Ute Filipiak

Financial Investments, Financial Literacy, and Trust in Financial Institutions:

Evidence from Indian Households

Cuvillier Verlag Göttingen
Internationaler wissenschaftlicher Fachverlag

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Financial Investments, Financial Literacy, and Trust in Financial Institutions: Evidence from Indian Households

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Dipl. Oec. Ute Filipiak
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Dean: Prof. Dr. Michael Fallgatter Faculty B - Department of Economics, Schumpeter School of Business and Economics

1. Examiner

Prof. Dr. Werner Bönte
Chair of Industrial Organization and Innovation, Schumpeter School of Business and Economics, University of Wuppertal

2. Examiner

Prof. Dr. André Betzer
Chair of Finance and Corporate Governance, Schumpeter School of Busniess and Economics, University of Wuppertal

For my Grandma

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1. Introduction

1.1. Motivation

Financial market development is often considered to be relevant for economic growth and related to a reduction in poverty and inequality in particular in developing economies (Rajan and Zingales, 1998; Levine and Zervos, 1998; Honohan, 2008). While a large amount of literature examines the determinants of banking supply and the presence of financial services (Beck and Ross, 2005; Rajan and Zingales, 1998; Bekaert et al., 2005), more recent studies take into account the effect of private investments on financial market development. Honohan (2008) for instance argues that private households are important consumers of financial products and that their investments influence the scale and asset mix of finances. Burgess and Pande (2005) find that bank branch expansion in rural areas in India is related to poverty reduction. They explain their results by the increase in deposit mobilization and credit disbursement by banks in rural areas.

Hence, a low level of financial market participation among the general population might have essential drawbacks for the economy as a whole, but also for the individual himself. Individuals who participate in the financial market might be better able to save and prepare for financial needs in the future, and thereby they ensure themselves against risks. In many developing economies, financial market participation, within the general population, is still low. Globally, more than 2.5 billion adults do not have a bank account at a formal financial institution, and most of them are found within developing economies. In 2011 about 40 percent of individuals living in East Asia and Pacific had an account at a formal financial institution (Demirgüc-Kunt and Klapper, 2012). Therefore, it is an important question to answer: *Why do some individuals participate in the financial market while others do not?*

One reason for the limited demand for formal financial services in developing economies might be due to high fixed costs of the financial services (Cole et al., 2011). Using cross-country data Beck et al. (2007) show that the use of deposits and loan services is higher in countries with more developed financial systems, and he also argues that this is related to lower fixed transaction costs resulting from better financial access. Campbell (2006) argues that, in particular, less educated

and poorer households make significant mistakes in financing and - being aware of this - they avoid possible investment. He further argues, that these mistakes lead to an increase in welfare cost of the economy and also that economists should offer remedies that reduce the incidences in order to decrease welfare cost of investment mistakes.

Lusardi et al. (2011) find that financial literacy affects the financial decision making process and that individuals with a low level of financial literacy are more likely to stay away from risky investments like stocks. Lusardi and Mitchel (2008) shows that financial illiteracy is widespread among individuals with specific demographic groups in the US like individuals with low education, women, African-Americans, and Hispanics. Cole et al. (2011) tries to disentangle the effects of fixed transaction costs and financial literacy on the decision to make an investment. In doing so, they combine survey data with a randomized field experiment among unbanked households in Indonesia. Their results suggest that financial literacy alone does not lead to a greater demand for financial services among the general population and that rather financial subsidies might be more relevant (Cole et al., 2011). Nevertheless, studies on financial literacy in developing economies are scarce, and new findings might add new insights into this field of research and complement the existing empirical results .

Another important factor is the role of social boundaries, which are often strong among individuals in developing economies. Munshi and Rosenzweig (2006), for instance, show that lower castes families in India tend to send their sons into local language schools in order to follow traditional occupations. The caste system in India is still prevalent and might determine social interaction of individuals within India. Strong social relationships might also affect the financial decision of an individual. Hong et al. (2004), for instance, show that social interaction and financial market participation are positively related because social investors learn about financial matters via word-of-mouth communication and observable learning. Therefore they argue that social individuals are more likely to invest in risky assets more so compared to non-social investors. While their results are based on a sample of US-investors, little is known about this relationship in developing economies.

The literature on financial development provides also alternative explanations for a low level of financial market participation of individuals, and points for instance, to the evidence of trust (Dearmon and Grier, 2009; Guiso et al., 2004, 2008). Guiso et al. (2008) show that trusting individuals are more likely to make risky investments and have higher preference to invest a larger amount of their money. Their empirical analyses are based on a sample of US - investors and customers of a large Italian bank. Their findings suggest that trust is an important determinant for the individual and his investment decision. Calderon et al. (2002)

provides empirical evidence that the general level of trust and financial market development are positively related. Because it is difficult to measure, the individual subjective level of trust in an investment or a financial institution has often been left out in economic analyses.

Karlan and Morduch (2010) as well as Demirgüc-Kunt and Klapper (2012) argue that the importance of savings and investments of individuals in developing economies has remained mostly unconsidered in the past years and that more research in this field is needed. Demirgüc-Kunt and Klapper (2012) study non-participation of households using cross-country data. They investigate why individuals do not possess a formal bank account and detect different self-reported barriers e.g. high account cost, not sufficient income to invest, lack of trust, or a large distance to the bank. However, they conclude that reasons of non-participation vary, and that a better understanding of the individual characteristics associated with certain financial behavior is still needed (Demirgüc-Kunt and Klapper, 2012).

The above shows the importance of the relation between different determinants of financial behavior of individuals in developing economies and financial market participation. Despite the considerable interest from financial institutions and public policies, there has been little research on these topics until now. The relevance of investigating this in more detail includes the following. First, a better understanding of the individual's decision making process in a developing economy might lead to insights on why some individuals make use of certain financial products while others choose not to. Second, knowing about individuals' characteristics and preferences for certain financial products may improve the response rate of banks and other financial institutions, and allow for a better fit between supply and demand. Third, knowledge about the individuals' financial knowledge on different investment settings offers valuable insight on how to link financial programs to certain investments. In this thesis, we will focus on this importance in analyses on various aspects of Indian households and their financial behavior.

India is very well suited for the analyses of financial market development and the investigation of financial market participation of households because it provides certain particularities which allow for a profound investigation of the selected topics of this thesis. The Indian financial market offers a variety of different financial products e.g. Indian specific instruments like chit funds or group savings, as well as shares and bonds. These different products can be used for comparison in order to investigate the preferences for certain financial products among individuals in India. Moreover, the particularities like the Indian caste system allow for the investigation of social networks because social boundaries seem to be stronger within certain castes more so than between castes.

Moreover, in India, as well as in other developing economies characterized by a higher level of corruption, public institutions often are mistrusted by the population Hakhverdian and Mayne (2012). This, however, may not only be true for public institutions but also might be an issue for financial institutions in India as well. Trust plays an important role in many economic decisions in India. Hence, investigating the role of individual trust in the context of the Indian financial market, will add new insights to the existing literature of trust and financial market participation of individuals. The Reserve Bank of India (RBI) has undertaken many policies aiming at increasing financial market participation among the population but the demand for financial services is still low. This is particularly interesting since Indians are known as one of the largest savers in the world. This allows for analyzing the reasons of non-participation of potential investors. The Indian financial market experienced radical changes in the past decades. After financial market liberalization in 1991, new financial institutions as well as financial products have emerged. This is similar to many other developing economies. Hence, some results might be applicable to some extent, in a much broader sense.

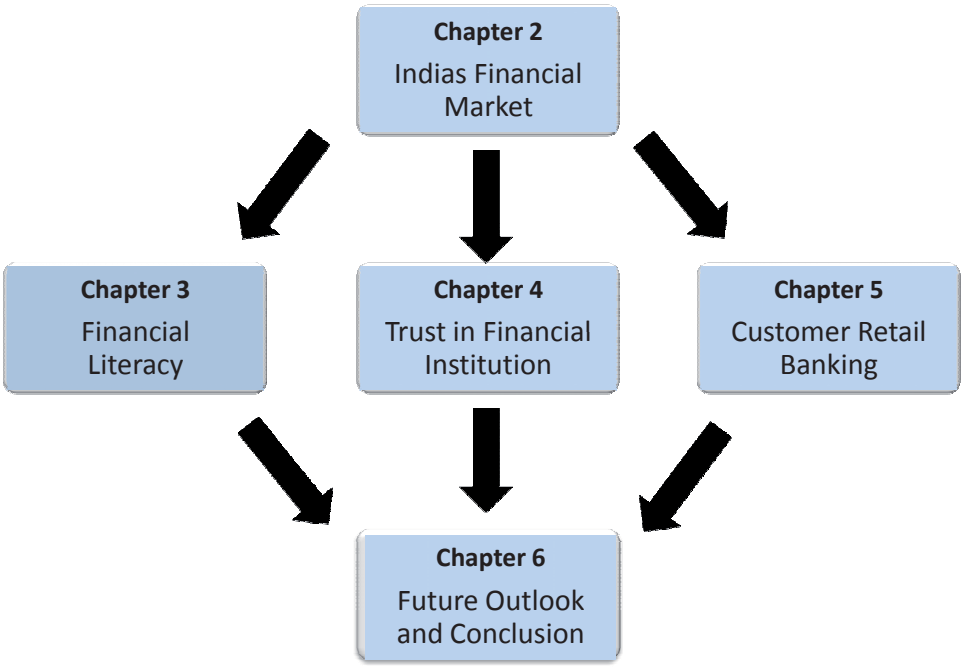
1.2. Aim

This thesis aims to shed light on different determinants of financial market development in India. In particular this thesis investigates different determinants of financial market participation of individuals. In doing so, relevant and less considered topics like financial literacy, household trust in financial institutions, and the role of foreign banks in customer retail banking in India are investigated. More specifically, the thesis aims to investigate some possible reasons of non-participation of Indian households and their interrelation with other important determinants. Figure 1.1 shows the conceptual framework of the thesis. In order to introduce the reader to the topic of the Indian financial market, chapter 2 provides an overview of the Indian financial market and sheds light on aspects of supply and demand for financial services. The following chapters refer to selected issues discussed in chapter 2.

