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‘Financial Inclusion’
Research Initiative

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The Role of Transaction Costs in
Access to Savings and Credit

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Abstract

Most Indian households lack access to basic formal financial services. This leaves the majority of India's high personal savings invested in physical assets, and the majority of its borrowing relegated to the informal credit market. The objective of this research is to identify and quantify the transaction costs of formal savings and credit services to assess whether or not these costs help explain the low use of financial services. To answer these questions, we conducted quantitative and qualitative surveys among 240 households and 6 focus groups in two villages and one urban neighborhood in Tamil Nadu, India, to gather detailed information about the costs incurred for nearly 400 savings accounts and 70 loans. For savings and loan products, we find that opportunity cost of time lost to travel and waiting is high and customers are sensitive to this time loss; documentation requirements are a substantial burden, and that transaction costs raise the overall price of financial services and may help to explain low demand. However, in the case of savings products, we also find that customers highly value the account as a means of preventing "impulse spending," and incurring a positive transaction cost to access funds may be a desirable product feature. These results imply that improving the design of transaction costs to increase demand for financial services would require a strong role for product design innovation, as well as supportive policy and the utilization of appropriate technologies. Future supply-side studies could focus more precisely on the design features of formal and informal savings products in order to highlight commitment mechanisms and transaction costs faced by customers.

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The Role of Transaction Costs in Access to Savings and Credit

1. Introduction

1.1 State of financial access in India

Low levels of financial inclusion have been reported in nationally-representative household-level surveys for decades, most prominently by the National Sample Survey Organization's (NSSO) decennial All India Debt and Investment Surveys (AIDIS). Data from the 2002 AIDIS revealed that despite India's vast network of bank branches and credit cooperatives, less than 27% of farm households utilized formal credit (Rangarajan, 2009). New nationally-representative data from the 2012 Global Financial Inclusion (Findex) database revealed that only 35% of all adults in India have an account at a formal financial institution (Demirguc-Kunt and Klapper, 2012). Moreover, the average account holder makes 1–2 deposits and withdrawals per month and tends to use bank tellers as their method of withdrawal, imposing high transaction costs on banks as well as clients. According to the Findex data, although 22% of adults reported having saved in the past year (2012), only 12% saved in a formal financial institution, and less than 8% of adults used formal credit in 2012.

1.2 Access vs. use of financial services

Measuring the extent of financial exclusion is complicated by the difficulty in distinguishing between access and use of financial services. "Financial exclusion" consists of both involuntary as well as voluntary financial exclusion. The "involuntarily excluded" are those who demand financial services but are unable to access those services. The reasons for such lack of access include discrimination on social, religious, or political grounds, contractual information that prevents institutions from profitably servicing clients, high prices or terms of contract that make products unaffordable, and lack of appropriate products and services (for example, people may demand simple transaction accounts, or be unable/unwilling to pledge collateral). In contrast, the "voluntarily excluded" are those who have access to financial services but have no demand for them. This may include individuals who prefer cash or savings in non-financial assets (such as gold or property), who lack awareness of financial products, as well as those who may be using formal finance indirectly, such as through a family member. From a policy perspective, it is important to target the involuntarily excluded group, as their lack of access is not driven by lack of demand but by supply-side considerations (World Bank, 2008).

1.3 Puzzle of savings in India

Despite the low levels of financial inclusion and low per capita income, India has a very high savings rate, with savings and investment as a percentage of GDP rising above 30% over the last five years (Nagarajan, 2012). Surprisingly, a large proportion of Indian households neither uses formal savings options nor participates in financial markets. As reported by the National Council of Applied Economic Research (NCAER) in 2012, only 11% of Indian households are classified as investor households. The majority of households prefer to save in physical assets such as business assets, gold, and property. This pattern of savings presents a puzzle: why do individuals decline returns from saving in formal financial instruments in favor of more illiquid savings mechanisms where they earn zero or even a negative real return?

2. Motivation

This research aims to contribute to the growing body of work on financial access by focusing on one particular aspect of accessing financial services—transaction costs—and examining the effect it has on the demand for those services.

These findings could be useful to formal financial institutions in designing appropriate savings and investment products, such as small money market mutual funds, that meet regulatory requirements and are appropriate to client needs. Product innovations that encourage households to move their savings from physical assets into financial assets would strengthen capital markets, promote financial inclusion, and give households the benefits of a positive return on their savings and a reduction in risk.

This study examines the hypothesis that transaction costs impose a significant cost in accessing formal savings and credit services.

