Access to Formal Banking and Household Finances: Experimental Evidence from India

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Abstract

Access to formal banking is spreading across the world. Obtaining a bank account may transform how people manage their finances, and affect their savings and consumption. We report from a field experiment that randomly provides access to a bank account to a representative sample of villagers in rural India. We complement the existing literature with results from financial diaries, that allow us to look at the complete picture of the household's financial life up to six months after the bank account was opened. The treated respondents save actively into the account, and both their individual and total household savings increase. There is no significant impact on average expenditures, income, loans and transfers, but there are important improvements in consumption smoothing.
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1 Introduction

How people save and smooth consumption over time is a fundamental question of economics. The influential life-cycle models of consumption and the precautionary savings models assume that saving is possible at no cost, which is in stark contrast with reality. This holds in particular in low-income countries where people still have limited access to banks. Providing access to formal banking - which is on the political agenda of many countries - may reduce transaction costs. Our first main contribution is to show that improved access to banking can have a causal, positive and large effect on individual and household savings. This proves there is an important demand for savings, even among the low income people of our sample, and that this demand can be met by providing a simple and convenient savings tool. As such, our evidence is fully consistent with the argument that low savings are at least partially due to high transaction costs, and that simplifying saving can have large effects.[1]

Why do savings increase so substantially? One of the main motives emphasized in the literature is that when people face variable incomes, they save to smooth consumption over time. Our second main contribution comes from gathering very detailed data on incomes and expenditures at the household level on a weekly basis, following the *financial diaries* model (Collins et al., 2009; Morduch and Schneider, 2017). These data allow us to test, and show, that improved savings opportunities actually translate into the smoothing of consumption. As such, this paper reconciles the earlier literature and the theoretical predictions of precautionary savings, with the latest research on the barriers to savings: when saving becomes sufficiently simple and accessible, people do save substantially more and they do so in a way that is consistent with the precautionary savings motive. To the best of our knowledge, this is the first study to report how randomized access to financial services affects consumption smoothing.

These findings come from the combination of a randomized controlled trial that provided help to open an account to the treated, and long and detailed data collection in weekly financial diaries.

[1] See Thaler and Benartzi (2004); Carroll et al. (2009); Beshears et al. (2013); Dupas and Robinson (2013); Somville and Vandewalle (2018) among others.

The experiment took place in seventeen villages in Chhattisgarh, a central-eastern state of India. In each village, a bank agent recently started operating. Bank customers can go to the agent to make deposits, withdrawals, or transfers between accounts. We took a random sample of households among those that were not customers and we randomly encouraged half of them to open a bank account. Given that the bank agent is very close to the sample's homes, the treatment greatly reduced the accessibility of formal banking. Compared to the control, who save in cash under the mattress or by accumulating assets, the treated can therefore save in way that is reliable, safe and convenient.

We test how receiving a formal bank account affects the management of the individual and the household's finances. We start by looking at account use using bank administrative data. We find that the treated use the new account actively. They make 3.18 deposits in 17 weeks on average and 64 percent deposit at least once. They make fewer deposits and accumulate on average around INR 30 per week. Turning to the financial diary data, we can check whether the treatment change the individual savings in other assets, or the savings from the rest of their household. We find that the increase in bank savings only partially crowds out other savings: the total savings measured at the individual level and at the household level both increase substantially.

A noteworthy additional finding is that the impacts depend strongly on the distance between the people's home and the bank agent: the closer is the agent and the larger are the savings. This reinforces our interpretation that the accounts increased savings by reducing the (transaction) cost of saving.

The financial diaries data are also essential to document and test how the treatment affects consumption smoothing. To this end, we follow the approach of Townsend (1994) and Morten et al. (2017). We use panel regressions with household fixed effects, to estimate how expenditures vary with income, from week to week, within households. We argue that the approach is valid given that the treatment did not have any impact on incomes. We find that access to a savings account significantly improved consumption smoothing: while a one percent increase in weekly income is associated with a four percent increase in food expenditures for the control group, food expenditures of the treated do not correlate with their income.

In addition to improving our understanding of savings behaviour, this paper is of direct relevance to assessing the potential effects of the current expansion of banking in many countries. In lower income countries, bank account penetration is still limited.[2] Instead, the poor save by investing in risky assets, such as jewellery, animals, money under the mattress, and different forms of informal savings arrangements. In recent years, the importance of financial inclusion and its potential benefits received a lot of attention by the international community and several governments. It also became an explicit target of the United Nations' first Sustainable Development Goal "End poverty". Concomitantly, an increasing number of research projects focused on how to promote savings. We discuss this literature in the next section.

Following that discussion, we provide more details on India's financial inclusion plan, our experimental design, the data and attrition in Section 3. We present the main results in Section 4 and we conclude in Section 5.

2 Related literature

Other authors have studied the provision of bank accounts in particular, and it is not obvious that people will automatically take up and start using bank accounts once those are made available. Even when the accounts are free, people may incur non-monetary costs (such as going to the bank and interacting with the banker) or the bank may not be sufficiently well-known or trusted. The few empirical studies that investigated this question indeed report diverging findings. In Chile, Malawi and Uganda, Dupas et al. (2016) find that covering the opening and maintenance fees of basic savings accounts increases savings on the account itself, but not in total. They also observe a low usage rate. A similar pattern - increases in account savings but not in total savings - is reported by Kast and Pomeranz (2014) who provide bank accounts, self-help group support or higher interest rates to Chilean business owners. These results stand in contrast with other studies: assistance to open bank accounts, coupled with the coverage of opening fees induced an increase in the total savings of Mexican migrants in the U.S.A (Chin et al., 2015), and of

[2] According to Demirgüç-Kunt et al. (2015), p.84, 14 percent of adults have a bank account in the Middle East, 46 percent in South Asia, and 34 percent in Sub-Saharan Africa.

households in Kenya (Dupas et al., 2015) and Nepal (Prina, 2015).

There are several ways in which our set-up differs from the papers described above. First, all the treated respondents opened a bank account. We did not help the control in opening an account, but obviously did not withhold them from doing so.[3]

Second, we did not focus on longer-term effects, but gathered weekly information on the households' financial lives in the months that followed the opening of the account. These interviews allow us to minimize recall bias and obtain measures of incomes, expenditures and savings that are as precise as possible. They also allowed us to implement instantaneous dynamic consistency checks and improve the measurement process.

Third, given that we measure income and expenditures on a weekly basis, we can study consumption smoothing. As far as we know, this is the first paper to directly document how access to banking helps in smoothing consumption.

Finally, one important characteristic of this setting, compared to other studies that facilitated access to savings accounts, is that the transaction costs are very limited. By design, the bank agents cover a radius of one kilometre. As a result, the customers live within one kilometre from their agent (and at an average distance of 300 meters). As suggested in previous studies of access to formal banking (Prina, 2015; Brune et al., 2016; Dupas et al., 2016) and by the success of deposit collection services (Ashraf et al., 2006; Callen et al., 2014), a low distance may explain positive impacts. Indeed, despite limited distance to the bank of all the the respondents, we still find that distance matters: the impacts on savings are significantly larger for people living closest to the bank agent.[4]

The paper also fits well with a recent and growing literature on the promotion of savings among low income populations. A financial literacy education program had modest effects on account take-up in Indonesia (Cole et al., 2011). But finan-

[3]Only two households from the control group effectively opened an account during the experiment.

