.91	1.61
		(0.31)	(0.33)	(0.29)	
Received loan from shopkeepers	1,118	0.40	0.38	0.42	1.26
		(0.49)	(0.49)	(0.49)	
Received loan from MFIs	1,118	0.38	0.37	0.39	0.74
		(0.49)	(0.48)	(0.49)	
Received loan from family/friends/neighbors	1,118	0.31	0.33	0.30	-1.10
		(0.46)	(0.47)	(0.46)	
Received loan from moneylenders	1,118	0.13	0.12	0.14	1.33
		(0.34)	(0.32)	(0.35)	
Received loan from banks	1,118	0.05	0.05	0.05	0.29
		(0.22)	(0.22)	(0.23)	
Received loan from ROSCAs	1,118	0.03	0.03	0.03	0.80
		(0.17)	(0.16)	(0.18)	

Note: Amounts are expressed in Nepalese rupees (the exchange rate was roughly Rs. 70 to USD 1 during the study period).

Table 2: Account Usage

	Obs.	Mean	Std. Dev.	Median	Min	Max
Take-up rate	567	0.84	0.37	-	0	1
Proportion actively using the account[1]	567	0.80	0.40	-	0	1
Weeks savings product has been in operation (by slum)	19	53.59	2.23	54	53	55
Total number of transactions made	451	47.54	28.17	46.00	2.00	106.00
Total number of deposits made	451	44.02	26.32	42.00	2.00	98.00
Number of deposits per week	451	0.82	0.49	0.78	0.04	1.81
Weekly amount deposited	451	131.04	187.33	73.43	0.83	1,649.44
Average size of deposits per week	451	268.95	422.62	140.63	14.38	3,962.88
% of times deposits made in the 1st open day of the week	451	0.51	0.14	0.51	0.00	1.00
Amount deposited in the 1st open day of the week	451	71.72	102.73	37.45	0.00	969.69
% of times deposits made in the 2nd open day of the week	451	0.49	0.14	0.49	0.00	1.00
Amount deposited in the 2nd open day of the week	451	75.82	119.96	38.83	0.00	935.53
Total number of withdrawals made	451	3.52	3.59	2.00	0.00	28.00
Average amount withdrawn	376	1,774.26	3,471.19	957.74	133.33	35,000.00
Total amount withdrawn	451	5,081.01	8,415.65	2,250.00	0.00	70,000.00
Average Balance After 55 Weeks	451	2,361.66	704.28	704.28	1.46	51,012.51

Source: Bank administrative data. Amounts are expressed in Nepalese rupees (the exchange rate was roughly Rs. 70 to USD 1 during the study period). [1]Made at least two deposits within the first year of being offered the account.

Table 3: Studies on Access to Savings Accounts

Study	Country	Setting	Target population	Account type	Opening and Minimum Balance Fees	Withdrawal fees	Deposit fees	Nominal Interest rate	Take-up rate	Usage rate
Prina (2014)	Nepal	urban, semi-urban, and rural	1,118 women and their households	ordinary	No	No	No	6%, 10.5% inflation rate	84%	80%[1]
Ashraf, Karlan, and Yin (2006a)	Philippines	rural	346 existing or former clients of a bank	ordinary	$2 minimum account opening deposit	No, but for a part of the sample there was a restriction according to commitment account rule (date or amount based goals)[2]	$0.08 per pick-up by the deposit collector	4%, 3.4% inflation rate	28%	15%
Cole, Sampson, and Zia (2011)	Indonesia	urban and rural	564 unbanked households	ordinary	$3-$14 subsidy for opening an account	No if less than 4 withdrawals or deposits per month	No if less than 4 withdrawals or deposits per month, $0.53 minimum deposit	None if balance <$1.06, 13% inflation rate	<10% (12.7% when subsidy is $14)	7.5% when the subsidy was $14[3]
Dupas and Robinson (2013)	Kenya	rural	392 unbanked small informal business owners	ordinary	No	Yes	No	None, 10-14% inflation rate	87%	41%[4]
Dupas, Green, Keats, and Robinson (forthcoming)	Kenya	rural	1,565 unbanked individuals	ordinary	No	Yes	No	None, 10-14% inflation rate	62%	18%[1]
Schaner (2013)	Kenya	rural	1,114 bank accounts owned by 749 previously unbanked couples	ordinary	$1.25 minimum opening balance subsidized	Yes	No	0, 4, 12 or 20%, 9.3% inflation rate	5%-100%[5]	22%[6]
McConnell (2012)	Ghana	urban	1,601 market vendors (39% of which are banked)	ordinary, with weekly text message reminders	No	No	No	3%, 15% inflation rate	12%	2%[1]
Brune, Giné, Goldberg, and Yang (2014)	Malawi	rural	3,150 cash crop farmers belonging to 299 clubs	ordinary and commitment	$1 opening fee, $1 minimum balance	No if less than 4 withdrawals per month	No	2.5%, 7.7% inflation rate	91%	19.4%