3. Background

For the users of financial services, transaction costs consist of direct and indirect costs. Direct transaction costs include interest charges, service charges, and other charges levied by the provider. Indirect transaction costs include explicit costs such as transportation and incidental

expenses, photocopy and documentation charges, as well as implicit costs such as the opportunity cost of lost wages. There is evidence that the high, unstated transaction costs in the formal financial sector account for the continued persistence of the informal financial sector, even in economies with highly developed formal financial markets (Guirkinger, 2006).

3.1 Transaction costs of money transfers

Recent empirical work by the Centre for Microfinance (CMF) at the Institute for Financial Management and Research (IFMR) examined transaction costs for formal and informal remittance channels used by migrant workers. Gopinath et al. (2010) studied the conditions under which approximately 300 Indian migrants transferred money along four major migrant corridors. They found that 57% of the respondents most recently used an informal remittance service and only 30% of the respondents *ever* used formal payment services. These findings were initially surprising, as nominal rates were lower with formal providers and the majority of the migrants reported a preference for formal providers due to perceived safety and security. However, when the researchers quantified the opportunity costs of travel and waiting time, the informal transfer methods were found to be significantly cheaper than the formal transfer methods. Customers were very sensitive to the opportunity costs of time lost due to travel and waiting, and the nominal price was a secondary factor in deciding between different financial transfer methods.

3.2 Transaction costs of credit

Transaction costs of borrowing have been well-examined across multiple countries. Studies have consistently demonstrated that the effective interest rate, i.e., the nominal interest rate plus transaction costs, is the most relevant measure of the cost of credit.

3.2.1 Formal vs. informal borrowing

Ahmed (1989), building on the work of Gonzalez-Vega (1976) and Adams and Nehman (1979), examined the cost of credit for households in Bangladesh, and found that only half of the households studied borrowed from formal sources, despite the nominal rate on formal loans being 70% less than the rate of informal loans. Since the demand for credit is a function of the total cost of credit, the low uptake of formal credit might be explained by the higher transaction costs of formal loans. Ahmed's (1989) principal findings are that (1) the

transaction costs for the formal sector are greater than those in the informal sector, leading to an effective interest rate of approximately 100% for formal loans vs. 50% for informal loans, and (2) for small loans, the effective cost of borrowing from a formal institution is relatively higher. Moreover, lenders may be imposing high transaction costs as a means of credit rationing. Cuevas' (1988) comparative analysis of rural credit in eight countries from 1981–1988, de Guia-Abiad's (1993) study of the Philippine rural credit market from 1970–1980, and Hosseini et al.'s (2012) study of credit markets in Iran further support Ahmed's principal findings.

3.2.2 Group lending model

Karduck and Seibel (2004), Dehem and Hudon (2011), and Swamy and Tulasimala (2011) extended this analysis by comparing transaction costs for low-income households in South India that borrowed directly from banks and through self-help groups (SHGs). They found that the transaction cost for borrowing through SHGs was approximately one-fourth the cost of borrowing from banks, with the majority of transaction costs of using banks due to long and frequent visits to bank branches.

3.2.3 Critique of interest rates as unit of comparison

Other recent work (Collins et al., 2009) criticized the standard methodology of translating all implicit and explicit costs into a single fee and converting to an annualized percentage rate (APR), since an APR exaggerates the actual cost paid by users of financial services. It has been proposed that the charges for small, short-term financial transactions would be best interpreted as “fees.”

3.3 Transaction costs of savings

3.3.1 Effects of lower transaction costs

Making formal savings accounts cheaper and more easily available is typically expected to result in greater use of savings accounts and greater savings mobilization; this is the rationale behind many of the supply-side banking initiatives in developing countries. Evidence from bank expansions in developing countries confirms this theory. Nwuke (1997) analyzed savings behavior in six sub-Saharan African countries to examine how reducing transaction costs can mobilize savings. He found that bank density and urbanization have a positive effect on savings mobilization, and concluded that policies that reduce transaction costs—

such as rural and mobile banking—are likely to increase savings. These findings are supported by Aportela (1999), who found that the expansion of a national savings program in Mexico increased the savings rate by 7 percentage points for low-income households. Bank expansions in India and Thailand have had similar positive results on savings mobilization (Burgess et al., 2004, Kaboski and Townsend 2007).

However, while analyzing the implementation of a massive financial inclusion initiative in one district in India, Ramji (2009) found that the proliferation of “no-frills,” low-cost accounts did not increase formal savings among the intended beneficiaries. Simply providing access to the savings service will not guarantee its use unless the products are useful and appropriate to customer needs.