[4]This positive effect of lower transaction costs on savings is a priori not trivial. A related literature shows that larger transaction costs can increase savings. For instance, in a setting with intra-household conflicts over the use of resources, or strong redistributive pressures, larger costs can protect savings against demands from others (Schaner, 2017). Transaction costs can also protect savings against oneself: They are a key component of commitment savings, that were successful in some contexts (Ashraf et al., 2006; Dupas and Robinson, 2013; Ashraf et al., 2015).

cial incentives (take-up subsidies) have had important positive effects on account use in the same study (Cole et al., 2011). Financial incentives also increased take-up, but not savings, in the Philippines (Karlan and Zinman, 2014). They led to long-term increased incomes and assets in Kenya (Schaner, forthcoming). Karlan et al. (2016) report no effect on account savings of reminders that mention savings goals and financial incentives in Bolivia, Peru and the Philippines. Finally, recent papers are showing potentially important effects of direct deposits in India (Somville and Vandewalle, 2018) but not in Malawi (Brune et al., 2016, 2017). The first systematic review of such research has in fact been published very recently and we refer the interested reader to it (Steinert et al., 2018).

An important contribution of our study is to report how consumption smoothing changes when bank accounts become more accessible and savings increase. The paper is therefore closely related to the empirical literature on consumption smoothing. It is clear that poor households face substantial income risk. Studying how they manage that risk and cope with shocks to achieve stable levels of consumption has been on the economics research agenda for decades. A major part of the literature tested whether poor households are indeed able to insure consumption against income shocks and documented the different strategies used to smooth consumption (Rosenzweig and Stark, 1989; Deaton, 1992; Paxson, 1992, 1993; Rosenzweig and Wolpin, 1993; Alderman and Paxson, 1994; Townsend, 1994; Kochar, 1995; Morduch, 1995; Townsend, 1995; Jacoby and Skoufias, 1998; Morduch, 1999; Dercon, 2002; Newhouse, 2005; Rose, 1999; Dercon, 2005; Skoufias and Quisumbing, 2005; Hoddinott, 2006; Carter and Lybbert, 2012).

The next generation of studies is looking at how reducing frictions on the savings and credit markets affect smoothing. Udry (1994) documents how the credit markets (informal loans) in northern Nigeria serve to mitigate adverse shocks. Islam and Maitra (2012) provide similar evidence about the role played by access to microcredit in Bangladesh in mitigating variations in livestock and consumption. Comparable evidence is found in Thai villages (Kinnan and Townsend (2012), about both the informal and formal credit transactions and in Indonesia (Gertler et al., 2009). In addition to facilitating savings and the obtention of credit, the development of formal finance allows to improve insurance between people by facilitating transfers. This is precisely the effect reported by Jack and Suri (2014) in

Kenya: while adverse shocks reduce consumption of non-users by seven percent, users of mobile banking do not suffer from reduced consumption thanks to the transfers received on their account. Blumenstock et al. (2016) provide further evidence in support of this channel: they observe strong increases in airtime transfers towards the people living close to an earthquake epicentre in Rwanda.

The main limitation of these latest studies is the lack of an exogenous improvement in the credit market. Instead, they rely on panel estimations with household fixed effects to control for time-invariant observables (which we also do) and on the distance to financial services, assuming this is exogenous. While we do not contest the importance and the value of the insights these papers brought about, the estimates may suffer from an endogeneity bias. An important contribution of this paper is to use randomized access to banking as a source of variation to identify how access to financial services improves consumption smoothing. This bridges a gap in the two strands of literature mentioned: the randomized trials that focus on the introduction of banking provide very limited information about smoothing, and the consumption smoothing papers lack the exogenous variation in access to financial services.[5]

We will now turn to the description of the context and design of the experiment before discussing the results.

3 Background, Experimental Design and Data

In this section, we first discuss India's financial inclusion program. Next, we describe the experimental design of our study, introduce the data, provide baseline characteristics and discuss attrition.

3.1 Financial Inclusion in India

The financial landscape changes remarkably in India. In 2006, the Reserve Bank introduced the Business Correspondents (BC) model, which led to a rapid increase in bank account penetration. Indeed, between 2011 and 2014, the share of banked adults increased from 35 to 53 percent (Demirgüç-Kunt et al., 2015). The model

[5] Another paper follows a similar experimental approach to study how the modalities of cash transfer payments affect consumption smoothing in Mexico (Aguila et al., 2017).

allows banks to appoint BCs, who provide financial and banking services on their behalf (RBI, 2006; RBI, 2008). In the region of our survey, Axis bank appointed the financial inclusion company Basix Sub-K, which is our main partner on the project. Basix Sub-K's responsibilities are selecting one shop owner per village to become the bank agent or BCSA (Business Correspondent Sub-Agent), training the person, and providing the necessary equipment: a mobile phone, a finger print recognition device and a receipt machine that are all interconnected through bluetooth. Basix Sub-K also pays the bank agent, assists wherever needed and provides a customer service for the clients.

The bank agent helps the villagers to open a BCSA account. To do so, he sends the customer's application form and a photo to Axis bank. The bank opens the account, and communicates the unique account number to the bank agent. The BCSA account is then activated by registering the customer's finger prints. As soon as this procedure is finalized, the customer can perform standard transactions on the account: deposits, withdrawals, money transfers, and balance inquiries. Transactions that lead to a reduction in the account balance, or provide information about it require a signature through the finger print recognition device. The customer has to pay an enrollment fee of Rs 25, but transactions are free.[6]

In August 2014 - after we finalized our experiment - the government announced the National Mission for Financial Inclusion (PJYMD). This let to an additional boost in bank account penetration.[7]

3.2 Experimental Design

The experiment was conducted in 17 villages in rural Chhattisgarh, an east-central state of India. We selected villages without a cooperative, rural or commercial bank branch, as to make sure the BCSA is the only person who provides formal

[6]The bank experimented with (very low) charges on withdrawals after the start of our experiment. Withdrawals remained free if the average quarterly balance (AQB) on the account was above Rs 500, but customers were charged Rs 1 per withdrawal if their AQB was between Rs 200 and Rs 500 and Rs 2 per withdrawal if their AQB was less than Rs 200. These charges were abandoned on July 1, 2014. From the endline survey we learn that customers did not realise the existence of temporary charges. We only got to know about it shortly before it was abandoned.

[7]Details are available on the PJYMD website: http://pmjdy.gov.in.

banking services at the doorstep. The sampled villages are located in three different districts - Dhamtari, Gariyabandh and Raipur - as can be seen from Figure 2 in Appendix A.

In each village, we randomly selected 12 villagers who did not yet have a BCSA account. To do so, we allocated a random number to each person on the voter list and approached them in ascending order. Apart from not yet having opened a BCSA account, villagers had to meet three additional conditions to be included in our sample: (i) Being the head of the household or the head's spouse, (ii) not having plans to leave the village, and (iii) belonging to a household in which nobody has a savings account with another institution.[8] To obtain a sample that is stratified by gender, we approached people until we had selected six men and six women in each village. Three men and three women were randomly allocated to the treatment group, and the others to the control group.

We conducted a baseline survey at the respondent's home in the fall of 2013. Shortly after the interview, Basix Sub-K started the necessary paperwork to open a BCSA account for each of the treated respondents. All the accounts were activated by the spring of 2014. To make sure the use of the BCSA accounts is clear, we organized a practical information session. We showed the treated respondents how to deposit and withdraw money, and demonstrated how the fingerprint recognition tool protects their savings.