Study	Country	Location	Sample	Account type	Minimum deposit	Restriction		Interest rate		
Kast and Pomeranz (2014)	Chile	urban	3,560 small informal business owners members of an MFI (90% female)	ordinary and peer group commitment	$2 minimum opening deposit	No	No	0.3% or 5% real interest rate	53%	39%[4]
Ashraf, Karlan, and Yin (2006b)	Philippines	rural	1,777 existing or former clients of a bank	commitment	$2 minimum account opening deposit. Option to buy a small deposit box for $1	No, but there was a restriction according to commitment account rules (date or amount based goals)[2]	No	4%, 3.4% inflation rate	28%	50%[1]
Karlan and Linden (2014)	Uganda	rural and semi-urban	students (and their parents) of 136 primary schools	commitment	No	No	No	None, 10% inflation rate	95% of the schools offered the program participated[7]	Data not available[7]
Karlan, McConnell, Mullainathan, and Zinman (2012)	Philippines (similar programs were offered in Peru and Bolivia)	rural and urban	10,056 individuals	commitment	$2.50 minimum account opening deposit	No, but money in the account can be withdrawn only if the account reaches the goal amount and the goal term has concluded[2]	No	1.5-3%,[8] 2.6-2.9% inflation rate	23%	NR
Karlan and Zinman (2013)	Philippines	rural and urban	9,992 unbanked individuals with regular income streams	commitment	$2.50 minimum account opening deposit	No, but money in the account can be withdrawn only if the account reaches the goal amount and the goal term has concluded[2]	No	1.5-3%, 2.5% inflation rate	23%	74%[9]

Note: NR stays for "Not Reported." [1]Usage rate is defined as two or more deposits within a year of opening the account. [2]Exceptions were allowed for hospitalization or death of immediate family members, or if the person was moving. [3]Moreover, 62% of the households that still had their accounts open a year after the intervention, made a transaction (deposit, withdrawal, sending/receiving money). [4]Usage rate is defined as at least two deposits in the first six months since opening the account. [5]5% of the couples chose to open all three accounts offered (one of for each partner and a joint account) and all couples opened at least one account. [6]Usage rate is defined as at least one account. [7]Since data was collected at the school level, the take-up and usage rates at the individual level are not available. [8]The bank randomly assigned people to: a) 1.5% APY, b) 3% APY, or c) 1.5% APY normally plus 1.5% APY if attained savings goal. [9]Usage rate defined as having made any deposits within study period after opening the account.

Table 4: Effects on Assets, Liabilities, and Net Worth

	Monetary Assets		Non-Monetary Assets		Total Assets		Liabilities		Net Worth	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ITT: Offered the Savings Account	1,982.18	2,318.39	1,379.11	1,489.33	3,102.88	2,802.47	-5,533.00	-5,377.83	10,471.41	10,515.93
	(2,451.91)	(2,448.78)	(1,519.03)	(1,899.37)	(3,009.16)	(2,596.98)	(6,546.68)	(6,487.07)	(7,446.21)	(7,379.64)
Controlling for baseline values	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Dep. Var. (Control Group)										
Mean	19,284.06		34,067.52		53,351.58		49,941.30		3,410.28	
Std. Dev.	(48,869.22)		(32,793.38)		(65,864.47)		(144,765.10)		(158,949.40)	
Obs.	1,118	1,114	1,118	1,114	1118	1,114	1118	1,114	1118	1,114
R² (overall)	0.40	0.41	0.45	0.15	0.47	0.36	0.32	0.34	0.31	0.33

Note: Robust standard errors reported in parenthesis. Dependent variables expressed in Nepalese rupees (the exchange rate was roughly Rs. 70 to USD 1 during the study period). Additional controls include age, literacy, marital status, number of household members, baseline household income, three dummies for the main source of household income at baseline (income from an entrepreneurial activity, as a salaried worker, and as a casual worker. The omitted category is other sources of income,), and village dummies. Marital status has been modified so that missing values are replaced by the village averages. Statistically significant coefficients are indicated as follows: *10%; **5%; ***1%.