In order to reveal the relevance of financial literacy for financial market participation in a developing country like India we want to show that determinants like social interaction and the caste system play an important role (chapter 3). The corresponding article "Financial Literacy, Information Flows, and Caste Affiliation: Empirical Evidence from India" is coauthored with Werner Bönte and published in the Journal of Banking and Finance, Volume 36, Issue 12 in 2012.

Further, we aim to illustrate that although the number of financial institutions and their branches in India has increased remarkably over the past years, access to a financial institution is still very important, particularly for establishing trust

Figure 1.1.: Conceptual framework of the thesis



in a financial institution (chapter 4). The article "Trusting Financial Institutions: Out of Reach, out of Trust?" is publicly available as Schumpeter Discussion Paper 2013-02.

Today, people in India are faced with new financial institutions and services since the opening of the financial market in 1991. We want to show that different determinants e.g. a low level of education or strong market regulations might affect the individuals' trust in foreign banks rather negatively compared to private domestic banks (chapter 5). In order to sum up the results, the single topics are discussed jointly in chapter 6.

1.3. Contribution and Outline

This thesis contributes to the existing literature in several important aspects and consists of four self- containing chapters, which deal with different topics of household demand for financial services in the context of the Indian financial market. Chapter 2 gives an overview of the Indian financial market, its deregulation process and India's current banking structure, and provides first insights into the topic of household demand for financial services. Chapter 3 shows the relationship between caste affiliation, social interaction, the awareness of different financial products, and the individual investment decision. Chapter 4 analyzes the role of individual access for trust in different financial institutions in India. Chapter 5 aims to explain why retail banking customer trust is lower for foreign banks operating in the Indian host market than for private national banks. Chapter 6 concludes.

Chapter 2. The Indian Financial Market

India is a very diverse and dynamic country and economic outcomes are often related to cultural or socio-economic particularities. The caste system, although officially abolished, for instance, is still prevalent and affects individuals in their day-to-day life and in their economic decisions. In India, many discrepancies still exist; among rich and poor, old and young, foreigners and Indian domestics. Hence, it is often difficult to grip certain problems in particular, in the field of financial market development.

The first study provides therefore, an overview of the Indian financial market. It describes the main outcomes of the liberalization process and the structure of the Indian financial market between times of liberalization and today. It reviews the literature on financial market liberalization and economic growth, and shows the major results. Moreover, this study gives first insights into critical issues of supply and demand for financial products in India and explains Indian specific financial

products like chit funds and group savings. Further, the role of microfinance institutions and NGO's is discussed within the chapter. India has undertaken several policies in order to increase financial market participation among the population. Some of these financial inclusion policies are presented as well. The study is rather descriptive in its nature and aims to prepare the reader for the following research questions and empirical analyses of this thesis.

Chapter 3. Financial Literacy

In the second study, we empirically investigate the role of social interaction on the individuals' awareness of financial instruments and actual investment behavior of households in India. In doing so, we employ probit regressions on the probability of being aware of shares, bonds, mutual funds, chit funds, and group savings, and we estimate the probability of making an investment conditional on being aware of the corresponding instrument. Moreover, we compute pairwise and triple interactions in order to show moderations between caste affiliation and social interaction. We compute the marginal effects of the interaction terms by using the delta method proposed by Ai and Norton (2003) and Corneliessen and Sonderhof (2010).

This study contributes to the literature on financial literacy and social interaction. While the role of social interaction for financial market participation has been investigated in developed economies (Hong et al., 2004; Brown et al., 2008), this relationship has remained yet unconsidered for developing countries. Whereas most empirical studies investigate the financial literacy of the population of developed countries (Lusardi and Mitchel, 2007, 2008; Lusardi and Tufano, 2009) we analyze financial literacy and investment behavior in an emerging economy. We are further able to disentangle the factors influencing financial literacy from the factors influencing actual investment behavior and analyze the relevance of word-of-mouth communication for the diffusion of financial knowledge. Furthermore, this paper contributes to the literature by investigating the impact of regional knowledge diffusion on individual financial knowledge. Finally, this paper not only considers financial instruments that are common in developed countries, like stocks and bonds, but also takes into account Indian-specific financial instruments, i.e. chit funds and group savings. These financial instruments, which are primarily targeted to lower-income households and supported by the government and NGOs, play an important role in India.

Chapter 4. Trust in Financial Institutions

In the third study, we analyze whether access to a financial institution affects the individual level of trust in the corresponding financial institution. In doing so we distinguish between national banks, cooperative banks, cooperative societies, and group savings. Studies on financial market development show that trust plays an important role in the context of financial markets (Dearmon and Grier, 2009; Guiso et al., 2008; Zak and Knack, 2001) and that trusting individuals are more likely to participate in the financial market than non-trusting individuals (Guiso et al., 2008). Existing empirical studies often employ a general measure of trust which is often not directly related to an investment. One explanation might be the lack of adequate trust measures.

This study contributes to the literature by using a unique trust measure which led us to investigate trust in different types of financial institutions in India. In a developing country like India, individuals might often not be aware of certain financial institutions. Therefore, we consider that a substantial number of observations is excluded from the empirical analyses and take this possible issue of endogeneity into account by using a Heckman-Selection Model.

We further argue that access is a relevant determinant in order to establish trust. In doing so, we link two related but unconnected strands of literature: the literature dealing with trust and financial market participation (Guiso et al., 2008) and the literature examining the relevance of geographic proximity for establishing trust (Huberman, 2001; Ivkovic and Weisbenner, 2005). Due to our unique dataset we are not only able to employ a very precise trust measure but also possess information about an individuals' possibility of access to a financial institution which is self-reported.

Chapter 5. Customer Retail Banking

In the fourth study, we investigate the differences in consumer trust in foreign banks and Indian domestic banks and their interrelation with different determinants e.g. the education level of the respondent or the number of bank branches per Indian state. As India has a large and growing population its retail banking sector is becoming very important for domestic private banks as well as for foreign banks. Nevertheless, individuals in developing countries might behave reluctantly to foreign or domestic financial institutions.

A lack of trust in the corresponding financial institution might be one reason why some individuals do not invest their money at a certain type of bank. This study contributes to the current "liability of foreignness" literature. The current literature either focuses on problems of foreign firms to raise capital in foreign

capital markets as the latter often suffers from investors' "home bias" (Bell et al., 2012) or they focus on the lower efficiency of foreign banks relative to domestic banks (Denk et al., 2012). Little is known about the role of consumer trust between foreign and domestic private banks. Although the literature dealing with "liability of foreignness" in capital markets has identified lack of trust as a driver of relational hazards (Denk et al., 2012), it does not deal with consumer trust in the retail banking sector. We investigate the consumer trust differences among foreign and private banks in India using a multinomial logit model.

We argue that a lower level of consumer trust for foreign banks is related to a low number of foreign bank branches per state, resulting from restrictive licensing regulations for foreign banks in India. We moreover argue that a difference in customer trust between foreign and domestic private banks might also be related to the education level of the respondent.

2. India's Financial Market and the Demand for Financial Services

This chapter gives an overview of the Indian financial market. It provides a brief summary of India's capital account liberalization process, describes the current banking structure in India, and gives insights into the topic of household demand for financial services. In doing so, this chapter shows outcomes of financial inclusion policies undertaken by the Indian government in the past years and reveals problems that might be of importance for public policies and researchers today and in the future.

2.1. Introduction

The Indian financial market, as well as financial markets in other developing economies, experienced radical changes in the past few decades. India's financial market has changed over time from a highly regulated and financially repressed banking sector to a more liberal, internationally integrated, and dynamic market. Growth rates in India grew from time of financial market liberalization and attracted interest of researchers investigating the relationship between capital account liberalization and economic growth.

There is a wide array of literature suggesting a positive relationship between financial market development and economic growth, (King and Levine, 1993; Levine and Zervos, 1998; Rajan and Zingales, 1998) as well as bank branch expansion and poverty reduction (Burgess and Pande, 2005; Beck et al., 2007). Studies show that after the capital account liberalization in 1991, bank efficiency of most financial institutions in India improved (Bhattacharyya et al., 1997), and that particularly medium-sized public sector banks as well as foreign banks performed very well (Das and Ghosh, 2006). Since the capital account liberalization, the number of bank branches in India has overall increased remarkably well. Nevertheless, bank branch dispersion varies among Indian states. In 2012 the total number of bank branches in India was 243,938 while the total number of ATM's was with 285,644 just slightly more.[1]

Figure 2.1 shows the GDP per capita as well as the total number of bank branches per Indian state, in the years 2005 and 2012. As can be seen from the figure, GDP per capita increased in almost all regions between 2005 and 2012. With respect to bank penetration the picture is similar. The number of bank branches in India increased almost in all states during that period. Nevertheless, not all Indian states with a relatively high GDP per capita also show a higher density of bank branches in 2012 compared to the year 2005.[2]

For instance, in the north-eastern states Uttar Pradesh, Bihar and Nepal, GDP per capita is still very low. Whereas other states like Maharashtra with its capital of Bombay, Karnataka with its capital of Bangalore as well as other southern states show a relatively high GDP per capita as well as a high number of bank offices.