Between February and May, and July and August 2014, we organized seventeen weekly interviews, which took place on the same day of the week at a centrally located room in the village. On average, the respondents needed about three hours to come, wait their turn, be interviewed and go back home. To compensate their time, we paid Rs 150 in a closed envelop at the end of each interview.

[8]We allowed for post office or other accounts that were opened to receive payments from welfare schemes, or MGNREGA. We also allowed for cooperative bank accounts that were used for the payment of crops. Villagers cannot deposit into post office or cooperative bank accounts, and rarely do so into the other accounts, either because they are not protected (there is no secret code or biometric authentication), or because the bank is too far away. Villagers usually withdraw the money at once shortly after a payment is made.

3.3 Data and Pre-Analysis Plan

We have four sources of data. First, the baseline survey included questions on the characteristics of the participants and their household members, as well as on the household's expenditures, investments, transfers, loans, and informal savings.

Second, Basix Sub-K gave access to all the transactions that were made during the survey period.

Third, the weekly interviews provide detailed information on the incomes and expenditures of all the household members. The income sections cover wage labor, self-employment, the sales of goods, livestock, crops and forest products, renting out of assets and land, and public transfers. In addition to a list of 195 consumption items for which we recorded the amounts purchased, the expenditure details include the expenses on business and agricultural inputs, and the rental of assets. We also collected details on loans, transfers and remittances. To gather this weekly information, we created a "dynamic" questionnaire, that compares the answer with values that were previously recorded. The enumerator did not see the expenses from previous weeks, but received a message asking him to double check with the respondent in case the amount entered differed largely from previous values. In case the information was correct, he had to provide an explanation for the exceptional value. Details with respect to accounts, memberships of savings groups, outstanding loans, etc. were automatically shown, as to make sure that the enumerator would not forget to up-date the necessary information. We believe that this process greatly improved the quality of the data collected and minimized measurement errors.

Finally, we conducted an endline survey to update the baseline information.

Before we received the data, we registered a pre-analysis plan with the American Economic Association's registry for randomized control trials (Somville and Vandewalle, 2015). Deviations from the pre-analysis plan are discussed in Appendix C.

3.4 Baseline Characteristics and Balance Check

Table 1 presents the baseline characteristics that were identified as covariates in the pre-analysis plan. The sample consists of 204 respondents. The first column

provides the means (and standard deviations) in the full sample and the second column the coefficient estimates (and standard errors) of the difference between the baseline means in the treatment and control group. All of the 21 coefficient estimates are small and only one is significantly different from zero. This suggests that the randomization was successful at making the treatment orthogonal to observed baseline characteristics.[9]

As we stratified the sample on gender, 50% of the respondents are women. In terms of demographic characteristics, respondents are mainly Other Backward Castes[10], 41% is literate, 88% married, the average age is 45, and the majority is employed in the agricultural sector (the omitted category is being unemployed). The sample is quite poor: participants own about one acre of land and 55% live in a house that is made of mud (katcha). On average, respondents hold one other account with either a post office, cooperative or formal bank. These accounts were opened to receive public transfers, or to be paid for paddy or other grains (see Section 3.2). One out of seven participants is member of an informal savings group, a large majority participates in their household's decision making with respect to where and how much to save and 68% trust both their bank agent and bankers in general.[11] Finally, 44% of the participants are impatient (they prefer money today instead of a larger amount in one week) and the average distance from the house to the BCSA is about 300 meter in crow flies. The last variable in the Table shows that the average respondent was interviewed 13 times. Despite the variable being balanced, it may be influenced by the treatment and is therefore not included in any of the regressions.

3.5 Attrition

We intended to work in 18 different villages. However, shortly after the baseline survey, one shop keeper stopped his banking activities because it was not as profitable as his other business. Given there is only one bank agent per village, we had

[9]The Tables 14 and 15 in online Appendix B show that the outcome variables are balanced at baseline as well.

[10]Castes are classified in the following categories: ST (Scheduled Tribe), SC (Scheduled Caste), OBC (Other Backward Caste), and FC (Forward Caste).

[11]The respondents were asked whether they trust the bank agent and banks in general. The trust index equals one if the answer to both questions is "quite a bit of trust" or "a lot of trust".

Table 1: Summary Statistics and Balance Check of Baseline Characteristics

	Mean (Std. dev.) (1)	Coefficient on *New account* (Std. errors) (2)
New account (%)	50.00	
	(50.12)	
Woman (%)	50.00	0.00
	(50.12)	(0.07)
Caste category: ST (%)	16.18	0.03
	(36.91)	(0.05)
Caste category: SC (%)	15.69	-0.00
	(36.46)	(0.05)
Caste category: OBC (%)	67.65	-0.02
	(46.90)	(0.07)
Caste category: FC (%)	0.49	-0.01
	(7.00)	(0.01)
Literate (%)	40.69	0.07
	(49.25)	(0.07)
Married (%)	87.75	0.03
	(32.87)	(0.05)
Age	45.44	-0.52
	(13.76)	(1.93)
Wage labor in agriculture (%)	30.88	-0.07
	(46.31)	(0.06)
Wage labor outside agriculture (%)	13.73	-0.02
	(34.50)	(0.05)
Self-employed in agriculture (%)	44.61	0.07
	(49.83)	(0.07)
Self-employed outside agriculture (%)	0.98	0.02
	(9.88)	(0.01)
Land (acres)	1.10	0.28
	(1.59)	(0.22)
Dwelling type: katcha (%)	55.39	-0.07
	(49.83)	(0.07)
Accounts held (#)	1.06	-0.12
	(0.59)	(0.08)
Savings groups (#)	0.14	-0.01
	(0.35)	(0.05)
Takes savings decision at home (%)	84.80	-0.01
	(35.99)	(0.05)
Trusts the BCSA and banks (%)	68.63	-0.04
	(46.51)	(0.07)
Impatient (%)	44.12	-0.04
	(49.77)	(0.07)
Distance to the BCSA (km)	0.31	0.05*
	(0.21)	(0.03)
Weeks interviewed (#)	13.16	0.56
	(3.68)	(0.52)
Observations	204	204

The first column reports means (and standard deviations), and the second column shows the coefficient estimates (and standard errors) of the difference between the means in the treatment and control groups. *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent

to exclude the village from our experiment. As the BCSA's decision was unrelated to our study, the attrition is orthogonal to the experimental treatment assignment.

Of the 204 respondents in our study, only three never attended the weekly interviews. As shown in Table 1, the average person was interviewed 13.2 times and there is no statistical difference between the treated and control. Furthermore, Table 11 in Appendix B shows we cannot predict well the number of weekly interviews a respondent attended based on observables. The R-squared is 0.15 only. The final sample consists of 2685 interviews of 201 individuals over 17 weeks.

4 Results

In Section 4.1, we provide details on account use by the treatment group, before estimating the impact of providing a bank account on different savings tools in Section 4.2. The results are promising: the treated respondents use their account, and have higher total savings (measured as the sum over all their financial assets). Furthermore, as there is no treatment effect on other savings at the household level, we also find a positive effect on the household's total savings. In Section 4.3, we test different heterogeneous effects. The positive treatment impact is significantly stronger among people with higher levels of patience at baseline, and among those who live closer to the BCSA. Furthermore, the distance effect is stronger for women than for men. This is suggestive evidence that access to banking, and reducing distances to bank branches or agents, is even more important for women, a group that faces stronger mobility constraints. Next, Section 4.4 shows that the treatment did not significantly affect expenditures, loans, transfers and incomes, but helped the treated households to better smooth consumption. Indeed, Section 4.5 demonstrates that the association between variations in income and expenditures is much stronger in the control than in the treatment group. Finally, Section 4.6 shows that the treated respondents save from income peaks. This allows them to increase savings without having to reduce expenditures, and therefore to smooth consumption better.