3.3.2 Effects of higher transaction costs

A growing body of literature on behavioral and experimental economics suggests that individuals actively seek constraints (such as fees or restrictions) on access to liquidity in order to increase savings. Research findings suggest that individuals have time-inconsistent preferences (Loewenstein and Thaler, 1992) and seek commitment mechanisms that bind their future actions (Ashraf et al., 2006a). Individuals may prefer to store their money in an account that is costly to access in order to prevent impulse spending (Banerjee and Mullainathan, 2010; Beshears et al., 2011; Rutherford, 1999). From such a perspective, high transaction costs of operating a saving account are a positive feature, insofar as the transaction costs reduce the likelihood of spending.

In addition to traditional savings devices such as money guards and lock boxes, deposit collection services have been well documented throughout Africa, India, and Bangladesh (Collins et al., 2009). Ashraf et al. (2006b) find that offering a deposit collection service in the Philippines had a significant positive effect on savings, and suggested that the service might have increased savings through several mechanisms, such as decreasing the transaction costs of making deposits, providing a public-commitment device for savings, providing a means of impulse control, preventing family members from using savings, and so on.

This study contributes to the existing research on the transactions costs faced by users of formal and informal credit and remittance products in two ways: first, by examining how the demand for formal savings services is impacted by transactions costs of opening and

operating a savings account, and second, by exploring the transaction costs of formal loans taken out by the households that participated in the survey, although the primary focus of the study is on savings.

4. Methodology

4.1 Sampling

The sample was not designed to be a representative sample of the costs of access to finance faced by all individuals in India. Rather, it was designed to be indicative of a wide range of experiences faced by low- to middle-income borrowers and savers, and to suggest further areas of research as well as provide inputs into discussions among policymakers and financial service providers. In aiming for depth over breadth of experience, the study was restricted to one geographic area. The state of Tamil Nadu was selected due to recently available data on financial access from a large-scale household survey in Tamil Nadu, which was used to develop our survey design and methodology. Table 1 presents an overview of the use of financial services in Tamil Nadu.

Table 1: Use of financial services in Tamil Nadu

	Percentage of households			Average savings (INR) per household with account
	With savings account	With insurance	With formal loan	
Rural Tamil Nadu	28	24	21	4250
Urban Tamil Nadu	34	33	20	11420
Tamil Nadu	31	28	21	8200

Source: Yale-CMF Tamil Nadu Socioeconomic Mobility Study (2009)

4.1.1 First stage

At the first stage of sampling, we selected three primary sampling units (PSU): one village each in two districts (Vellore and Tiruvannamalai) as well as one economically heterogeneous neighborhood in the city of Chennai. The villages were chosen based on purposive sampling from a set of villages consistent with average village characteristics (such as population size and the extent of the population involved in agriculture) as defined in the Census of India 2001. The urban neighborhood was selected based on previous work by the author in 60 neighborhoods across Chennai and based on the decision to survey a neighborhood with a diversity of occupations, residences, and enterprises.

4.1.2 Second stage

At the second stage of sampling, we selected households for two separate data collection exercises: (1) qualitative focus group discussions, and (2) quantitative face-to-face household surveys. In each PSU, a screening questionnaire was canvassed by census to select households that met the specified criteria for selection into focus groups and sample households. Our population of interest was households that were currently using savings services, or loan services, or both. The screening questionnaire established eligibility for the survey; households that had no experience accessing formal savings and loans were not eligible for the survey. Although this study proposes to examine the role of transaction costs as a contributing factor to financial exclusion, by definition, the financially excluded are unable to respond to detailed questions on transaction costs and were, therefore, not eligible for the study.

In addition to questions on basic financial access to establish eligibility for the study, the screening questionnaire captured the head of the household's occupation and highest level of education. These measures were used to classify and rank each household by socioeconomic status (SEC classification). Both the focus groups as well as sample households were selected by systematic random sampling based on the SEC classification.

Two focus groups were conducted in each PSU, stratified by SEC ranking, for a total of six focus groups. Holding two focus groups in each PSU among different populations allowed us to gather more depth on the nature of accessing financial services both within as well as between different socioeconomic groups.

Eighty households were interviewed in each PSU, with selection stratified by SEC classification. The total sample was 240 households.

4.2 Survey instruments

4.2.1 Qualitative instruments

For the qualitative focus groups, we conducted semi-structured group discussions. While the quantitative survey enumerated and quantified the specific transaction costs faced by users of financial services, the qualitative survey was designed to provide the context for the

quantitative data, to encourage discussions about the motivations and reasoning behind financial decisions, and to allow for unexpected insights and observations to emerge through the focus group discussions. The survey moderator was provided an interview guide. Each focus group discussion was fully transcribed and translated into English, and content analysis was performed to summarize the key differences and the observations of each focus group. All the focus group discussions were audited by an IFMR quality control monitor.