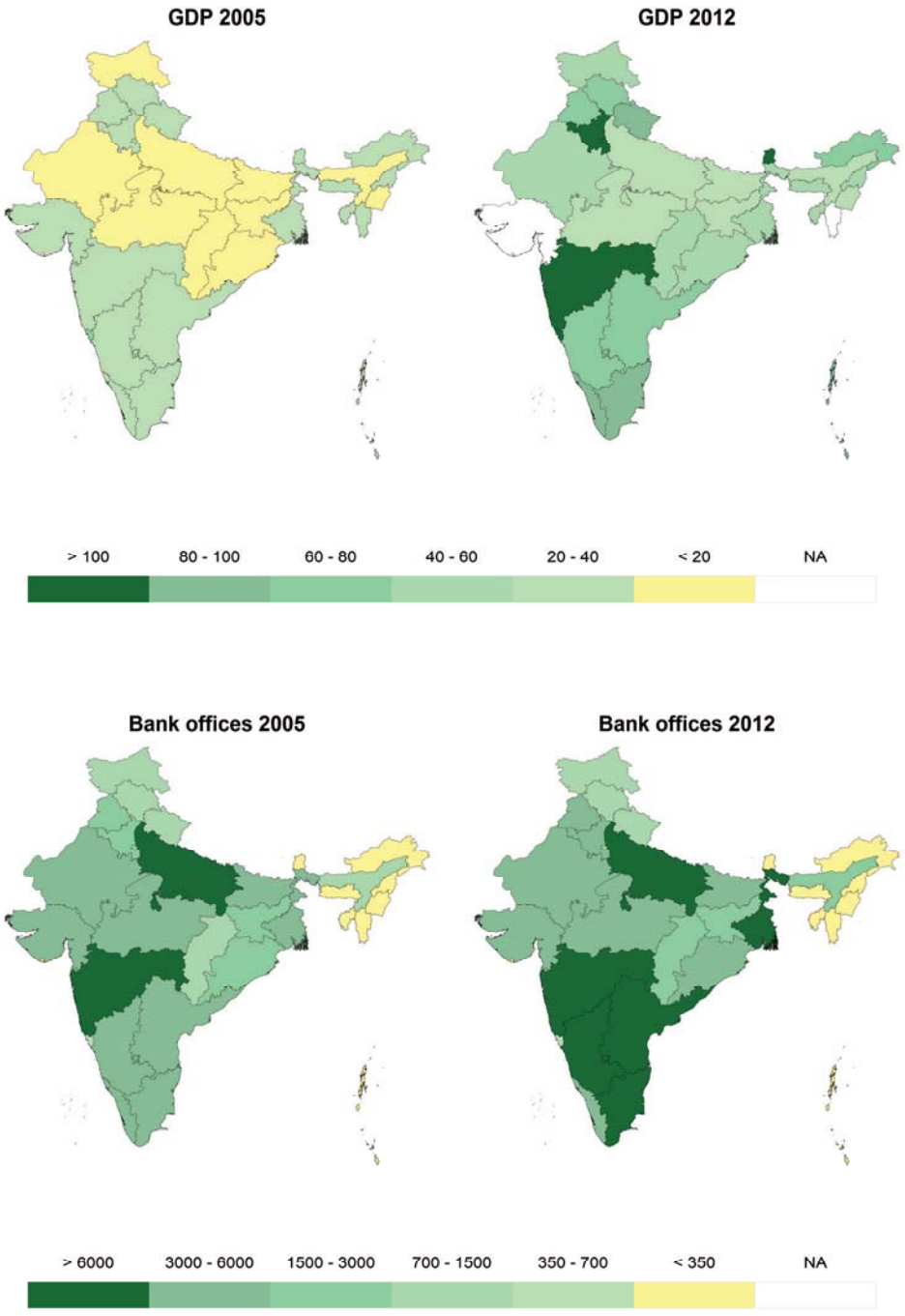
India is characterized by a large population consisting of 1.2 billion people in the year 2012, which is expected to increase in the next decades. Individuals are important consumers of financial services and may affect the behavior of banks

[1] The number comprises of bank branches of scheduled commercial banks, public sector banks, nationalized banks, private sector banks and foreign banks. The information is obtained from the Reserve Bank of India. http://www.rbi.org.in/scripts/PublicationsView.aspx?id=14637

[2] http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/00STB071112FLS.pdf

Figure 2.1.: Statewise GDP and Bank Dispersion

Figure 2.1 shows the GDP per capita per Indian state and the number of bank branches in the years 2005 and 2012. The data is obtained from the Reserve Bank of India, Handbook of Statistics 2005 and 2012.



and their services provided to certain extent. Although the Indian government has released many financial inclusion policies, household demand for financial services is still very low in India, and knowledge about reasons for non-participation is insufficient. Studies that investigate possible reasons why individuals in India do not participate in the financial market show that the use of informal sources is still common, and that most individuals do not have sufficient money to invest (Basu, 2006; Demirgüc-Kunt and Klapper, 2012). Moreover, physical access to a formal financial institution is still an obstacle (Beck et al., 2007). India is a very heterogeneous country and regional differences have to be taken in to account as well. Some Indian states, for instance show a very high fraction of individuals who are affiliated to scheduled castes and scheduled tribes, which are also known as backward castes in India. Chhatishgarh and Andhra Pradesh for instance, are characterized by a large fraction of backward caste individuals which have according to the traditional caste custom, the lowest status in Indian society. Although the Indian government undertakes affirmative action programs in order to abolish caste discrimination, individuals belonging to scheduled castes and scheduled tribes might still be economically disadvantaged, and may be excluded from formal financial activities.

These differences, as well as other socio-cultural factors need to be considered as well when investigating different aspects of the Indian financial market system. India's financial market has overcome many difficulties and some studies argue that India passed the Asian financial crisis as well as the financial crisis in 2008 relatively well because of the strict guidelines imposed by the RBI after financial market liberalization (Stiglitz, 2000).

2.2. India's Financial Market: 1950 - Present

India and other developing countries experienced financial market liberalization in the 1990s. The deregulation process of India's financial market took place in a very controlled manner guided by the RBI, and many regulations and reforms are still ongoing and form the structure of India's financial market today. This section gives a brief overview of India's capital account regulation and its liberalization process and provides insights into India's financial market today.

Times of Regulation

In the 1950s the Indian financial sector was characterized by a liberal banking environment. In this period the Indian industry and in particular large companies, benefited from a huge wave of bank credits. Banking activities were mainly credit

focused and the Indian financial market consisted of few large private commercial banks. At the same time some sectors remained mostly unconsidered by public and private financing, like some small scale industries or the agricultural sector. This as well as further socialistic political interests at that time gave reasons to policy makers to start a phase of bank nationalization (Gangopadhyay and Shanti, 2012; Mohan, 2009).

The first changes started in 1959 when the State Bank of India Act was passed. Under this act the Imperial Bank of India, which was the oldest and biggest private commercial bank at that time, was transformed to the State Bank of India (SBI). A large number of other commercial banks were nationalized between the period 1970 and 1980. During the nationalization process, public sector banks accounted for 85 percent of total deposits of the Indian banking system. Foreign banks only held 9 percent, and Indian private banks merely 6 percent of the total shares (Bhattacharyya et al., 1997). Foreign, as well as private domestic banks, were allowed to coexist but under high restricted activities and strict licensing.

Moreover, the Indian government launched a social banking program where banks were directed to open branches in the so called "priority sectors" comprising of agriculture, small scale industry, own account workers, and others. Under this strictly enforced branch licensing policy of the RBI, each bank opened in a city, where bank branches already existed and had to open four additional branches in eligible areas with no bank branches. Therefore, between 1977 and 1990 rural branch expansion was relatively higher in financially less developed states (Burgess and Pande, 2005). However, banks that were directed to open branches in these sectors had to follow fixed lending rates. These rates were far lower than those offered for a private commercial credit in an urban area. This on the other hand, reduced the savings available for private-sector borrowing remarkably because every bank was only allowed to possess a credit-deposition ratio of 60 percent within its main area of operation (Burgess and Pande, 2005). Nevertheless, primarily due to the branch licensing policy which was active until 1990, financial deepening in the Indian economy was remarkably high in the 1970s and 1980s compared to other developing countries (Gangopadhyay and Shanti, 2012). However, the primary purpose of the financial sector prior to liberalization was to support the system of socialism and public policy, which ended in a financial repression in the 1990s.

Financial Market Reforms

In 1990, the Indian banking structure was characterized by a lack of operational transparency and missing incentives to develop innovative products. The central government had growing budget deficits and difficulties in repaying foreign

obligations. The deregulation process of the financial sector in India started under the IMF structural adjustment program in 1991. The aim was to make the Indian financial market more efficient and profitable, and establish a sound banking system (Sarkar, 2006; Gupta et al., 2011). These structural reforms should lead to more competition in the domestic market. Along with these reforms, the phased entry of foreign banks as well as the establishment and spread of private financial institutions was facilitated. At the beginning, 12 foreign bank branches were allowed to open in a year, and foreign banks could set up subsidiaries or operate through additional branches. Foreign banks were further allowed to enter in merger-and-acquisition transactions with any private-sector bank in India with an overall foreign investment limit of 74 percent. Hence, national banks had to operate in a more competitive environment.[3]

Along with the reforms, India's equity market also experienced changes. In 1992 the Securities Exchange Board of India (SEBI) was established as a regulator of the Indian capital market. The SEBI passes regulations, conducts investigations and releases entry rules for market participants. Moreover, capital adequacy and prudential norms have been introduced for brokers and other capital-market intermediaries and the regulatory framework has been reconditioned (Gangopadhyay and Shanti, 2012; Singh and Weisse, 1998). With the Bombay Stock Exchange and the establishment of the National Stock Exchange (NSE) in 1994 exchange in capital market competition as well as the number of transactions increased remarkably. In order to improve the development process of India's financial market, several prudential norms consistent with international best practices were implemented. For instance, India decided to adopt Basel I and Basel II guidelines.

Although, India's financial market has changed over time from a highly regulated and financially repressed banking sector to a more liberal, internationally integrated, and very dynamic market, the Reserve Bank of India (RBI) still strongly regulates many areas of the financial market today. Foreign bank entry and the spread of foreign bank branches, for instance, are still difficult, and only possible under strict licensing rules. Today India's financial market, with its actors and financial products, is very dynamic however, its banking structure is still rigid and controlled by the RBI.