4.1 Account Usage

We first provide summary statistics using a graphical representation. In Figure 1, the horizontal axis shows the number of weeks since the start of the experiment, and the vertical axis the balance in the BCSA account for both the treatment and control group. The average balance of the control group is positive, as two respondents opened an account themselves and did some transactions.

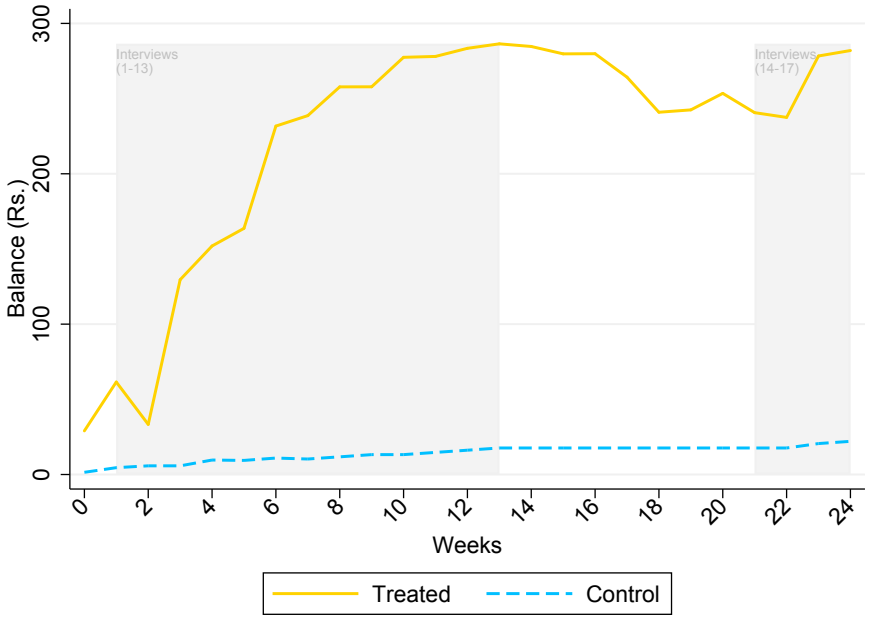

Figure 1: Study Area

Table 2 summarizes the treated respondents' transactions on the BCSA account during the interview weeks. The statistics are based on the administrative data. The respondents used their account actively. The average person made 3.18 deposits in 17 weeks and 64% deposited at least once. The average amount per deposit is Rs 171.8. They withdrew less often, but took larger amounts at once. Indeed, the average amount per withdrawal is Rs 463.

4.2 The Impact of Opening a Bank Account

To estimate the impact of being provided a bank account, we use data from the weekly interviews that we supplement with administrative data. The sample con-

Table 2: Account Usage in the Treatment Group

Deposits		Withdrawals	
Total number (Std. dev.) [Obs.]	Average amount (Std. dev.) [Obs.]	Total number (Std. dev.) [Obs.]	Average amount (Std. dev.) [Obs.]
3.18 (4.04) [102]	171.8 (486.1) [65]	0.42 (1.14) [102]	462.9 (476.2) [19]

sists of 2685 interviews taken from 201 different respondents. Our main specification is a pooled panel model:

$$Y_{ijt} = \alpha_0 + \alpha_1 T_{ij} + \alpha_2 F_{ij} + \alpha_3 X_{ij} + V_j + W_t + \epsilon_{ijt} \tag{1}$$

where Y_{ijt} is the outcome variable of interest for individual i in village j during interview week t, T_{ij} is a dummy indicating the respondent is treated and F_{ij} that she is a woman (the variable we stratified upon). X_{ij} is a vector that includes all the baseline characteristics that were presented in Table 1, apart from the last one. We present results without these individual controls in the main text, and with them in Appendix B. Finally, V_j and W_t are village and time fixed effects, and ϵ_{ijt} is the error term.[12] The standard errors are clustered at the individual level.

We also show the impact on the final value of the outcome variables, i.e. on the value that was recorded during the last weekly interview. To do so, we adjust equation 1:

$$Y_{ij} = \beta_0 + \beta_1 T_{ij} + \beta_2 F_{ij} + \beta_3 X_{ij} + V_j + \varepsilon_{ij} \tag{2}$$

Standard errors are now calculated using nonparametric bootstrapping.

Table 3 provides the impact on the respondent's financial assets. For each asset, we present the impact on the amount deposited during the seven days that precede the interview date (panel A), the inverse hyperbolic sine transformation of

[12] As there is only one banker per village, the village fixed effects also absorb all banker fixed effects.

the balance (panel B), and the final balance (panel C). The first two columns show the effect on different measures of savings on the BCSA account: (1) *BCSA account (balanced)* is the respondent's balance the day after interviews were conducted in the village, independent of whether the respondent attended the interview or not (a balanced panel) and (2) *BCSA account* is the respondent's balance the day after he was interviewed in the village.[13] Details about the other financial assets are based on information that was gathered during the weekly surveys. We estimate the treatment effect on: (i) cash at home, (ii) savings with self-help groups (SHGs) and other informal neighborhood groups, (iii) money with the post office and agricultural cooperatives, (iv) money on other accounts, and (v) the sum of those assets and the savings on the BCSA account. The results do not include control variables, but are similar to those that do so (see Table 12 in Appendix B). We apply an inverse hyperbolic sine transformation to deal with large values. Table 13 in Appendix B also shows the results in levels, both with and without trimming.

Receiving a BCSA account has a significant positive impact on the deposits into and savings on the account, while the coefficients are systematically close to zero for the flow and the stock of other financial assets. Remark that we do not observe the flow of cash at home, and that villagers cannot deposit with the post office or cooperatives. They can - but rarely do so - into other accounts. As a result, there is a positive impact on the respondent's total financial savings.

We now turn to savings at the household level. Given the financial lives of household members are connected, there may be spill-over effects. Table 4 shows the impact on financial assets, on money guarded by others, and on the total stock of jewelry, grain and livestock.[14] The pattern is similar to what we found in Table 3. Receiving a bank account has a significant positive impact on the household's savings on the account and on total financial savings. There is no crowding out of other savings tools.

[13]The weekly interviews were delayed in some villages to facilitate a close follow-up of the enumerators in the first couple of weeks. As a result, we did 17 interviews in 11 villages, 16 interviews in two villages, 13 in three villages, and 11 in the final one. To give the villagers time to transact, we use the balance the day after the interview took place (as in Somville and Vandewalle, 2018). The results do not change if we use the account balance on the interview day instead.

[14]We do not have information on the amount saved in cash by the different household members.