4.2.2 Quantitative instruments

For the quantitative household questionnaires, we used a structured, pre-coded questionnaire. An exploratory focus group discussion was conducted during the survey planning in April 2012 to provide inputs into the questionnaire development. Household questionnaires were extensively piloted. A two-day training session on the quantitative questionnaire (including mock calls) was conducted for the data collection teams. All the questionnaires were scrutinized on-site for errors and inconsistencies by a team supervisor; another 30% of the households were selected for spot checks for inconsistency/errors by IFMR's chief quality control monitor. Specialized software was designed for data entry; the questionnaires were double-entered to minimize data entry error.

5. Results

5.1 Savings

Overall, data on nearly 400 savings accounts was collected. Account information was captured at the household level. The average household had more than one account. On average, rural and urban households had the same number of accounts.

Multiple accounts in a single household could be due to accounts held by different household members, due to the existence of unused or "dormant" accounts, or due to the use of accounts for different purposes. During focus group discussions, participants expressed hesitation to close "old" or unused accounts. One participant expressed reluctance to close an SBI account he no longer used, stating that as it was his first bank account, he wanted to keep it for "sentimental reasons." Participants with their own enterprises typically reported owning between three and five separate accounts. Table 2 lists the average number of accounts per household in the population that was studied.

Table 2: Average number of accounts per household

	Rural	Urban	Average
Number of accounts per household	1.6	1.6	1.6

Multiple accounts per household can be explained by the primary purpose of the accounts held. A single household will use one account for personal transactions and a second account for business transactions. Overwhelmingly however, accounts were used for personal transactions, and a much higher proportion of accounts was used for business in our urban sample than in our rural sample, as shown in Table 3.

Table 3: Percentage of savings accounts, by primary purpose of account and by region

Purpose of account	Rural (%)	Urban (%)	Average (%)
Personal transactions	87.0	84.4	86.2
Business transactions	2.3	11.7	5.4
Receiving government payments	2.3	2.3	2.3
Other	13.0	0.8	9.0

. By an overwhelming margin, accounts at nationalized banks were the most common type of account in both our urban and rural sample. In our urban sample, nearly three times as many accounts were with private/foreign banks as compared to our rural sample (Table 4).

Table 4: Percentage of savings accounts, by bank type and region

Type of bank	Rural (%)	Urban (%)	Average (%)
Nationalized	86.6	77.3	83.6
Private/foreign	6.5	17.2	10.0
Grameen/Regional Rural Bank	6.1	0.8	4.4

In both rural as well as urban areas, accounts with nationalized banks had been open much longer (on average) than accounts with Regional Rural Banks (RRBs) or private/foreign banks (Table 5).

Table 5: Average age of account (in years, as of 2012), by bank type and region

Type of bank	Rural (years)	Urban (years)	Average (years)
Nationalized	6.7	8.5	7.2
Grameen/RRB	4.4	4.0	4.4
Private/foreign	3.5	4.2	3.9
Avg. age of account (all bank types)	6.3	7.5	6.7

The respondents were asked the reasons for opening the account (for each account); the various reasons cited are presented in Table 6. Detailed discussions with the focus groups revealed that the participants defined “safety” as (1) security from loss/theft as well as (2) a way to avoid spending—i.e., savings accounts were being used as a method of self-control. This finding—that people use savings accounts as a way of preventing themselves from spending—has also been discovered in multiple behavioral economics studies. In this sense, the “inconvenience” aspect of savings accounts is a desirable attribute, in that they make it more difficult for a person to spend. In our quantitative study as well as the focus group discussions, “security” and “to avoid spending” were frequently cited as the motivation for opening accounts.

Table 6: Reasons for opening an account

Reason	Rural (%)	Urban (%)	Average (%)
For security	77.9	77.3	77.7
To avoid spending	65.6	71.1	67.4
To receive salary	10.7	25.0	15.4
Earn interest on savings	2.7	21.9	9.0
Receive government payment	5.0	3.1	4.4

The majority of the respondents did not cite “earning interest” as a motivation for opening accounts, which is consistent with the finding that accounts were opened primarily for “safety;” this also reflects the negligible interest earned on the average savings account (Table 7). Respondents (self) reported low or negligible rates of interest on their savings accounts, although it is not clear whether this was due to the respondents’ lack of awareness

of the actual interest rate on the account or because the savings accounts in our sample were dominated by low-interest, no-frills accounts.