India's Banking Structure Today

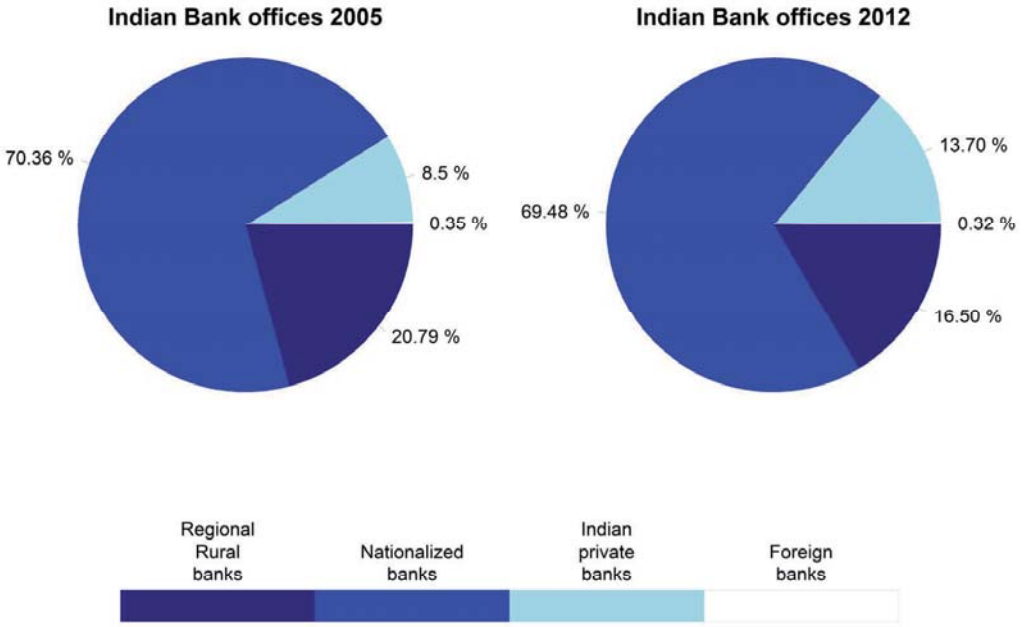
Today India's financial market is characterized by different ownership groups in banking, financing and insuring. There are public and private banks, and among

[3]National banks were allowed to raise equity capital as long as the nongovernmental share was less than 49 percent.

the private banks there are domestic as well as foreign financial institutions. The number of national banks is still dominating, although the share of private domestic banks increased between 2005 and 2012. Figure 2.2 shows that in 2005, the share of national banks in India was 70 percent and had the highest share. Approximately 21 percent of regional rural banks were participating in the market, and only 8.5 percent of private banks. The lowest share is seen in the foreign banks with only 0.35 percent in the year 2005 and even 0.32 percent in 2012. The percentage share of domestic private banks increased between 2005 and 2012 by 5.2 percent, while the share of rural banks decreased by 4.3 percent.

Figure 2.2.: Bank Branch Dispersion per Bank type

Figure 2.2 shows the percentages shares of bank offices per National banks, Indian private banks, regional rural banks and foreign banks in the years 2005 and 2012.



Foreign banks are still not very wide spread in India and their access is strongly regulated. Most foreign banks in India are engaged in B2B relationships, and often located close to firms from the same home country in order to work as intermediaries of financial transactions. Most financial institutions in India today offer a variety of financial services which are partly Indian specific such as chit funds, group savings, or kisan cards. A chit fund is a savings scheme where each member of a chit fund group subscribes to give a certain amount of money. The total amount of money is either auctioned or invested in a certain project. The

outcome at the end of the period is then divided by each member's share of the money invested. Group savings, which are also often called self-help-groups, consist of a group micro-entrepreneurs' who save regularly small sums of money. The money is then used for either a business foundation of a group member or is used to meet emergency needs. A kisan card on the other hand, is a type of credit card provided by the Indian government in order to provide facilitated access to credit for farmers living in rural areas. However, financial institutions in India do also offer various investment options for the growing middle class in India. People in India today can invest in mutual funds, shares, and other equities traded at the Indian Stock Exchanges. India has a dynamic equity market with rising growth rates of insider holdings and institutional investors. The Bombay Stock Exchange where approximately 3500 shares are listed and the National Stock Exchange in Mumbai are one of the biggest stock exchange in Asia (Gangopadhyay and Shanti, 2012).

Table 2.1 shows different national banks listed at the Bombay Stock Exchange and their ownership structure. Although national banks are allowed to raise funds through issue of equity in the market the Indian central government is still the largest shareholder of Indian commercial banks. The share of public shareholding which comprises of several individual shareholders or foreign institutional investors is very low. On the other hand, the share of public shareholders of listed private as well as foreign banks is much larger and exceeds almost 50 percent for all banks considered in table 2.1.

Table 2.1.: Ownership Structure of Commercial Banks in India

Bankname	Shareholder: Central Government	Public Shareholding
Nationalized Banks		
State Bank of India	64.05	35.95
Vijaya Bank	55.02	44.98
Corporation Bank	78.92	21.08
Union Bank India	57.89	42.11
Indian Overseas	73.80	26.20
Andhra Bank	58.00	42.00
Oriental Bank of Commerce	58.00	42.00
Bank of Baroda	55.41	44.59
State Bank of India	64.05	35.95
Dena Bank	55.24	44.76
Allahabad Bank	55.24	44.76
Canara Bank	67.72	32.28
Syndicate Bank	66.17	33.83
UCO Bank	69.26	30.74
Bank of Maharashtra	81.24	18.76
Punjab National Bank	57.87	42.13
Central Bank India	85.31	14.69
United Bank of India	82.23	17.77
Punjab and Sind Bank	79.86	20.14
	Shareholder: Promoter Group	**Public Shareholding**
Private and Foreign Banks		
HDFC Bank Ltd.	27.41	72.59
ICICI Bank Ltd.	12.16	87.84
AXIS Bank Ltd.	36.91	63.09
Yes Bank Ltd.	25.64	74.36
ING Vysya Bank	41.92	58.08
Karnataka Bank	29.82	70.18
Development Credit Bank	18.47	81.53
Dhanlaxmi Bank	26.97	73.03

Table 2.1 reports the ownership structure of Indian national banks, domestic private and foreign banks of those banks who are listed at the Bombay Stock Exchange in the last quarter of 2012. The table shows the share of national central government ownership of some selected national banks and the share of public shareholders. Similarly is reported for selected domestic private and foreign banks. Some information were not available, and therefore the table does not list all national, domestic private and foreign banks. Data is obtained from the Bloomberg database for the year 2012.

All in all, the development process of India's financial market is still ongoing.

Not only are financial institutions and regulatory authorities, like the Reserve Bank of India or the Securities Exchange Board, important actors, but consumers of financial services and investors are relevant as well.[4] However, the Indian investors are conservative in their nature. Although investment opportunities increased remarkably, Indians favor government bonds, fixed deposits or savings accounts, which are almost the same options as at the times of pre-liberalization.

2.3. Indian Consumers and the Demand for Financial Services

Although India has one of the highest savings rates in Asia, financial market participation among households is very low. There might be a variety of reasons why Indian consumers of financial services behave reluctantly with formal financial services. Some possible explanations from the current literature as well as insights obtained from household surveys in India are provided in the following.

Savings and Investments

Many Indians save but the way they save and whether they invest the amount saved is somehow obscured (Demirgüc-Kunt and Klapper, 2012). Moreover, India is a country with a population of 1.2 billion people, and is among the most populated economies worldwide. Financial market participation in form of savings and investments might have a strong impact on the development of financial products and financial services. Table 2.2 shows the development of household sector savings and savings of the private and public sector. Gross domestic savings in India increased over the past decades and even quadrupled between 2001 and 2010. The share of private and public sector savings increased at a lower rate than the savings of the household sector. However, the amount saved in physical savings of Indian households almost exceeded the amount of financial savings every year between 2001 and 2010.

This shows that although a large investment potential is prevalent among the Indian population most of the savings are in form of physical capital. Hence, Indians might still behave reluctantly with new financial services and investment options provided by banks and other financial institutions and might favor tradi-

[4]The Reserve bank of India (RBI) regulates the banking sector, the Securities Exchange board of India (SEBI) regulates financial markets and the regulatory and development authority (IRDA) governs the insurance sector. In this thesis we will not focus on the insurance sector further.

Table 2.2.: Savings by Household, Private and Public Sector over Time

	Household Sector			Private and Public Sector		
	Financial Savings	Physical Savings	Total	Private Sector	Public Sector	GDS
1960	4,56	6,80	11,36	2,81	5,35	19,52
1970	13,71	30,00	43,71	6,72	15,28	65,71
1980	86,10	101,14	187,24	23,39	58,18	268,81
1990	496,40	551,49	1047,89	151,64	100,57	1300,10
1995	1057,19	952,96	2010,15	591,53	308,34	2910,02
1998	1467,77	1235,31	2703,08	657,69	274,29	3635,06
2001	2474,76	2566,89	5041,65	769,06	-461,86	5348,85
2004	3175,46	3993,28	7168,74	2120,48	689,51	9978,73
2005	4383,31	4306,57	8689,88	2772,08	889,55	12351,51
2006	4842,56	5101,40	9943,96	3385,84	1529,29	14859,09
2007	5532,89	5968,46	11501,35	4169,36	2125,43	17796,14
2008	5710,26	7598,46	13308,73	4174,67	542,80	18026,20
2009	8355,58	8034,81	16390,38	5321,36	117,96	21829,70
2010	7676,91	9816,20	17493,11	6024,64	1301,55	24819,31

Table 2.2 shows Indian household savings as well as private corporate savings and public sector savings over time in Billion Rupees (RS). Gross Domestic Savings (GDS) includes household savings in total plus private corporate and public savings. The data is obtained from http://www.indiastat.com/searchresult.aspx.