Table 3: Treatment Effect on the Respondent's Savings Behavior

	BCSA account (balanced) (1)	BCSA account (2)	Cash at home (3)	SHGs (4)	Post office and cooperatives (5)	Other banks (6)	Total (7)
Panel A: Impact on the amount deposited (level)							
New account	28.6***	32.8***		-0.3	0.0	-0.4	32.1***
	(5.7)	(7.6)		(1.4)	(.)	(1.0)	(7.7)
R^2	0.04	0.05		0.04		0.02	0.04
Mean dependent (control)	1.3	1.6		3.3	0.0	1.5	6.4
Observations	3228	2685		2685	2685	2685	2685
Panel B: Impact on the balance (inverse hyperbolic sine transformation)							
New account	2.85***	2.84***	0.14	-0.06	-0.38	0.07	0.42**
	(0.24)	(0.25)	(0.19)	(0.39)	(0.39)	(0.28)	(0.21)
R^2	0.45	0.47	0.10	0.20	0.19	0.40	0.11
Mean dependent (control)	0.1	0.1	5.7	1.5	1.8	1.7	6.8
Observations	3228	2685	2685	2685	2685	2685	2685
Panel C: Impact on the final balance (inverse hyperbolic sine transformation)							
New account	3.81***	3.65***	0.16	-0.18	-0.51	-0.31	0.35*
	(0.52)	(0.54)	(0.21)	(0.43)	(0.49)	(0.31)	(0.19)
R^2	0.50	0.48	0.01	0.11	0.13	0.01	0.01
Mean dependent (control)	0.1	0.1	6.4	1.6	2.0	2.1	7.3
Observations	204	201	201	201	201	201	201

The table presents the impact on the respondent's financial assets. For each asset, we present the impact on the amount deposited during the seven days that precede the interview date (panel A), the inverse hyperbolic sine transformation of the balance (panel B), and the final balance (panel C). The financial assets are (1) savings on the BCSA account during the full period of our study, (2) savings on the BCSA account for the weeks during which the respondent joined the weekly interview, (3) cash at home, (4) savings with informal groups, (5) money with post offices and cooperatives, and (6) money on other accounts. Column (7) presents the impact on sum of all the assets. All columns include time and village fixed effects and control for gender. Standard errors are clustered at the individual level in panel A and B, and are bootstrapped in panel C. *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table 4: Treatment Effect on the Household's Savings Behavior

	BCSA account	SHGs	Post office and cooperatives	Other banks	Total financial savings	Money guarded	Jewelry, grain and livestock
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Impact on the balance (inverse hyperbolic sine transformation)							
New account	2.66***	-0.13	-0.07	0.04	0.82**	-0.08**	0.04
	(0.26)	(0.52)	(0.48)	(0.30)	(0.41)	(0.03)	(0.54)
R^2	0.47	0.09	0.11	0.45	0.14	0.07	0.14
Mean dependent (control)	0.3	2.9	3.0	2.2	5.8	0.1	8.2
Observations	2685	2685	2685	2685	2685	2685	2685
Panel B: Impact on the final balance (inverse hyperbolic sine transformation)							
New account	3.50***	-0.28	-0.06	-0.38	0.99**	-0.15	0.12
	(0.49)	(0.50)	(0.58)	(0.42)	(0.48)	(0.23)	(0.38)
R^2	0.45	0.00	0.00	0.01	0.03	0.02	0.01
Mean dependent (control)	0.2	3.2	3.0	2.5	6.0	0.2	8.2
Observations	201	201	201	201	201	201	201

In column (1) the dependent variable measures the balance on the BCSA account for those weeks during which the respondent joined the weekly interview. In column (2) it measures savings with informal savings groups; in column (3) transactions with post offices and cooperatives; in column (4) transactions into other accounts and in column (5) the total over all these financial assets. Finally, column (6) shows the impact on money guarded by others and column (7) on the stock of jewelry, grain and livestock. Panel A presents the impact on the weekly balance, and panel B on the final balance. All columns include time and village fixed effects and control for gender. Standard errors are clustered at the individual level in panel A and are bootstrapped in panel B. *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

4.3 Heterogeneous Effects

Our pre-analysis plan specifies four baseline characteristics for which we would test for heterogeneity in treatment effects: the respondent (i) is a women, (ii) is impatient, (iii) takes savings decisions in the household, and (iv) trusts both the BCSA and banks. In addition, we also focus on the distance to the bank from the respondent's house. To do so, we estimate separate regressions, which take the following form:

$$Y_{ijt} = \gamma_0 + \gamma_1 T_{ij} + \gamma_2 F_{ij} + \gamma_3 T_{ij} \times BC_{ij} + V_j + W_t + \eta_{ijt} \tag{3}$$

Y_{ijt} is the balance in respondent i's account the day after we conducted weekly interview t in village j, and BC_{ij} the baseline characteristic. Each column of Table 5 shows the result for a different characteristic.

Table 5: Heterogenous Effects: Gender, Being Impatient, Takes Savings Decisions, Trusts the BCSA and Banks and Distance to the Bank

	Impact on the final balance of the following baseline characteristics:						
	Woman	Impatient	Decides savings	Trusts bank & BCSA	Distance to the bank		
					All	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
New account	2.45***	3.44***	3.76***	2.82***	3.59***	3.02***	4.33***
	(0.31)	(0.33)	(0.69)	(0.45)	(0.43)	(0.55)	(0.69)
Baseline var	0.11	0.62**	0.19	0.49	1.10	0.84	0.89
	(0.24)	(0.29)	(0.45)	(0.32)	(0.70)	(1.21)	(1.47)
New account x	0.76	-1.37***	-1.10	0.07	-2.43**	-1.79	-3.42*
Baseline var	(0.47)	(0.50)	(0.76)	(0.56)	(0.97)	(1.40)	(1.86)
R^2	0.48	0.49	0.48	0.48	0.48	0.47	0.51
Mean dep (control)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Observations	2685	2685	2685	2685	2685	1312	1373

Each column presents the heterogeneous effects for a different baseline characteristic: the respondent (1) is a woman, (2) is impatient, (3) takes savings decisions at home, and (4) trusts both the BCSA and banks. In the columns (5) to (7), we look at the distance to the bank for the full sample, and for the sub-samples of men and women respectively. The dependent variable is the respondent's balance the day after we conducted the weekly interview. All columns include time and village fixed effects and control for gender. Standard errors are clustered at the individual level. *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

The treatment effect is positive and significant in all the specifications. The interaction term is significant for two baseline characteristics. First, patient respon-

dents save more on their account than respondents who exhibit a larger impatience level at baseline. This is consistent with the theoretical expectation that more patient people save more. Second, the treatment effect is driven by respondents who live close to their banker. In the columns (6) and (7) we split the sample between men and women: the estimates are less precise but suggest that distance mainly matters for women. This finding is confirmed when we run a triple difference-in-difference regression: distance matters, but it matters more for women than for men.[15]

4.4 Impacts on Expenditures, Loans, Transfers and Income

We now check the impact on downstream outcomes. Table 6 shows a precisely estimated zero impact on the expenditures on (1) frequent purchases, (2) temptation goods, (3) non-frequent products, (4) investment, (5) the total over these goods, and (6) food. Apart from the additional "food" category, the classification is exactly the same as in Somville and Vandewalle, 2018: frequent purchases is the sum of expenditures on goods that are bought frequently by the average household, and temptation goods are products that are not *survival necessities* (Banerjee and Mullainathan, 2010).[16] "Food" is the sum of expenditures over all the items that are eatable, independent of whether these are bought frequently, infrequently or can be classified as temptation goods (such as snacks from the market).

Table 7 shows that the household's net inflow of loans and transfers, and total income does not differ between the treated and control. The net inflow of loans is the total amount borrowed, minus the total amount lent, plus the net amount of reimbursements received. Similarly, the net inflow of transfers is the total amount received, minus the total amount given. The final variable - total income - sums the revenues from eight different sources: wage labor, self-employment, the sales of goods, livestock, crops and forest products, renting out of assets and land, and public transfers.