Table 5: Effects on Household Expenditures Categories (last 30 days)

	Total Expenditure		Health		Education		Meat and Fish		Festivals and Ceremonies		Dowries		Other Expenditures	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
ITT: Offered the Savings Account	340.78	296.27	-290.34	-328.10	387.75*	411.79**	153.60*	155.39*	248.07**	258.68**	-207.42	-219.07	49.12	17.57
	(860.93)	(841.56)	(540.71)	(547.54)	(204.40)	(195.90)	(87.77)	(88.07)	(123.67)	(112.06)	(188.35)	(204.76)	(569.01)	(538.79)
Controlling for baseline assets	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Dep. Var. (Control Group)														
Mean	7,874.85		1,864.62		1,982.48		1,052.41		110.33		291.46		2,573.56	
Std. Dev.	(14,963.26)		(10,683.04)		(3,342.15)		(1,394.34)		(784.87)		(4,295.12)		(8,153.19)	
Obs.	1,118	1,114	1,118	1,114	1,118	1,114	1,118	1,114	1,118	1,114	1,118	1,114	1,118	1,114
R^2 (overall)	0.03	0.10	0.00	0.03	0.06	0.19	0.06	0.10	0.01	0.08	0.00	0.04	0.02	0.06

Note: Robust standard errors reported in parenthesis. Dependent variables expressed in Nepalese rupees (the exchange rate was roughly Rs. 70 to USD 1 during the study period). Additional controls include age, literacy, marital status, number of household members, baseline household income, three dummies for the main source of household income at baseline (income from an entrepreneurial activity, as a salaried worker, and as a casual worker. The omitted category is other sources of income.), liabilities at baseline, having a bank account at baseline, belonging to an MFI at baseline, belonging to a ROSCA at baseline, and village dummies. Marital status has been modified so that missing values are replaced by the village averages. Statistically significant coefficients are indicated as follows: *10%; **5%; ***1%.

Table 6: Effects on Household Expenditure on Education and School Enrollment (last 30 days)
(Households with children 6-16 years old only)

	School Enrollment		Total Expenditure on Education		Expenditure on School Fees		Expenditure on Textbooks		Expenditure on School Uniforms		Expenditure on School Supplies	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ITT: Offered the Savings Account	0.01	-0.01	667.56**	554.17*	224.72	170.33	213.74*	185.77	113.15*	104.54	115.95**	93.53*
	(0.04)	(0.04)	(320.63)	(311.58)	(193.39)	(192.60)	(120.22)	(117.66)	(65.40)	(65.99)	(49.98)	(51.63)
Controlling for baseline assets	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Dep. Var. (Control Group)												
Mean	0.81		2,430.49		1,019.33		736.82		319.63		354.71	
Std. Dev.	(0.39)		(3,304.80)		(1,754.32)		(1,265.30)		(676.56)		(455.49)	
Obs.	478	476	478	476	478	476	478	476	478	476	478	476
R² (overall)	0.01	0.13	0.10	0.27	0.07	0.18	0.08	0.27	0.02	0.16	0.04	0.18

Note: Sample restricted to those households with children 6-16 years of age. Robust standard errors reported in parenthesis. Dependent variables expressed in Nepalese rupees (the exchange rate was roughly Rs. 70 to USD 1 during the study period). Additional controls include age, literacy, marital status, number of household members, baseline household income, three dummies for the main source of household income at baseline (income from an entrepreneurial activity, as a salaried worker, and as a casual worker. The omitted category is other sources of income.), liabilities at baseline, having a bank account at baseline, belonging to an MFI at baseline, and belonging to a ROSCA at baseline, and village dummies. Marital status has been modified so that missing values are replaced by the village averages. Statistically significant coefficients are indicated as follows: *10%; **5%; ***1%.