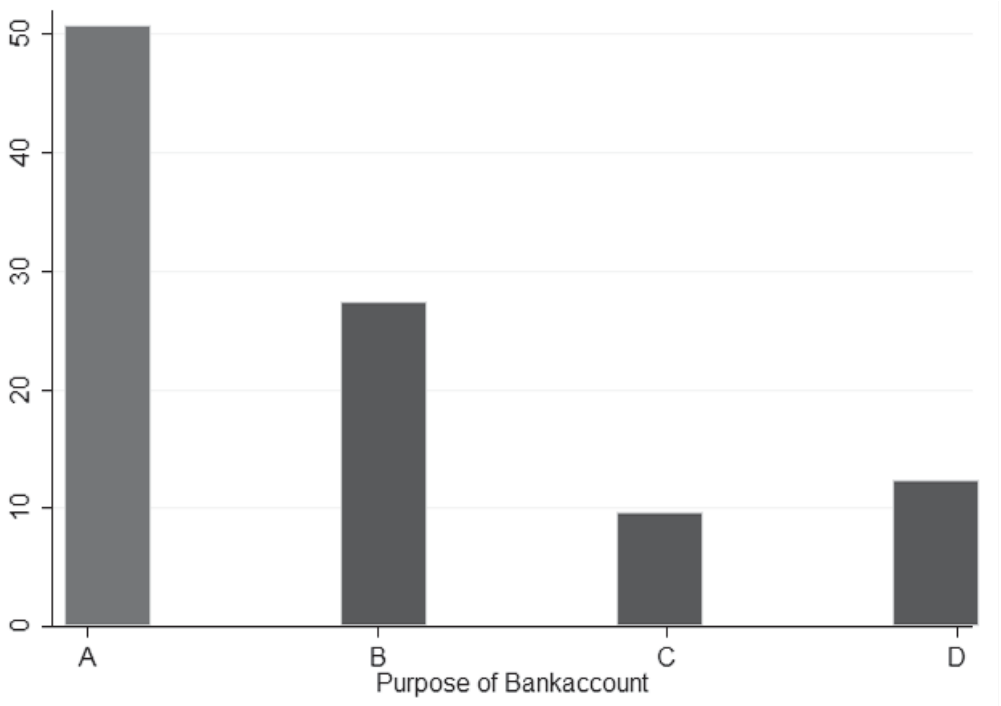
tional forms of saving and investing. Moreover, savings in form of physical capital are often not that flexible to move into other forms of investments. The Indian government reports, that in the year 2011 about 58 percent of adult Indians avail banking services. This in turn does not imply that all of these individuals also possess a bank account at a formal financial institution. Hence, it is a relevant question of how to convert physical savings into financial investments.

Demirgüc-Kunt and Klapper (2012) investigate financial inclusion in developing countries and show that in India the percentage share of individuals who have an account at a formal financial institution is on average 35 percent. The reasons why individuals decide for formal financial products are often hard to capture and motivations for savings and investments vary among individuals. For instance, most of the individuals who possess a savings account use it to receive work payments (Demirgüc-Kunt and Klapper, 2012). In India, a large fraction of the population is employed in the public sector, where salaries are often directly transferred to a bank account. Figure 2.3 shows that 51 percent of the respondents who were interviewed in India for the purpose of the "Global Financial Inclusion Survey" of

the World Bank in 2011, state that they use their bank account to receive work payments.[5] 27 percent stated that they used their account to receive money or payments from the government, 9 percent say that they received money from family members living elsewhere and 13 percent used their account to send money to family members living elsewhere.

Figure 2.3.: Individual Purpose of a Bank Account

Figure 2.3 shows the purpose of using a bank account. The survey question is the following: *Have you used your account to* ***(A)*** *Receive money or payments for work or selling goods,* ***(B)*** *Receive money or payments from the government,* ***(C)*** *Receive money from family members living elsewhere,* ***(D)*** *Send money to family members living elsewhere.* The sample consist of 1.307 individuals, who possess a bank account and the Y-axis shows the percentaged values and the X-axis the given responses among which the respondent could choose. The data is obtained from the Findex Database of the World Bank which was conducted in several states in India in 2011. For more detailed information see: Demirguc-Kunt, Asli and Leora Klapper, 2012. "Measuring Financial Inclusion: The Global Findex Database." World Bank Policy Research Working Paper 6025.



[5]The Global Financial Inclusion (Global Findex) Database is covering 150,000 people in 148 countries. The surveys were made during 2011. In India 3,518 individuals in different states were interviewed. For more information see Demirgüc-Kunt and Klapper (2012).

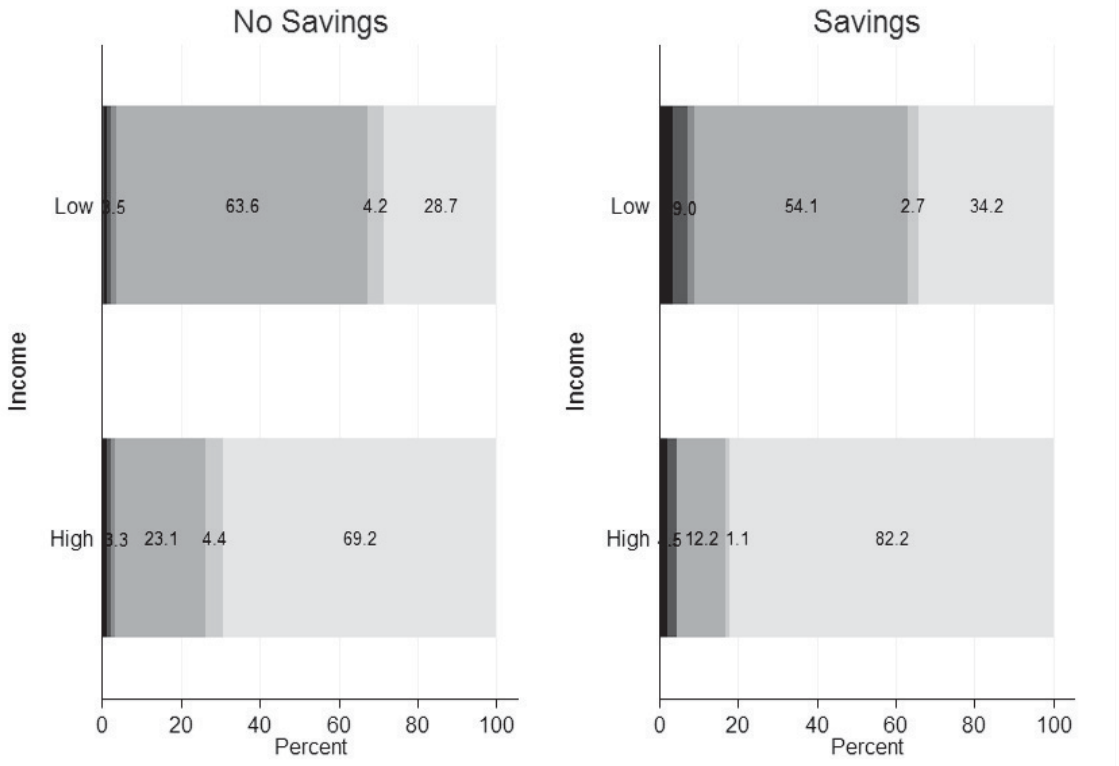
The Indian sample of the Findex Data consists, of 1,307 individuals who have an account at a formal financial institution and 2,211 individuals who do not possess a bank account. It might therefore be important to know about the reasons why individuals do not have a bank account. The Findex Data provides this information to some extent. Since the possession of a bank account might be related to the respondent's income, the respondents are grouped into those with high income and respondents with low income as well as into individuals who possess savings and those who do not.

One might argue, however, that only if a respondent has sufficient money to invest, would he be interested in knowing of whether a financial institution is located nearby, or whether it is trustworthy or not. Hence, it may be that these issues are becoming more relevant, on the conditional fact that an individual has money to invest. Among individuals with a high income and no savings 69.2 percent say that they do not have an account because a family member already has an account. Whereas among the individuals with low incomes and no savings, only 28.7 percent say that a family member has an account. The difference is similar for those individuals who possess savings but not a bank account. The figure further shows that individuals with low incomes answered that they do not have a bank account because they do not have enough money to use them, even if they possess savings. Only a small fraction gives other reasons e.g. a lack of trust, lack of documentation or that financial institutions are too far away.

Since 2005 the Reserve Bank of India promotes no frills account to individuals with low and irregular incomes. People can maintain these accounts free of charge, at zero balance, along with an ATM-card. The intention is to provide basic banking facilities to poor and promote financial inclusion. Individuals, who have a bank account, might be able to better cope with a financial emergency. They might use their own resources, or they may have easier access to credit and therefore might be better able to insure themselves against financial risks. However, the usage of no-frills accounts is increasing very slowly.

Figure 2.4.: No Bank Account: What are the Reasons?

Figure 2.4 shows respondents who state their reasons for not having an account. Thereby individuals with high income and low income levels are distinguished. The **high income** group consist of individuals who are grouped into the highest three income quintiles and those who belong to the lowest two income quintiles are grouped into **low income**. The survey question was the following: *Please tell me whether each of the following is a reason why you, personally, DO NOT have an account at a bank, credit union or other financial institution.* The respondent could choose between the following answers: **A.** They are too far away, **B.** They are too expensive, **C.** You dont have the necessary documentation (ID, wage slip), **D.** You dont trust them, **E.** You dont have enough money to use them, **F.** Because of religious reasons, **G.** A family member has already a bank account. The figure shows the corresponding colors to A - G. The gray colors are arranged stepwise from (A) to (G), where the darkest gray refers to (A) and the lightest to (G). The figure shows moreover, those individuals who have saved or set aside money in the past twelve months. The sample consists of 2.211 individuals. 1.905 individuals have not saved or set aside money in the past twelve months and 306 respondents state that they did. The data is obtained from the Findex Database of the World Bank which was conducted in different Indian states in 2011. For more detailed information see: Demirguc-Kunt, Asli and Leora Klapper, 2012. "Measuring Financial Inclusion: The Global Findex Database." World Bank Policy Research Working Paper 6025.



Credit

Although banks are better accessible today, they still might not be willing to offer a credit because of information asymmetries or a lack of collateral. The standard model of information asymmetries explains why a bank does not serve all customers with a loan or use varying interest rates. When a bank cannot adequately distinguish a safe borrower from a riskier borrower, the bank will charge all borrowers the same interest rates, which might be too high for a safe borrower and lead to the common problem of adverse selection. Moreover, small investments of private household are not very profitable for the bank and are often linked to a minimum deposit or an account maintenance fee that poor customers cannot afford. Hence, obtaining a credit might be very difficult for low-income individuals.

The Indian government, however, focused on the spread of credit in rural areas and launched many projects to motivate formal finance among individuals (e.g. the introduction of no frills accounts). In particular micro-finance became very popular over the last years. Micro-finance can be considered as a way to overcome inefficiencies resulting from information asymmetries and thereby serve as a banking mechanism for people with low incomes. Today more than 500 banks in India are involved in micro finance activities and work with micro finance institutions or Non Governmental Organization (NGO's). The number of self-help groups (SHGs) provided with bank loans grew from 416,478 to 2,924,973 and the average loan size doubled in the same period from RS 22,215 to RS 78,682 (Gangopadhyay and Shanti, 2012, p.153). In India, micro finance is mostly provided by Non Banking Financial Companies (NBFC's). Whereas the role of NGO's in India has become more and more important in the past years, NBFC's face strict regulations since 2011 after critical incidents that happened to micro finance borrowers in 2009 in Andhra Pradesh.