[15] The results are available upon request.

[16] Frequent purchases includes expenses on grains, cereals, pulses, lentils, milk products, edible oil, vegetables, fruit, sugar, salt, spices, fuels, soap and washing powder; and temptation goods on pan, alcohol, tobacco, drinks and snacks from the market, hair oil, lotion and perfumes.

Table 6: Treatment Effect on the Household Expenditures

	Frequent	Temptation goods	Non-frequent	Investments	Total	Food
	(1)	(2)	(3)	(4)	(5)	(6)
New account	0.06	0.02	-0.00	-0.02	0.05	0.08
	(0.09)	(0.16)	(0.20)	(0.22)	(0.11)	(0.10)
Mean dep (control)	6.1	4.2	4.9	1.5	7.0	6.1
R^2	0.12	0.11	0.08	0.06	0.10	0.12
Observations	2685	2685	2685	2685	2685	2685

The dependent variables are the hyperbolic sine transformations of expenditures on (1) frequent purchases, (2) temptation goods, (3) non-frequent products, (4) investments, (5) the total over these goods, and (6) food. All columns include time and village fixed effects and control for gender. Standard errors are clustered at the individual level. *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table 7: Treatment Effect Loans, Transfers and Total Income

	Loans	Transfers	Total income
	(1)	(2)	(3)
New account	-0.01	0.07	0.07
	(0.17)	(0.11)	(0.12)
Mean dependent (control)	-0.5	-0.8	6.3
R^2	0.04	0.09	0.15
Observations	2685	2685	2685

The dependent variables are the hyperbolic sine transformations of the net inflows of loans and transfers, and total income. All columns include time and village fixed effects and control for gender. Standard errors are clustered at the individual level. *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table 8 provides additional details for the eight different sources of income. Column 1 shows the mean revenue, column 3 the proportion of observations with a positive amount, and the columns 2 and 4 the impact of having access to a bank account on the mean income and on the proportion of positive amounts respectively (coefficient α_1 in equation 1). The table reveals two important facts. First, there is no significant impact of providing access to a bank account on any of the income sources. Second, wage employment is the most important and most regular source of income. Indeed, the average household receives revenues from wage employment in 88% of the weeks. The second most important source of income is sales of agricultural products, which provides revenues in 7.5 percent of the weeks only. Table 8 provides additional information for the two sources of income that can directly be linked to the respondent, namely wage employment and self-employment. The insignificant impact suggests that access to a bank account does not influence the respondent's income.[17] These findings are important for the interpretation of the results on consumption smoothing in the next section.

4.5 Consumption Smoothing

We now investigate whether providing access to a bank account enhances consumption smoothing over time. To do so, we compare the correlation between weekly income and expenditures for the treated and control. This approach has been used by Townsend (1994) and Morten et al. (2017) and is based on the result that expenditures should not correlate with weekly variations in income if they are perfectly smoothed over time. Compared to the existing literature, our data is particularly informative as it allows calculating the correlation within households across time. We estimate the following equation:

$$Y_{it} = \delta_0 + \delta_1 Income_{it} + \delta_2 Income_{it} * T_i + H_i + W_t + \theta_{it} \tag{4}$$

Y_{it} are the expenditures on the different categories of goods by respondent i's household during the seven days that precede the interview of week t. $Income_{it}$ measures the household's income over the same period, and H_i and W_t are house-

[17] On the contrary, Callen et al. (2014) found that access to doorstep banking increased wages in Sri Lanka.

Table 8: Income composition

	Mean (Std. dev.)	Coefficient on *New account* (Std. errors)	Positive amount (Std. dev.)	Coefficient on *New account* (Std. errors)
	(1)	(2)	(3)	(4)
Panel A: Income at the household level				
Wage employment	5.8	0.11	88.0	1.27
	(2.3)	(0.11)	(32.4)	(1.10)
Agriculture	0.5	-0.01	7.5	-0.22
	(2.0)	(0.13)	(26.4)	(1.78)
Public transfers	0.4	-0.05	5.5	-0.87
	(1.8)	(0.08)	(22.8)	(1.05)
Self-employment	0.4	-0.18	5.3	-2.38
	(1.7)	(0.20)	(22.3)	(2.54)
Livestock	0.1	-0.01	2.6	-0.01
	(0.9)	(0.12)	(16.0)	(1.75)
Sale of goods	0.1	-0.01	0.9	-0.01
	(0.7)	(0.03)	(9.4)	(0.37)
Rents	0.0	-0.03	0.4	-0.31
	(0.5)	(0.03)	(6.7)	(0.31)
Forestry	0.0	0.01	0.1	0.15
	(0.3)	(0.01)	(3.9)	(0.19)
Panel B: Income of the respondent				
Wage employment	5.2	0.15	84.1	1.30
	(2.4)	(0.09)	(36.6)	(1.19)
Self-employment	0.2	0.07	2.7	0.77
	(1.2)	(0.13)	(16.2)	(1.73)
Observations	2685	2685	2685	2685

Each line provides details for a different source of income: the mean revenue in column (1), the proportion of observations with a positive amount in column (3), and the impact of having access to a bank account on the mean income and on the proportion of positive amounts in the columns (2) and (4) respectively.

hold and time fixed effects respectively. As we use the hyperbolic sine transformation for both the expenditures and the measures of income, the coefficients reflect the income elasticity of expenditures.

The inclusion of household fixed effects - which control for all the household characteristics that are constant over time - greatly reduces the possibility of endogeneity biases in the estimates. A bias may still occur though if the treatment impacts weekly income. The Tables 7 and 8 in Section 4.4 however show this is not the case: neither total income, nor any of the eight sources of income differ between the treated and control.

Table 9 provides the results. We measure income through total income in Panel A and wage income in Panel B. We focus on wage income in addition to total income, as it is the most regular source of income for the household. Total income is positively correlated with expenditures on the different types of goods in the control group: on average, a 10% increase in total income corresponds to a 0.4% increase in frequent purchases and food expenditures. On the contrary, the correlation is close to zero for the treatment group. The results are even stronger when we focus on income from wage employment: while there is an important correlation between income on the one hand and total expenditures, frequent purchases, and food expenditures on the other hand for the control, it is nearly zero for the treated. Therefore, we conclude that access to a bank account enhanced the ability of the households to smooth consumption over time. The impact is large, but plausible: it is in the same range as what Morten et al. (2017) find in Bangladesh.