Table 7: Average annual interest earned per account, by bank type and region

Type of bank	Rural (%)	Urban (%)	Average (%)
Nationalized	0.32	1.06	0.56
Grameen/RRB	0.00	0.00	0.00
Private/foreign	0.00	0.95	0.57
Avg. interest earned (all bank types)	0.28	1.01	0.53

5.1.1 Costs of opening a savings account

An examination of the transaction costs of opening an account reveals that customers incur substantial costs in opening each savings account. The focus group discussions involved lengthy tales of the difficulties incurred in navigating a new bank account. The majority of the respondents in the household survey as well as the focus group discussions reported the need for multiple visits to a bank before an account was opened, for all types of banks (Table 8).

Table 8: Average number of visits to open an account, by bank type

Type of bank	Avg. number of visits
Nationalized	2.4
Grameen/RRB	2.0
Private/foreign	1.9
Avg. number of visits (all banks)	2.3

The respondents also reported substantial explicit transaction costs in opening an account (Table 9). Explicit transaction costs were dominated by transportation as well as food and beverage costs. Given the relatively higher costs reported for traveling to an RRB, the recent policy initiatives to push for more bank branches or representatives in rural areas may be helpful to customers. Photocopy costs were very high relative to the total costs; this is an area where technology could be harnessed to reduce customer burden. For example, the provision

of very basic photocopy instruments at financial institutions, or use of simple scanners, could reduce or eliminate this cost to customers. Though private banks are widely perceived—particularly by the participants in focus groups—to be more expensive than nationalized and Grameen banks, total explicit costs were lowest for private and foreign banks, largely through low cost of incidentals.

Table 9: Account opening cost (Rs) incurred by expense type and bank type

Expense Type	Nationalized (Rs.)	Grameen/RRB (Rs.)	Private/foreign (Rs.)
Transportation cost	54	91	52
Photocopy cost	45	37	43
Food, beverage, incidentals	27	62	16
Application processing fee	0	0	1
Revenue stamps/paper	1	3	2
Assistance for paperwork	1	0	0
Total	128	192	112

When examining implicit transaction costs—the opportunity cost of time spent to open a bank account—we see that total predominantly involved time spent gathering the documentation required to open an account; the time spent on documentation was highest for private and foreign banks, as shown in Table 10.

Table 10: Time (hours) spent to open account, by bank type

	Nationalized (hours)	Grameen/RRB (hours)	Private/foreign (hours)	Avg. time (hours)
Documentation	4.6	6.8	10.6	5.3
Waiting time	1.6	1.5	1.2	1.5
Travel time	1.4	1.2	1.5	1.4
Total	7.6	9.5	13.2	8.2

The opportunity costs associated with the time spent for documentation deserves further examination, as this requires significant effort by a client attempting to open a new account. For all banks, multiple forms of documentation of identity and residence were required. Documentation requirements are higher in urban than in rural areas—more than half of the

urban accounts required extensive documentation, as defined by five or more forms of documentation from the applicants, while less than 10% of the rural accounts required extensive documentation (Table 11). This suggests that documentation requirements would be more of a constraint for groups such as women, who typically have residence documents from elsewhere. Indeed, during focus group discussions, one participant described an ongoing, four-month process in opening a bank account for his wife, who had moved to Chennai from a nearby city. New migrants face challenges in getting proof of residence as well as an “introduction” from an existing account holder. Of all the groups, the poor face the greatest challenges in meeting documentation requirements, as they are least likely to possess multiple identity documents or have the social connections necessary for an introduction from an existing account holder.

Table 11: Percentage of savings accounts, by kind of documentation required to open accounts and by region

Documentation required	Rural (%)	Urban (%)	Average (%)
Photographs	90.1	96.9	92.3
Ration card	89.7	94.5	91.3
Introduction from existing a/c holder	93.9	79.7	89.2
Voter ID card	69.8	84.4	74.6
Driver’s license	7.6	62.5	25.6
PAN card	1.1	31.3	11.0
Birth certificate	2.3	2.3	2.3
Other government-issued photo ID	0.8	2.3	1.3
Letter from municipality/panchayat	1.1	0.0	0.8
Copy of electricity bill (own or house owner’s)	0.4	0.0	0.3
Copy of gas bill	0.0	1.6	0.5
Other documents	2.7	1.6	2.3

The documentation requirements for opening accounts are summarized in Table 12.