Financial Inclusion Policies

The first financial inclusion policies in India, already took place between 1970 and 1990 under the bank branch licensing rule (see section 2.2). Although the number of bank branches and bank penetration in rural areas has increased since time of financial market liberalization, the demand for financial services still remains very low (Gangopadhyay and Shanti, 2012, p.754). Therefore, India's Reserve Bank restarted financial inclusion policies in 2005. The Indian government has launched different initiatives to enhance financial market participation among Indians, and to improve financial inclusion. The RBI introduced new ways of reaching individuals in rural and less banked areas and in order to improve access to finance innovative mechanisms like mobile banking, were launched. Moreover, more bank-

ing services for low-income households are free of charge and do not demand a minimum deposit. Banks were also encouraged to provide general credit cards to low-income customers and to allow for small overdrafts. Nevertheless, the use of informal financial services is still very common and Indians might favor informal over formal investments and loans (Demirgüc-Kunt and Klapper, 2012). In order to increase the awareness of Indians, to inform people about the benefits of formal financial services and to motivate their financial market participation, the Indian government established credit counseling centers in many Indian states. Moreover, the Reserve Bank of India organized financial literacy campaigns in urban as well as in rural areas. The Indian government has launched a "National Strategy for Financial Education" (NSFE) where financial literacy may become part of a school curriculum. This pilot project as well as other school campaigns e.g. quiz competition on banking and financial matters among school children should help to change attitudes of financial behavior, inform investors and make consumers of financial services understand their rights.

2.4. Conclusion

India has made remarkable progresses in the past decades in terms of financial market liberalization, stabilization of its macro economic framework and brought up smart and innovative concepts in the context of financial inclusion. Banking sector reforms in India were pro incumbent in the 1980s and pro competition in the 1990s and allowed for private and foreign bank entry and thereby increased competition in the second period. First financial inclusion projects started in the 1980s, which seem to be still of great importance today, because after capital account liberalization most bank branches were opened in urban areas. The decentralization further led to an increased transparency, financial stability, and competition due to private and foreign bank entry. Nevertheless, the process of financial market development is still proceeding in India. Although, India offers a high investment potential due to its large population and a high savings rate among them, investors tend to be conservative in their investment decision with a clear preference for physical savings. Informal investments still serve as substitutes for formal investments unless they are often associated with higher costs but often more easily accessible. It is hence a big challenge for policy makers to make people in India literate about financial services and their rights as consumers of financial services.

India, however, is a very diverse country and the issues of financial market development can vary across regions. Social structure in India might be very relevant when investigating financial market participation of individuals. A large

and well educated young India is growing but caste customs and endogamy norms are still prevalent in India. Although the Indian government is trying to improve the lives of individuals belonging to scheduled castes (sc) and scheduled tribes (st), social structures are still very rigid and often hard to change from outside. This, and the above discussed, make India a good case to study financial market participation in the behavioral finance context, and to investigate different issues of financial market participation of individuals in India.

3. Financial Literacy Information Flows and Caste Affiliation

This chapter empirically investigates the relevance of social interaction and caste affiliation for individual awareness of financial instruments and investment behavior of households in India. The results of our empirical analysis, which is based on a large scale survey on saving patterns of Indians, suggest a positive relationship between financial literacy and social interaction. However, especially backward caste people living in regions with a large fraction of backward castes have a lower probability of being aware of various financial instruments. In contrast, we find only weak empirical evidence for a direct effect of caste affiliation and social interaction on investment behavior.

3.1. Introduction

Emerging economies are characterized by a limited participation of private households in financial markets (Honohan, 2008). On the one hand this might be explained by the relatively large fixed transaction costs associated with financial market participation (Cole et al., 2011). Poor individuals with especially low savings may refuse to demand them because costs of financial products exceed their returns. On the other hand, limited financial literacy among the general population may inhibit demand. As pointed out by Lusardi (2008, p. 30), "savings decisions are not only derived from maximizing utility under a lifetime budget constraint but also under the limitations imposed by financial literacy, lack of information, and crude sources of financial advice".

In developing economies financial illiteracy is a relevant problem because a majority of households possess limited financial literacy (Lusardi et al., 2011). Consequently, many people in developing economies may not invest in financial products because they are not aware of them. This may hamper the development of financial markets, since households are important consumers of financial products and their investments influence the scale and asset mix of finance (Honohan, 2008).

Hence, it is a relevant question how policy may increase financial literacy among the general population in developing countries to increase financial market participation. Empirical evidence suggests that financial market development fosters economic growth and countries with deeper financial systems tend to be characterized by less absolute poverty and inequality (Beck et al., 2007; Levine and Zervos, 1998; King and Levine, 1993). Better knowledge about the determinants of financial literacy and investment behavior of households in emerging economies is therefore of crucial importance for a sound development policy.

This paper empirically investigates the determinants of individual awareness of financial instruments and investment behavior of households in India. In doing so, this paper ties together related but largely unconnected strands of literature: the literature addressing the role of social interaction for financial market participation (Hong et al., 2004), social network theory (Burt, 1980; Granovetter, 2005; McPherson et al., 2001), and the literature examining the influence of Indian caste system on individual behavior (Hoff and Pandey, 2006; Munshi and Rosenzweig, 2006; Deshpande, 2000a). Theoretical and empirical results suggest that individuals learn about financial instruments through social interaction via word-of-mouth communication or from observable learning (Brown et al., 2008; Hong et al., 2004; Osili and Paulson, 2008). However, social network theory suggests that social interaction is more likely to take place within social groups than between social groups because individuals tend to interact with individuals who are socially close.

We argue that the Indian caste system is especially suited for the analysis of the effects of social networks because social interaction between backward castes and people belonging to other castes is less likely than social interaction within castes. A low level of financial literacy of backward castes people might be self-sustaining because of strong intra-caste externalities if individuals belonging to backward castes are less aware of financial instruments than other individuals. Moreover, we argue that the effects of word-of-mouth communication are local in scope because information tends to be exchanged between geographically close individuals. Hence, the strong presence of backward castes in a region may affect individual financial knowledge of backward caste people in that region.

Our paper makes several relevant contributions to the literature. In contrast to existing studies analyzing the role of social interaction for financial market participation (Brown et al., 2008; Hong et al., 2004), we separately analyze the determinants of individual awareness of financial instruments and the determinants of actual investments in these instruments. This allows us to disentangle the factors influencing financial literacy from the factors influencing actual investment behavior and to analyze the relevance of word-of-mouth communication for the diffusion of financial knowledge. Moreover, we analyze financial literacy and investment behavior in an emerging economy, whereas most empirical studies investigate financial literacy of the population in developed countries (Lusardi and Mitchel, 2007, 2008; Lusardi and Tufano, 2009).[6] Furthermore, this paper contributes to the literature by investigating the influence of regional knowledge diffusion on individual financial knowledge. Finally, this paper does not only consider financial instruments that are common in developed countries, like stocks and bonds, but does also take into account Indian-specific financial instruments, i.e. chit funds and group savings. These financial instruments, which are primarily targeted to lower-income households and supported by the government and NGOs, play an important role in India. Hence, a better understanding of the determinants of individual awareness of these instruments and actual investment behavior of households may help to improve policies aimed at the development of financial markets in India and other emerging economies.

In order to test our hypotheses we make use of a National Data Survey on Saving Patterns of Indians (NDSSP) conducted at the request of the Ministry of Finance of India in 2004/2005. This dataset allows us to distinguish between an individual's awareness of various financial instruments and actual investments in those instruments. Furthermore, the dataset provides information about social interactions that are related to savings decisions, caste affiliation, household earnings and expenditures, level of education, and the usage of various sources of information.

[6] Only very few studies deal with the demand for financial services in emerging markets (Cole et al., 2011).

Our data shows that individuals belonging to backward castes tend to be less aware of financial instruments than other castes. This negative effect is confirmed by the results of econometric analyses, particularly if individuals belonging to backward castes live in regions with a large fraction of backward castes. Moreover, we find that social individuals who consult friends and other individuals before making savings decisions are more likely to know financial instruments. There is some empirical evidence that the positive effects of consultancy from friends is lower for backward castes. However, once individuals are aware of financial instruments, the effects of caste affiliation and consultancy on the probability of investing in these instruments are statistically insignificant or not very strong.

This paper proceeds as follows. The next section discusses relevant literature and derives hypotheses. Section 3 describes the data source and the measurement of variables. Descriptive statistics and the results of econometric analyses are presented in Section 4. Section 5 provides a discussion and Section 6 concludes.

3.2. Literature and Hypotheses Development

Individuals' financial knowledge and their decision to participate in financial markets may be influenced by social interaction with family members, friends, colleagues or bank consultants. This section starts with a discussion of the relevance of social interaction for stock market participation, explains the relevance of group effects for social interaction, and analyzes the relationship between social interaction and the diffusion of financial knowledge in the context of the Indian caste system. It concludes with hypotheses about the effects of caste affiliation on individual financial literacy and actual financial investments.

3.2.1. Social Interaction and Stock Market Participation

Studies dealing with the influence of social interaction on the demand for financial products are scarce. Hong et al. (2004) argue that social interaction might influence stock market participation in two ways: first, financial knowledge may diffuse by means of word-of-mouth communication or observable learning. Individuals may communicate with other individuals and learn about stocks, e.g. their returns, riskiness or how to execute trades. Second, investors may get pleasure from talking about their stock market investments. Individuals may participate in the market because they expect to get utility from future talks with their friends and neighbors if the latter are also investing in the stock market. Although both channels provide an explanation why social interaction might influence stock market participation, there is one important difference: in the case of word-of-mouth learning, social

interaction takes place *before* any investment, whereas in the case of getting utility from talking with peers, the interaction takes place *after* the decision to participate in the market is made.