4.6 How Do Treated Households Smooth Consumption?

Providing access to a bank account increases savings (Table 3), but it does not reduce expenditures (Table 6). A plausible explanation is that the treatment induces additional savings from income peaks: the treated consume most of their income when it is low, but accumulate savings when it is high without having to reduce their expenditures in those periods. This explanation is in line with predictions from classical savings models with imperfect credit markets: "*savings are a much more effective cushion against high consumption than against low consumption*"

Table 9: Consumption Smoothing at the Household Level

	Frequent	Temptation goods	Non-frequent	Invest-ments	Total	Food
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Total income						
Total income	0.04***	0.04**	0.08***	0.15***	0.06***	0.04***
	(0.01)	(0.02)	(0.03)	(0.03)	(0.01)	(0.01)
New account x	-0.03**	-0.02	-0.03	0.05	-0.01	-0.04**
Total income	(0.02)	(0.02)	(0.04)	(0.05)	(0.02)	(0.02)
Total effect of *Total income*	0.01	0.02	0.04	0.19***	0.05***	0.00
for new account holders	(0.01)	(0.01)	(0.03)	(0.04)	(0.02)	(0.01)
R^2	0.06	0.03	0.02	0.06	0.05	0.07
Mean dependent (control)	6.1	4.2	4.9	1.5	7.0	6.1
Panel B: Wage income						
Wage income	0.04***	0.02	0.04*	0.01	0.03**	0.04***
	(0.01)	(0.02)	(0.03)	(0.03)	(0.01)	(0.01)
New account x	-0.05***	-0.02	-0.05	0.02	-0.03*	-0.05***
Wage income	(0.02)	(0.02)	(0.04)	(0.04)	(0.02)	(0.02)
Total effect of *Wage income*	-0.01	-0.00	-0.00	0.02	-0.00	-0.01
for new account holders	(0.01)	(0.02)	(0.03)	(0.03)	(0.01)	(0.01)
R^2	0.06	0.03	0.02	0.04	0.03	0.07
Mean dependent (control)	6.1	4.2	4.9	1.5	7.0	6.1
Observations	2685	2685	2685	2685	2685	2685

The dependent variables are the hyperbolic sine transformations of expenditures on (1) frequent purchases, (2) temptation goods, (3) non-frequent products, (4) investments, (5) the total over these goods, and (6) food. All columns include household and time fixed effects. Standard errors are clustered at the individual level. *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

(Deaton, 1991, p.1234).

To test this hypothesis, we investigate whether deposits into savings tools are positively correlated with income. We run equation 4, where Y_{it} now measures the amount deposited into respondent i's savings tools and $Income_{it}$ the wage income earned by the respondent in the seven days that precede the interview of week t. We consider the respondent's wage income as a good proxy for his or her personal income, as it is the most important and most regular source of revenues at the household level (see Table 8). H_t and W_t are still household and time fixed effects. The results in Table 10 show there is no relation between income and any of the savings tools for the control group (all the coefficients are negative but not significant). On the contrary, there is a large and positive correlation between income and deposits on the BCSA account (and total deposits) for the treated. This pro-cyclical savings behaviour confirms our hypothesis that the treated save more by keeping aside some of their incomes in better weeks.

Table 10: Income and savings

	BCSA account	SHGs	Post office and cooperatives	Other banks	Total
	(1)	(2)	(3)	(4)	(5)
Wage income	-0.18	-0.39	0.00	-0.14	-0.71
	(0.24)	(0.44)	(.)	(0.13)	(0.52)
New account x	4.45**	0.14	0.00	0.03	4.62**
Wage income	(1.96)	(0.44)	(.)	(0.19)	(2.04)
Total effect of *Wage income*	4.27**	-0.24		-0.11	3.92*
for new account holders	(2.01)	(0.21)		(0.20)	(2.05)
R^2	0.01	0.01		0.01	0.01
Mean dependent (control)	1.6	3.3	0.0	1.5	6.4
Observations	2685	2685	2685	2685	2685

In column (1) the dependent variable measures deposits on the BCSA account. In column (2) it measures deposits with informal groups; in column (3) deposits with post offices and cooperatives; in column (4) deposits into other accounts and in column (5) the total deposits in all these financial assets. All columns include household and time fixed effects. Standard errors are clustered at the individual level. *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

5 Conclusions

We reported from a randomized control trial that provided access to bank accounts to an unbanked population of rural India. We find that this access led to substantial increases in savings. Individual savings into the bank account increased, without any reduction of savings in other assets or from other household members. We hypothesised and provided some evidence that the very low distance to the bank agent is a major factor behind the large impacts. These findings prove that there is an important demand for savings, even among very low income people, and that this demand can be met by providing simple and convenient saving tools.

Because we use a rare dataset with very frequent and detailed observations at the household level, we could also investigate how access to banking, and increased savings, affect consumption smoothing. Despite the importance of the precautionary saving motive in the literature, there are few direct empirical tests of the link between variations in income and in expenditures, within households and across time. We have shown that the treated in this study smooth consumption substantially more than the control.

Access to banking is rapidly expanding worldwide. While previous studies have reported mixed effects, we argue that simplifying access and developing convenient saving tools will be key to increase usage and eventually people's welfare.

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Appendix A: Study Area

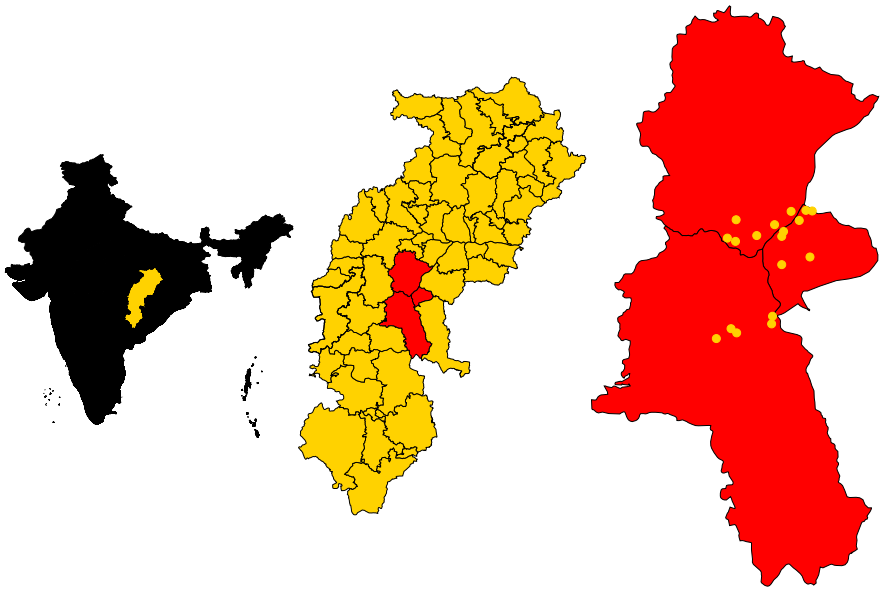

Figure 2: Study Area

Appendix B: Additional Results and Balance Checks

Additional Results

Table 11 examines whether we can predict the number of weekly interviews a respondent attends. To do so, we run a simple OLS regression:

$$Y_{ij} = \gamma_0 + \gamma_1 X_{ij} + \epsilon_{ij}$$

where Y_{ij} is the number of weekly interviews the respondent attended and X_{ij} the characteristics that were presented in Table 1. The standard errors are calculated using nonparametric bootstrapping. Few observables are correlated with the number of interviews, and the R-squared is 0.15 only.

Table 11: Prediction of the Number of Weekly Interviews

	Number of weekly interviews attended (1)
New account	0.5
	(0.5)
Woman	0.2
	(0.6)
Caste category: SC	2.9***
	(1.0)
Caste category: OBC	1.1
	(0.7)
Caste category: FC	-4.5
	(3.8)
Literate	0.2
	(0.6)
Married	0.1
	(0.9)
Age	0.0
	(0.0)
Wage labor in agriculture	-0.6
	(1.0)
Wage labor outside agriculture	-0.6
	(1.2)
Self-employed in agriculture	-1.6
	(1.1)
Self-employed outside agriculture	-0.2
	(2.8)
Land (acres)	-0.1
	(0.2)
Dwelling type: katcha	-1.1**
	(0.5)
Accounts held (#)	0.1
	(0.5)
Savings groups (#)	0.7
	(0.8)
Takes savings decision at home	-1.1
	(0.8)
Trusts the BCSA and banks	-0.6
	(0.6)
Impatient	-0.3
	(0.5)
Distance to the BCSA (km)	-0.6
	(1.4)
R^2	0.15
Mean dependent (control)	12.9

Table 12 provides the treatment effects that were presented in Table 3, but for regressions that include control variables.[18] The effect on the stock of total savings as measured during the last interview is (just not) significant. Otherwise, the results are similar.