Table 7: Effects on Household Health-related Expenditures (last 30 days) and Income (last week)

	Full Sample (All Households)				Restricted Sample (Households Hit by a Health Shock Only)					
	Income		Being Hit by a Health Shock		Income		Health Expenditure		Money Borrowed for a Health Emergency	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ITT: Offered the Savings Account	520.79	458.78	0.01	0.01	1,068.52*	1,026.10*	-1,024.22	-708.80	-9,316.35	-9,023.55
	(874.61)	(845.29)	(0.03)	(0.02)	(549.28)	(524.12)	(2,214.22)	(2,002.65)	(6,111.74)	(6,170.88)
Controlling for baseline assets	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Dep. Var. (Control Group)										
Mean	3,012.86		0.22		1,799.30		7,028.88		13,574.38	
Std. Dev.	(10,185.02)		(0.41)		(3,587.40)		(20,782.51)		(64,405.05)	
Obs.	1,118	1,114	1,118	1,114	253	253	253	253	253	253
R² (overall)	0.02	0.07	0.00	0.15	0.09	0.25	0.00	0.13	0.01	0.14

Note: Robust standard errors reported in parenthesis. Dependent variables expressed in Nepalese rupees (the exchange rate was roughly Rs. 70 to USD 1 during the study period). Additional controls include age, literacy, marital status, number of household members, baseline household income, three dummies for the main source of household income at baseline (income from an entrepreneurial activity, as a salaried worker, and as a casual worker. The omitted category is other sources of income.), liabilities at baseline, having a bank account at baseline, belonging to an MFI at baseline, belonging to a ROSCA at baseline, and village dummies. Marital status has been modified so that missing values are replaced by the village averages. Statistically significant coefficients are indicated as follows: *10%; **5%; ***1%.

Table 8: Effects on the Household Self-Reported Financial Situation

	How would you describe your household's financial situation?		How financially stretched your household is, month to month?		On the whole, I feel secure with the financial situation of my household		Self-reported financial situation index	
	1 if "live comfortably," or "meet basic expenses with little left for extras."		1 if "not very stretched" or "not at all stretched."		1 if "strongly agree," or "agree."			
	0 if "just meet basic expenses," or "don't even have enough to meet basic expenses."		0 if "stretched to the absolute limit," "very stretched," or "somewhat stretched."		0 if "feel neutral," "disagree," or "strongly disagree."			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ITT: Offered the Savings Account	0.09***	0.10***	0.07**	0.07***	0.02	0.02	0.09*	0.09**
	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	-0.05	-0.04
Controlling for baseline assets	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls	No	Yes	No	Yes	No	Yes	No	Yes
Dep. Var. (Control Group)								
Mean	0.30		0.29		0.21		0.00	
Std. Dev.	(0.46)		(0.46)		(0.41)		(1.00)	
Obs.	1,118	1,114	1,118	1,114	1,118	1,114	1,118	1,114
R² (overall)	0.12	0.28	0.10	0.29	0.05	0.17	0.12	0.29

Note: Robust standard errors reported in parenthesis. Additional controls include age, literacy, marital status, number of household members, baseline household income, three dummies for the main source of household income at baseline (income from an entrepreneurial activity, as a salaried worker, and as a casual worker. The omitted category is other sources of income.), liabilities at baseline, having a bank account at baseline, belonging to an MFI at baseline, belonging to a ROSCA at baseline, and village dummies. Marital status has been modified so that missing values are replaced by the village averages. Statistically significant coefficients are indicated as follows: *10%; **5%; ***1%. The self-reported financial situation index is built as follows. First, each of the three outcome variables reported in the previous columns is standardized into a z-score. Then, the three new outcome variables are combined into one by taking the average of equally weighted standardized components.