To portray the effects of social interaction, Hong et al. (2004) develop a theoretical model which distinguishes between *social* and *non-social* investors. All individuals face fixed costs of stock market participation. However, while the fixed costs of *non-social* investors are not influenced by the behavior of other individuals, the fixed costs of *social* investors are lower when the participation rate among their peers is higher. This implies that, ceteris paribus, *social* investors find it more attractive to participate in the stock market than *non-socials* and that the probability of stock market participation of social investors will be high if the participation rate among their peers is high. Hence, social investors benefit from positive network externalities.

Using US data from the Health and Retirement study, Hong et al. (2004) find that individuals who know and visit their neighbors or attend church are more likely to participate in the stock market than other individuals, thus concluding that social households are more likely to participate in the stock market. Moreover, their results suggest that the effect of sociability is especially strong in states where stock market participation is higher and therefore conclude that their results point to the relevance of peer-effects (Hong et al., 2004). However, their results do not allow them to discriminate between community effects resulting from word-of-mouth communication and the effects of enjoyment of conversation that people get from talking about the market together. Hence, it remains unclear whether an investment is motivated by *expected* benefits of social interaction or by *past* learning about the existence of investment opportunities via word-of-mouth communication.

Brown et al. (2008) investigate whether the relationship reported by Hong et al. (2004) is a causal relation and whether community effects result from word-of-mouth communication. To do so, Brown et al. (2008) instrument for the average stock market participation of individuals' communities with lagged average stock market participation (ownership) of the states in which individuals' non-native neighbors were born. Using a large US panel dataset of tax returns covering the years 1987 to 1996, they find empirical evidence for causal community effects. Furthermore, they find that the link is stronger in communities where households are more likely to be asked for advice by neighbors. Hence, they conclude that their results are driven by word-of-mouth communication.

3.2.2. Group Identity and Social Interaction

Social network theory suggests that the extent of social interaction may be determined by the strength of the relationship between individuals. This theory distinguishes between weak and strong ties and it can be expected that social interaction and communication may be facilitated in strong ties relationships being the family or other peers (Granovetter, 2005; Coleman, 1988). In contrast to weak ties, strong ties between individuals are characterized by a high frequency of interaction, the time spent together, emotional intensity, intimacy, confidence, and reciprocal services. Hence, individuals usually have strong ties to family members, friends, relatives or neighbors (Granovetter, 2005; McPherson et al., 2001).

It is likely that strong ties exist between individuals who are socially and geographically close (Burt, 1980; McPherson et al., 2001; Feld, 1984; Marx and Spray, 1972). One might expect, for instance, that individuals are more likely to communicate with other individuals if the latter belong to the same ethnic group or have the same social background, since strong ties are more likely to be established among individuals with similar characteristics (McPherson et al., 2001). Consequently, it may not only be important whether an individual is a social or non-social person but the characteristics of an individual's peer group might be relevant, too. Furthermore, geographical proximity might be relevant for establishing strong ties relationships because it may increase the frequency of interactions and because it facilitates face-to-face interactions which may positively affect, for instance, emotional intensity and intimacy.

We argue that strong ties relationships are relevant for the diffusion of financial knowledge, since they facilitate the exchange of knowledge. Of course, one might argue that weak ties relationships are also relevant since they may provide access to financial knowledge which is not available within the own social group. Nevertheless, it can be expected that social interaction mainly takes places within strong ties relationships (Granovetter, 2005).

Hong et al. (2004) show theoretically that once positive externalities across members of a peer group are strong enough, a high or low stock market participation rate can be self-sustaining. If, for instance, none of a social individual's peers are participating in the stock market, the individual faces the same fixed costs as an otherwise identical non-social individual. This implies that an ethnic groups' stock market participation in the past may affect the current participation rate. According to Hong et al. (2004), relatively low stock market participation rates of wealthy and educated non-white and Hispanic households might be explained by a low stock market participation rate equilibrium (Hong et al., 2004). Moreover, Hong et al. (2004) find that the effect of their sociability indicator is stronger for white, educated and wealthy households than for other households. Hence,

their results may point to the relevance of group effects for social interaction and participation in stock markets.

One may even though wonder whether social interactions within ethnic groups and geographical proximity are very important for the diffusion of financial knowledge in developed economies. Most people make use of modern communication technologies, like the Internet, or the mobile phone which allow them to communicate with other people irrespective of ethnic background and geographical distance. Moreover, in developed economies, like the United States, people with different ethnic backgrounds work together every day and there are many cross-group marriages. In developing economies, however, separation between ethnic groups tends to be stronger and usage of modern communication technologies is less widespread. Consequently, social interaction with other people belonging to the same group and living in the same region may be more important for the diffusion of financial knowledge in developing economies than in developed economies.

3.2.3. Indian Caste System and Social Interaction

The Indian caste system is an excellent case for studying social interaction and group effects, since caste is given at birth and cannot be changed over lifetime. As it has persisted in Indian society for around 3,500 years it still remains prevailing in practice, although some aspects such as untouchability were abolished by the government. The so-called "Scheduled Castes" (SC's) and "Scheduled Tribes" (ST's), which are also known as backward castes, remain close in their social relations, marriage, and rituals. Hence, it is likely that people belonging to backward castes communicate with each other rather than with the people belonging to other castes (Carlsson et al., 2009). Although social separation between certain groups (e.g. migrants, blacks, whites, religious groups) is existent in the US or other developed countries, the separation between *backward castes* and other castes tends to be even stronger within Indian society. Moreover, (McPherson et al., 2001) point to the relevance of religious similarities between strong ties relationships.

Economic theory does also point to the relevance of the caste system. Akerlof (1976) shows theoretically that an equilibrium may exist where those who break caste custom suffer economically by being outcasted. Hence, the greatest return is allotted to those who do not break social custom and stay socially and geographically close (Akerlof, 1997).

Empirical studies indicate that social ties between people belonging to the same caste are much stronger than ties between people belonging to different castes. This might be the result of informal and social norms in Indian society. However, such inherited social characteristics like caste affiliation, involve some emotional

intensities that might strength their interactions. Beyond that, strong ties relations resulting from caste affiliation or social status are even tightened by cultural rules and rituals. For instance, marriage in India is one of the most important economic decisions which is still heavily influenced by caste affiliation. Banerjee et al. (2009) show that in India a strong preference for within-caste marriage still exists, often managed by parents and family. The results reported by Rosenzweig and Stark (1989) also suggest that status as well as family boundaries are still very important.

Furthermore, the results of empirical studies suggest that the Indian caste system influences economic behavior in many ways. Munshi and Rosenzweig (2006) find that particularly boys from backward castes are still channeled into local language schools although the returns to English education increased remarkably. Hoff and Pandey (2006) find that high school boys who belong to backward caste perform worse when their caste is publicly revealed than under anonymous conditions. They argue that backward caste individuals might anticipate that their effort will be poorly rewarded.

Hence, most strong ties relations in India tend to arise between the individuals belonging to the same caste (family and friends) and are tightened by cultural rules and rituals. Although Indian governments have initiated various policy programs to provide support to backward castes, the Indian caste system is still very important and has a strong influence on social interaction and economic decisions.

3.2.4. Indian Caste System and Financial Literacy

We argue that the Indian caste system influences the demand for financial products in India through its relevance for social interaction. Since backward castes are historically seen as the deprived class and still seem to suffer from certain inequalities like education, it is likely that individuals belonging to backward caste tend to have a lower level of financial knowledge as compared to other individuals and are less likely to participate in financial markets. Consequently, externalities associated with social interaction among themselves may have an important influence on current financial knowledge and investment behavior of backward caste people, above and beyond the effects of any current conditions such as individual income, education, and access to information sources. According to Hong et al. (2004), one would expect that a low stock market participation rate among individuals belonging to backward caste results in a low *participation equilibrium*.

However, in India and other emerging economies stock market participation is rare. By focusing exclusively on stock market participation one would ignore that individuals may invest in other financial instruments which might be more relevant in emerging economies. We therefore do not restrict our empirical analyses

to the stock market but investigate the demand for various financial instruments. Moreover, people in emerging economies may not even be aware of various financial instruments. Studies focusing exclusively on *participation* in financial markets are not able to examine the factors determining the *financial knowledge* of individuals who do *not* participate in financial markets. However, the fact that someone does not invest in a financial instrument does not mean that she or he is not aware of that financial instrument. In the case of word-of-mouth learning the social interaction takes place *before* any investment and therefore investigating the financial knowledge of non-investors might shed some light on this type of knowledge diffusion. Therefore, we distinguish between individual awareness of financial instruments and actual investment behavior.

We argue that social interaction mainly takes place between members of the same caste and between geographically proximate individuals. Therefore people belonging to backward castes may communicate with people who also belong to these castes and who are living in the same region. Hence, the effects of intra-caste social interaction on individual financial knowledge and individual investment behavior may be stronger if people belonging to backward castes are living in regions where the share of backward castes in total population is high.

It cannot be overlooked, however, that modern communication technologies may facilitate cross-caste communication. Internet users, for instance, are often anonymous and thus caste affiliation may not be that relevant for communication via the Internet. Moreover, cross-regional communication is facilitated by mobile phones which is the fastest interface for financial intermediation in India today. Hence, the availability of modern communication technologies may also reduce the relevance of geographical proximity for the diffusion of financial knowledge. It is possible that strong ties may even exist between individuals who are not geographically close to each other e.g. if family members living in distant regions.

However, there are compelling reasons to posit that caste affiliation and geographical proximity still significantly influence individual awareness of financial instruments and investment behavior. First, many people in India do not have access to modern communication technologies. Second, it is likely that people belonging to backward castes have strong ties relationships mainly with people who also belong to backward castes (family and friends) because the Indian caste system is formidable and imposing in practice. Finally, geographical proximity tends to facilitate a high frequency of social interaction and may also positively affect emotional intensity or intimacy of a relationship. Consequently, even in the presence of modern communication technologies social interaction is stronger within castes and within regions. Nevertheless, in our empirical analysis we control for the use of the Internet, television, radio, and newspapers, since these source of information may influence individual financial knowledge and investment behavior.