Table 12: Treatment Effect on the Respondent's Savings Behavior (Including Controls)

	BCSA account (balanced) (1)	BCSA account (2)	Cash at home (3)	SHGs (4)	Post office and cooperatives (5)	Other banks (6)	Total (7)
Panel A: Impact on amount deposited							
New account	32.9***	37.2***		0.3	0.0	0.1	37.5***
	(6.1)	(8.2)		(1.2)	(.)	(1.0)	(8.2)
R^2	0.05	0.06		0.11		0.02	0.06
Mean dependent (control)	1.3	1.6		3.3	0.0	1.5	6.4
Observations	3228	2685		2685	2685	2685	2685
Panel B: Impact on balance (log)							
New account	3.01***	2.99***	0.04	-0.08	-0.10	0.38	0.43***
	(0.25)	(0.26)	(0.16)	(0.23)	(0.30)	(0.30)	(0.16)
R^2	0.48	0.50	0.18	0.71	0.57	0.46	0.34
Mean dependent (control)	0.1	0.1	5.7	1.5	1.8	1.7	6.8
Observations	3228	2685	2685	2685	2685	2685	2685
Panel C: Impact on final balance (log)							
New account	3.93***	3.80***	-0.12	-0.19	-0.10	0.14	0.34
	(0.47)	(0.48)	(0.22)	(0.23)	(0.51)	(0.25)	(0.25)
R^2	0.54	0.51	0.26	0.57	0.55	0.17	0.36
Mean dependent (control)	0.1	0.1	6.4	1.6	2.0	2.1	7.3
Observations	204	201	201	201	201	201	201

See Table 3 for a description of the columns and the panels. All columns include village fixed effects and the following baseline characteristics: the respondent's gender, caste category, literacy, marital status, age, occupation, land owned, dwelling type, accounts held, membership of savings groups, and distance to the BCSA. It also includes dummies indicating whether the respondent takes savings decisions in the household, trusts both the BCSA and banks, and is impatient. *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

[18] The coefficients of the control variables are available upon request.

Table 13 provides the impact on the level of balance. There is a significant impact on the balance on the BCSA account, but not on total savings (Panel A). This is due to some large values. If we trim the top 10% values, the impact is positive and significant. We opted to keep the full sample, but to show the results using an inverse hyperbolic sine transformation.

Table 13: Treatment Effect on the Respondent's Savings Behavior (Level and Windsorized)

	BCSA account (balanced) (1)	BCSA account (2)	Cash at home (3)	SHGs (4)	Post office and cooperatives (5)	Other banks (6)	Total (7)
Panel A: Impact on balance (level)							
New account	212.2***	187.2***	37.5	-90.7	-172.7	-37.7	-76.4
	(47.8)	(32.8)	(163.0)	(132.2)	(251.2)	(65.4)	(351.8)
R^2	0.18	0.24	0.05	0.13	0.06	0.06	0.06
Mean dependent (control)	13.5	16.6	826.8	378.4	538.2	170.8	1930.8
Observations	3228	2685	2685	2685	2685	2685	2685
Panel B: Impact on balance (windsorized)							
New account	92.9***	95.6***	17.1	11.8	-28.7	-2.2	263.9*
	(11.2)	(11.8)	(48.6)	(46.2)	(27.4)	(12.6)	(156.0)
R^2	0.26	0.27	0.06	0.19	0.19	0.25	0.08
Mean dependent (control)	0.8	0.9	429.7	103.5	105.4	54.0	1036.1
Observations	3048	2529	2549	2525	2524	2544	2527

See Table 3 for a description of the columns. Panel A shows the impact on the level of the balances, and panel B on the level after we trimmed the top 10% values.

Balance Check of Outcome Variables at Baseline

The Tables 14 and 15 provide a balance check for the baseline value of the outcome variables that are presented throughout the paper. The only significant difference between the treated and control, is the expenditures on food (at 10%). Therefore, we conclude that the sample is not only balanced for baseline characteristics, but also for outcome variables.

Table 14: Balance Check of Outcome Variables at Baseline: Savings

	Mean (Std. dev.) (1)	Coefficient on *New account* (Std. errors) (2)
Savings of the respondent		
Cash at home	4.02	0.25
	(3.15)	(0.44)
SHGs	0.97	-0.17
	(2.58)	(0.36)
Post office and cooperatives	1.06	-0.56
	(2.52)	(0.35)
Balance in other accounts	1.37	-0.06
	(2.49)	(0.35)
Total Savings	5.44	-0.37
	(2.93)	(0.41)
Savings at the household level		
SHGs	1.96	-0.12
	(3.51)	(0.49)
Post office and cooperatives	1.89	-0.27
	(3.12)	(0.44)
Balance in other accounts	1.74	-0.21
	(2.82)	(0.40)
Total Savings	4.45	-0.76
	(3.66)	(0.51)
Money guarded by others	0.13	0.05
	(1.08)	(0.15)
Jewelry, grain and livestock	7.62	0.12
	(4.31)	(0.61)
Observations	204	204

See Table 1

Table 15: Balance Check of Outcome Variables at Baseline: Expenditures and Income

	Mean (Std. dev.) (1)	Coefficient on *New account* (Std. errors) (2)
Expenditures		
Frequent expenditures	6.47	0.14
	(0.71)	(0.10)
Temptation goods	4.31	0.13
	(1.34)	(0.19)
Non-frequent expenditures	4.68	0.10
	(2.27)	(0.32)
Investments	2.65	0.19
	(3.60)	(0.51)
Total expenditures	7.27	0.13
	(1.11)	(0.16)
Food expenditures	6.43	0.18*
	(0.73)	(0.10)
Transfers		
Transfers	0.25	0.02
	(1.67)	(0.23)
Household income		
Total income	5.49	-0.02
	(3.34)	(0.47)
Wage employment	4.65	0.07
	(3.47)	(0.49)
Agriculture	0.58	0.09
	(2.22)	(0.31)
Public transfers	0.29	-0.20
	(1.37)	(0.19)
Self-employment	0.51	0.00
	(1.88)	(0.26)
Livestock	0.18	0.10
	(1.04)	(0.15)
Rents	0.09	-0.18
	(0.89)	(0.12)
Forestry	0.09	-0.05
	(0.72)	(0.10)
Income of the respondent		
Wage employment	4.38	0.02
	(3.26)	(0.46)
Self-employment	0.50	-0.01
	(1.85)	(0.26)
Observations	204	204

See Table 1

Appendix C: Pre-specified and Exploratory Analysis

The pre-analysis plan has ID number AEARCTR-0000387 and can be consulted on the website of the American Economic Association RCT registry . The pre-analysis plan also describe the analysis done in Somville and Vandewalle (2018), that uses different treatments and samples of the same project. The main deviation from the plan, is that we use the hyperbolic sine transformations of the dependent variables in the main text instead of the levels (the estimations in levels are in the appendix). We have done this given the non-normality of the distributions of our variables in levels, and the presence of a few extreme values, but we had not planned to do so beforehand. There are also additional outcome variables mentioned in the pre-analysis plan that we didn't include in this version of the paper to keep it concise. These are available upon request.