Table 12: Summary of documentation requirements for opening a savings account

	Rural (%)	Urban (%)	Average (%)
Accounts requiring at least 1 piece of	99.6	100	99.7

documentation			
Accounts requiring at least 3 pieces of documentation	89.3	95.3	91.3
Accounts requiring at least 5 pieces of documentation	8.0	54.7	23.3

The focus group discussions revealed that clients with experience at all types of banks felt that despite the increased time requirements and other barriers, opening a private or foreign bank account was a good move, in part because of the “more polite staff” at these institutions and also because of the faster processing time (as confirmed by our household surveys). Table 13 presents the data for one indicator—the delay (in days) between when the bank guaranteed the account would be opened and when the account was really opened; private banks performed better compared to the other bank types in this regard.

Table 13: Delay (in days) between when account was promised to be opened and when it was actually opened, by bank type

	Nationalized (days)	Grameen/RRB (days)	Private/foreign (days)	Avg. delay (days)
Delay per account	3.3	0.2	(1.8)	2.6

5.1.2 Costs of operating a savings account

In addition to the transaction costs of opening an account, individuals were asked about their current use of each account. Of the various services presented in Table 14, the respondents were asked which services they had used for their accounts in the previous 12 months. Cash withdrawal from banks and ATMs were the most commonly used services; however, for nationalized and Grameen banks, withdrawals were done at the branch level more often. In the focus group discussions, it was widely agreed that ATMs were a convenient way to make deposits and withdrawals. However, the unreliability of ATMs was a frequent item of discussion; ATMs lacking cash was also commonly mentioned. Mechanical problems—where the client attempted to withdraw cash and cash was not dispensed by the machine, but the amount was debited to the customer’s account—were heatedly discussed, with several participants stating that it took “months” for the bank to correct such errors.

Table 14: Percentage of savings accounts used for various banking services in the past 12 months, by bank type

Type of service	Nationalized (%)	Grameen/RRB (%)	Private/foreign (%)	Avg. for all banks (%)
Cash withdrawal- bank	57.7	52.9	51.3	56.9
Cash withdrawal -ATM	29.5	11.8	51.3	30.5
Issued cheque	7.4	0.0	23.1	9.2
Received salary	4.0	35.3	0.0	4.9
Received/ sent remittance	2.8	0.0	5.1	2.8
Received subsidy-govt.scheme	1.5	0.0	0.0	1.3
Issued demand draft	1.2	0.0	2.6	1.3
Received payment-govt.work	1.2	0.0	0.0	1.0
Used debit card	0.9	0.0	2.6	1.0

Transaction costs incurred on the most recent visit to bank branch were also detailed. On average, the cost to visit an RRB is much higher than for nationalized and private/foreign banks, with transportation and incidental costs forming the bulk of the explicit costs.

Table 15: Cost incurred during most recent visit to bank by expense type and bank type

Expense type	Nationalized (INR)	Grameen/RRB (INR)	Private/foreign (INR)	Avg. expense (all banks)
Transportation	24	41	30	25
Food, incidentals	8	23	3	8
Service charges	2	2	5	2
Total	33	58	37	34

Table 16 summarizes the time spent (in hours) on the most recent visit to the bank, categorized by bank type.

Table 16: Time (hours) spent on most recent visit to bank, by bank type

Expense type	Nationalized (hours)	Grameen/RRB (hours)	Private/foreign (hours)	Avg. time (all banks)
Travel time	0.5	0.5	0.6	0.6
Waiting time	0.5	0.7	0.4	0.5
Total time	1.0	1.3	1.0	1.0

Table 17 presents the transaction costs associated with formal savings, categorized by the socioeconomic status of the account holder.

Table 17: Transaction costs of formal savings, by socioeconomic status

	Primary source of household income				
	Agriculture/ livestock	Self-employed/ business	Agriculture labor	Daily labor	Salary wages
Avg. no. of savings a/c	1.6	1.7	1.2	1.3	1.8
Avg. age of savings a/c (yrs)	8.3	6.9	6.1	4.7	7.2
Avg. interest earned (%)	0.6	0.8	3.6	0.1	0.4
Avg. no. of visits to open a/c	2	2	3	2	2
A/c requiring 3 kinds of ID (%)	72	92	86	94	92
A/c opening cost (INR)	98	126	343	105	136
A/c opening cost (hrs)	4.2	8.6	4.3	12.4	6.7
A/cC operating cost (Rs)	Rs.22	Rs.30	Rs.151	Rs. 26	Rs.38
A/C operating cost(hrs)-visit	1.2 hrs	0.9 hrs	0.9 hrs	1.2 hrs	1.0 hrs

5.2 Credit

Quantitative data was also collected on sixty-six formal loans taken by our households.