Appendix Table A1: Attrition

	Completed Endline	
	(1)	(2)
ITT: Offered the Savings Account	0.014	0.013
	(0.017)	(0.016)
Age of female household head		0.000
		(0.001)
Literacy		-0.011
		(0.019)
Marital status[1]		0.009
		(0.031)
Number of household members		0.005
		(0.005)
Household income		0.000
		(0.000)
Income from an entrepreneurial activity		0.007
		(0.025)
Income as a salaried worker		0.026
		(0.027)
Income as a casual worker		0.001
		(0.021)
Constant	0.897***	0.826***
	(0.012)	(0.066)
Village dummies	No	Yes
Obs.	1,236	1,224
R^2 (overall)	0.001	0.053
Mean of dependent variable	0.91	

Note: Robust standard errors, reported in parenthesis. [1]Marital status has been modified so that missing values are replaced by the village averages. The omitted category for the main source of household income is other sources of income. Statistically significant coefficients are indicated as follows: *10%; **5%; ***1%.

Appendix Table A2: Determinants of Take-up and Active Use

	Take-up			Active Use of Bank Account[1]		
	(1)	(2)	(3)	(4)	(5)	(6)
Age	-0.001	-0.001	-0.001	-0.003	-0.003	-0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Literate	0.042	0.042	0.023	0.058	0.053	0.031
	(0.039)	(0.040)	(0.040)	(0.043)	(0.043)	(0.043)
Marital status[2]	-0.008	-0.008	-0.012	-0.036	-0.014	-0.020
	(0.057)	(0.058)	(0.058)	(0.060)	(0.062)	(0.062)
Number of household members		0.002	0.002		-0.016	-0.015
		(0.009)	(0.009)		(0.010)	(0.010)
Household income		0.000	-0.000		0.000	-0.000
		(0.000)	(0.000)		(0.000)	(0.000)
Income from an entrepreneurial activity		-0.102**	-0.118**		-0.103**	-0.123**
		(0.048)	(0.049)		(0.051)	(0.052)
Income as a salaried worker		0.020	0.017		0.003	-0.001
		(0.050)	(0.050)		(0.055)	(0.054)
Income as a casual worker		-0.010	0.005		-0.022	-0.003
		(0.040)	(0.040)		(0.043)	(0.043)
Total assets			-0.000			-0.000
			(0.000)			(0.000)
Total liabilities			0.000			0.000
			(0.000)			(0.000)
Belongs to an MFI			0.054*			0.040
			(0.032)			(0.036)
Belongs to a ROSCA			0.058			0.060
			(0.035)			(0.039)
Banked			0.090**			0.110***
			(0.038)			(0.041)
Constant	0.707***	0.702***	0.678***	0.594***	0.655***	0.637***
	(0.128)	(0.136)	(0.138)	(0.137)	(0.143)	(0.145)
Village dummies	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	565	565	565	565	565	565
R^2 (overall)	0.114	0.124	0.139	0.152	0.164	0.180

Note: Robust standard errors, reported in parenthesis. [1]Made at least two deposits within the first year of being offered the account. [2]Marital status has been modified so that missing values are replaced by the village averages. The omitted category for the main source of household income is other sources of income. Statistically significant coefficients are indicated as follows: *10%; **5%; ***1%.

Appendix Table A3: Savings Account Characteristics and Savings Motives

Panel A: Reasons for Saving in the Account (Multiple Choice)[1]

Savings Motives	% of account holders
To pay for a health emergency	88.25
To buy food when income is low	65.85
To pay for school fees or school material	49.89
To pay for a festival	18.40
To repay a debt	9.98
To pay for home maintenance	7.10
To invest in my current business	6.21
To buy poultry or livestock	6.21
To buy agricultural inputs (pesticides, fertilizer, etc.)	5.10
To pay bills	4.88
To start a new business	3.33
Other	2.88
To pay for a funeral	2.00
To buy gold	1.33

Panel B: Most Valued Feature of the Savings Account

Savings Account Characteristics	% of account holders
Easy to deposit and withdraw any amount of money any time	70.18
The account is simple to understand	13.23
Trust	8.97
Bank opens twice a week in the community	3.59
Bank has a female employee	2.69
Cannot open a savings account in another bank/fin. institution	0.67
The account offers a high interest rate	0.45
Don't know any other financial institution	0.22
Do not feel confident opening a savings account in another bank/fin. institution	0.00
Do not know how to open a savings account in another bank/fin. institution	0.00
Total	100.00

[1]Percentages for the savings motives do not add up to 100 as households could select more than one savings motive.