Table 18: Loan Characteristics

	Rural	Urban	Average
Average age of the loan (years)	1.7	2.6	1.9
Average loan tenure (years)	2.4	1.2	2.3
Effective annual interest rate (%)	11.0	12.1	11.2
Difference between loan amount requested and amount given (Rs.)	8,749	5,000	8,011

As noted below, major purposes of loans across both rural and urban areas included education, home construction/improvement, or starting/expanding a business.

Table 19: Percentage of loans by primary purpose for taking the loan, by region

Purpose of loan	Rural (%)	Urban (%)	Average (%)
Education	20.8	38.5	24.2
Home construction/improvement	18.9	15.4	18.2
Jewelry	17	0	13.6
Start or expand business	9.4	23.1	12.1
Agriculture/Livestock working capital	7.5	0	6.1
Repay debt	3.8	0	3
Festival/function	3.8	0	3
Emergency/temporary difficulty	1.9	7.7	3
Land purchase	1.9	0	1.5
Household durables	1.9	0	1.5
Other	13.2	15.4	13.6

Transaction costs of credit directly impact the effective interest rate. Calculating the effective rate of interest requires deducting transaction costs from the total stated amount of the loan. As with savings accounts, our sample households report significant explicit and implicit costs in securing a formal loan.

Table 20: Average cost (Rs.) incurred for loan approval by expense type and region

Expense type	Rural (Rs.)	Urban (Rs.)	Average (Rs.)
Travel cost	122	85	115
Bribes/side payments	87	154	100
Food, beverages, incidentals	70	2	56
Documentation(copies,revenue stamps)	48	60	51
Application processing fee	0	38	8
Assistance for filling paperwork	0	0	0
Total cost	318	339	322

Table 21: Average time (hours) spent for loan approval by region

Average time (hours)	Rural (hours)	Urban (hours)	Average (hours)
Waiting time	3.8	1.2	3.2
Travel time	3.4	1.6	3.0
Total time	6.9	2.8	6.1

Similarly to savings accounts, respondents in our sample report that securing a loan requires multiple types of identity and residence documents. Though the quantitative study focused on formal loans, focus group discussions revealed that the majority of households with formal loans also had one or more outstanding informal loans. Focus group discussion participants agreed that although the interest rate of informal loans was higher, the “no worries” of informal loans made them a better “deal” for short-term credit needs, where convenience and flexibility are at a premium.

Table 22: Percentage of loans by documentation required for loan and region

Type of documentation	Rural (%)	Urban (%)	Average (%)
Photographs	52.8	53.8	53
Ration card	43.4	69.2	48.5
Introduction from existing A/C holder	30.2	38.5	31.8
Voter ID card	30.2	30.8	30.3
Drivers license	11.3	53.8	19.7
PAN card	1.9	46.2	10.6
Pay slip/income documentation	7.5	7.7	7.6

Birth certificate	1.9	0	1.5
Electricity bill	0	0	0
Gas bill	0	0	0
Confirmation from city/panchayat	0	0	0

Table 23 summarizes the number of documents required for taking out a formal loan, categorized by region.

Table 23: Documentation requirements for a loan, by region

	Rural (%)	Urban (%)	Average (%)
Loans requiring at least 1 document	100	100	100
Loans requiring at least 3 documents	41.5	69.2	47.0
Loans requiring at least 5 documents	11.3	38.5	16.7

6 Implications

The results of this study suggest several areas of possible intervention to decrease user transaction costs of opening and operating accounts, which might encourage the shifting of household savings from physical assets towards financial assets, benefiting savers as well as the Indian capital market. Although the primary focus of the study was on savings instruments, the findings related to transaction costs can also be extended to credit products.

6.1 Regulatory reform

Regulatory reforms can play an important role in reducing borrower transaction costs.

6.1.1 Flexibility in banking outlets

As noted in the discussion of the results, travel time (to open and to operate an account) is significant. Ongoing regulatory reforms to allow bank agents to assist in opening accounts (by gathering documentation and preparing forms) and in performing simple transaction services would be useful in this regard. Allowing a more flexible definition of a “banking outlet” would allow banks to meet this policy directive sooner and at a lower cost (to banks), with greater benefit to potential and current users.

6.1.2 Reducing documentation requirements

Even assuming a policy target of a complete banking outlet in every village and neighborhood, the results of the study suggest that the documentation requirements may pose a barrier to financial access for certain groups—particularly for women, low-income individuals, and new migrants. Even for those individuals who are able to meet the documentation requirements, the cost associated with the time assembling documentation as well as costs for photocopies is a major driver of high transaction costs of opening a new account. Policy changes to reduce and/or streamline documentation requirements could become a major driver of financial inclusion. Even in the absence of a policy change to reduce the number of documents required, a simple technology like low-cost, low-resolution copying or scanning devices at a banking outlet would be useful in reducing transaction cost associated with opening an account or getting approval for a loan.

6.1.3 Allowing greater savings product innovation

Given the demand for savings among customers as well as the tendency of customers to view barriers to withdrawal as a positive feature, policy reform to encourage product innovations and experimentation (discussed below) would be very helpful.

6.2 Use of technology

As mentioned earlier, even simple reforms such as mandating a low-cost copying device for each banking outlet would reduce the transaction costs of access. The increased presence of ATMs would reduce transaction costs (for providers as well as users) of operating existing accounts, particularly those involving low-value, high-volume deposits and withdrawals. It is important to note that care must be taken to ensure the reliability of technologies such as ATMs. As was discussed, the customers' satisfaction with their financial providers is quickly eroded when technologies fail. Moreover, the costs of such failure are passed on to customers; for example, customers face a significant time burden in terms of the opportunity cost of lost wages while attempting to rectify errors caused by ATM failures.

6.3 Product design

One of the more interesting implications of this study is in the area of product design. In line with other work, this study suggests that some individuals highly value the illiquid features of savings accounts. Customers view certain types of transaction costs—such as barriers to withdrawal—as desirable product features; this raises the question as to whether or not transaction costs can be tailored to account for household preferences. Our research suggests that there is scope for new savings products where the transaction costs to open an account (or take up a product) and to deposit savings are low or subsidized, while the cost of withdrawing savings are imposed on the customer. Product innovations in other countries have proven to be successful, although designing new products that meet the regulatory requirements would be a challenge. Product design innovations, together with regulatory support and the utilization of appropriate technologies, can be expected to trigger a shift in savings from physical to financial assets, bringing savers a greater return on their savings as well as benefiting Indian capital markets.

7. Limitations of the study and suggestions for further research

7.1 Limitations

First, due to the difficulties in measuring financial access, this study examined only the transaction costs faced by households that were currently using savings services, loans, or both. Our analysis was based on the broad assumptions that the transaction costs faced by user households would be similar to those faced by non-user households and that transaction costs partly explained the lack of demand for financial services by non-user households. Although we believe these assumptions to be reasonable, both deserve further examination. In addition (as mentioned in Section 4), this study was not designed to be a representative survey, and its findings cannot be generalized.

Second, our methodology for quantifying transaction costs quite likely understated the opportunity cost of the user's time. Early in the data collection process, it became clear that the opportunity cost of wages lost during financial transactions dominated the discussions on transactions costs. Quantifying the exact transaction costs requires income and wage information, which is notoriously difficult to capture. The existing methodologies to quantify the opportunity cost of time (such as the one used by Ahmed, 1989) used crude measures of

per-day earnings (such as average daily wage in the village). However, if users increasingly report that “convenience” is the most important aspect in a financial service, it is critical to account for wage and income differences of individual users in calculating the opportunity cost of lost wages. This methodology should be improved, and is an area for further research.

Third, due to policy changes in the documentation requirements for opening accounts and due to the fact that the majority of the savings accounts in our study were opened prior to these changes in documentation requirements, our findings could be overstating the transaction costs associated with opening an account today. Ideally, we would have examined the difference in costs of opening accounts before and after the policy changes, but we lacked the sample size to support this analysis.

7.2 Areas of further research

This study raises several areas of possible research, three of which were highlighted in the previous section—examining the differences between user and non-user households, methodological improvements in calculating opportunity cost of lost wages, and measuring the difference between documentation costs to open an account before and after a policy change.

However, we believe that a supply-side survey detailing several dozen formal and informal savings products in Tamil Nadu—with a focus on product design features and commitment mechanisms—holds the most exciting potential for further research; this would complement the demand-side data collected and analyzed here. During our qualitative interviews, we heard reports of several interesting savings products, but were unable to determine the exact product features as we were limited by the respondents’ own knowledge. For example, a focus group in one village told us of a popular scheme organized by a local bank, in which a bank agent from the nearby town visited the village once a week to collect cash deposits. Account-holders were free to deposit any amount above a fixed minimum of INR 100. To withdraw money, however, the villagers had to visit the bank branch in person, which imposed a degree of control on impulse spending by the account holders and reduced costs for the bank. Several of the focus group members participated in this savings scheme and were enthusiastic about the product. However, adequately documenting this product and

others like it would require visits to the service providers. The supply-side survey could also be extended to several key non-financial assets.

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