This discussion leads to the following hypotheses. First, controlling for income, education, frequency in use of information sources, and focusing on non-investors, we expect that backward caste people are less likely to be aware of various financial instruments. Second, we expect that this negative effect is stronger if an individual belonging to backward castes lives in a region with a strong presence of backward castes. Third, we expect that people who consult other individuals or institutions before making investment decisions are more likely to be aware of financial instruments. Fourth, the positive effect of consulting friends tends to be lower for backward caste people, in particular if they live in regions with many other backward castes. Fifth, actual investment behavior may be directly influenced by the Indian castes system or it may be indirectly affected by the Indian caste system through its impact on individual financial knowledge via word-mouth communication.

3.3. Method

3.3.1. Data – The National Data Survey on Saving Patterns of Indians (NDSSP)

Our empirical analysis is based on the National Data Survey on Saving Patterns of Indians (NDSSP), which was conducted by AC Nielsen/Org-Marg on behalf of the Indian Ministry of Finance in 2004/2005 in India. The NDSSP comprises information about household savings, investment in financial instruments as well as the financial knowledge of the respondents. It further provides information about respondents' age, caste affiliation, education, information sources used and place of residence (urban or rural area, state).

The NDSSP dataset covers 40,862 families and about 211,000 individuals. Although each household was asked to provide information on all its members (e.g. demographics, education), only one earning adult member from each family was chosen to answer a detailed questionaire. We restrict our sample to respondents who are head of the household and who can therefore be expected to be responsible for savings decisions. Moreover, we exclude all household heads without positive savings from the empirical analysis because it is very likely that only household heads with positive savings are really interested in financial matters. As expected, almost all of the household heads without positive savings do not answer questions concerning saving decisions which implies a high number of missing values. Hence, in our sample all household heads have a positive amount left as a balance, which means that the total annual income of these respondents exceeds their personal

expenses and the expenses of persons financially dependent on them. Our final sample consists of 28.406 observations.[7]

3.3.2. Measurement of Variables

Dependent Variables

Due to the liberalization of Indian financial markets at the beginning of the 1990s, investment opportunities of people in India have increased remarkably. Like in other countries people can now acquire and publicly trade company issued tangible assets (shares) and can invest in debt securities that companies or the government issue (bonds). Moreover, they can invest in mutual funds which are saving pools of money of several investors invested into different kinds of securities. However, the most important Indian financial instruments are *chit funds* and *group savings*. Chit funds and group savings resemble common Indian bank operations and are offered by banks as well as by Micro Finance Institutions (MFI).

A *chit fund* is an indigenous rotating saving and credit organization. While chit funds are prevalent among households and small businesses all over India, they are also organized by Chit Fund Firms, especially in South India, and are regulated by the Chit Fund Act, whereas *group savings* are mostly used by the so called Self Help Groups (SHGs) and promoted by government agencies, NGO's and banks. Group savings are targeted to women as well as to poor individuals and structurally poor communities, e.g. Scheduled Castes (SC's) and Scheduled Tribes (ST's). Group savings represent access to financial services at low cost and are aimed to motivate individuals in doing commercial village affairs. Group saving members periodically save in the group and the savings are lent out to members who require loans at a fixed interest rate (Nair, 2005).

In our empirical analysis we investigate the factors that determine the individual awareness of these financial instruments and the actual investments in these financial instruments.

Awareness: The individual awareness of specific financial instruments is measured by interviewees' answers to the following question: "Are you aware of such an instrument of investment?" The respondent could answer either yes or no. Thus, we compute five dummy variables: *"awareness: shares, bonds, mutual funds, chit funds and group savings"*. The respective dummy variable takes on the value one if the respondent declares that he or she is aware of the respective financial instrument, and is zero otherwise. This survey question is a filter for the subsequent questions regarding the individual investment behavior. If an interviewee states

[7]The head of household in India is the one who maintains the family, in our final sample 25,400 men and 3,006 women between 17 and 92 years are head of household.

that he or she is not aware of a financial instrument no further questions are asked concerning investments in the respective financial instrument.

Investment: Only those interviewees who state that they are aware of a financial instrument are asked whether they ever invested in that financial instrument. Therefore we compute five dummy variables: *"invested: shares, bonds, mutual funds, chit funds and group savings"* If a respondent declares that she or he has ever invested in a financial instrument, the respective dummy variable takes on the value one and zero otherwise. Hence, a value of zero means that the respondent never invested in such an instrument.

Explanatory Variables

Backward castes: The NDSSP dataset allows us to identify individuals who belong to the "Scheduled Castes (SC's)" and "Scheduled Tribes (ST's)", who were previously called the depressed by the British. Especially in the past decades the economic situation of many individuals belonging to the backward caste has improved but SC's and ST's are still recognized as the so called "economic backward classes" in India. The dummy variable "backward caste" takes on the value one if an interviewee reports that she or he belongs either to "Scheduled Castes" or to "Scheduled Tribes" and is zero otherwise. In our empirical analyses the differences between *"backward castes"* and other castes may be understated since the reference group does not only comprise higher castes, such as Brahmins, but also "other backward castes (Shudras)" (Deshpande, 2000b).

Social interaction: In order to measure social interaction that focuses explicitly on financial knowledge diffusion, the following survey question is used: "Did you consult anybody outside your household before making savings decisions?" The interviewees can choose between several answers and the questionnaire allows for multiple responses.[8] We focus on the interviewees' first answers because those tend to be the ones of highest relevance.[9] The dummy variable *"family"* takes on the value one if respondents declare that they do not ask anybody outside their household except other relatives, and is zero otherwise. The dummy variable *"friends"* takes on the value one if an interviewee's first answer is that she or he consults friends/peer group and zero otherwise. Professional consultancy as a source of external information is measured by a third dummy variable *"professionals"* that takes on the value one if an interviewee's first answer is that she or he asks professional consultants such as a bank advisor, investment advisors, NGO's or other agents, otherwise the variable is zero. Nevertheless, a respondent might

[8] Of course, multiple responses are not possible if an interviewee's first answer is 'NO'.

[9] This type of variable is used in many studies to measure the extent to which individuals interact with their social surrounding (Granovetter, 1983; Burt, 1980).

also consult other individuals. Therefore our dummy *"others"* takes on the value one if an interviewee's first answer is that she or he consults other individuals or institutions such as religious institutions, camps organized by private companies or the government, a school teacher or a colleague at work, and is zero otherwise.

Savings: The NDSSP dataset comprises information about individuals' total earnings from work during the last twelve months from primary and secondary occupation as well as other sources of incomes, e.g. rents or remittances. Moreover, respondents report their annual expenditures for food and grocery, real estate costs, education expenses, medical expenses or repayments of loans and others. Our indicator for individual savings is the difference between annual earnings and expenditures. We use the variable *savings* as a control variable instead of using simply the variable *income* because only those individuals who are able to save money may be interested in financial matters, seek for investment opportunities, and may participate in financial markets.

Information Sources: While we analyze knowledge diffusion via word-of-mouth communication it is important to control for further channels through which financial knowledge may diffuse, e.g., TV, radio, newspaper or the Internet. With respect to the use of diverse information channels, the respondents are asked whether they listen radio, watch TV, read newspapers, and use the Internet and at which frequency they make use of these information channels. They are asked whether they used these information sources during the last month *"not at all"*, *"irregularly"* which means that they used them once a week or less, or *"regularly"* which means every day. Dummy variables are generated for the daily use of radio and TV as well as for their occasional use which means that the respondent is using these communication channels at least once a week or less. The reference category is *"not at all"*. In a similar way we generate dummy variables for the use of Internet and newspapers as sources of information.

Education: Our dataset also comprises detailed information about the individual level of education. The respondents declare their education levels by choosing between twelve possible answers from *"illiterate"* to *"post graduate and above"*. We generate dummy variables for eleven levels of education where "illiterate" is the reference category.

Furthermore, the dataset allows us to identify individuals who are able to speak, read or write English. Knowledge of English improves individual ability to gather information about financial matters since this enables individuals, for instance, to read international newspapers or to use the Internet more effectively. We generate the dummy variable *"English"* to control for this ability. Moreover, we take into account interviewees' general interest in economic topics by generating a dummy

variable *"knowledge of inflation"* which takes on the value one if a respondent reports that she or he knows the current rate of inflation, and is zero otherwise.

Risk attitude: Individual risk attitude influences investment decisions and may also influence information seeking activities and in turn the individual awareness of financial instruments. Risk attitude is measured using a lottery-type question. The interviewee has to make a hypothetical investment of 1000 rupees and can choose between three alternative investments. In the first choice Rs. 1000 may grow up to 2000 Rs. after one year or the investor may only get Rs. 500 back. In the second choice money may grow up to Rs. 1200 or the investor may lose some of the money and get Rs. 800 back. In the third choice money will grow to Rs. 1050 without any loss. The dummy variable *risk attitude* takes on the value one if an interviewee opts for the third choice, and is zero otherwise. Hence, this indicator may reflect an individual's *uncertainty avoidance* since only the third choice guarantees a positive return whereas the returns are uncertain in the first and the second choice.

Regional Characteristics: Regional measures at the state-level are obtained from *official statistics*. Since we argue that a strong presence of backward castes in a region may influence the diffusion of financial information in a region, we measure the presence of backward castes by the *fraction of backward castes* in total population at the state-level, where 25 Indian states are taken into account. The mean value of the fraction of backward castes is 28 percent and varies between 10 and 90 percent. This shows that the scheduled caste population is dispersed in many regions and that their presence varies from state to state. To capture the effect of social interaction between backward castes we later include an interaction term in the analyses taking on the value one when the respondent himself is affiliated to backward castes and lives in a state where the share of other backward castes is high.

However, the variable *fraction of backward castes* is likely to be correlated with other regional characteristics. In order to control for other influences we include additional variables in our empirical analyses. Obvious candidates are the illiteracy rate and income at the state-level. The *Gross Domestic Product* per capita at the state-level *"GDP"* as well as the *"Illiteracy rate at state-level"* are also obtained from official statistics of the Reserve Bank of India in the year 2004 - 2005.[10]

[10]In order to check whether our NDSSP data is representative at the state-level, we compare the fraction of backward castes computed from our sample with official statistics. Further, we checked whether the illiteracy rate computed from NDSSP dataset is similar to the rate obtained from official statistics (see chapter 3). The NDSSP dataset seems to be representative at the Indian state-level. We also use official data obtained from the Reserve Bank of India in our empirical analyses, see: http://dbie.rbi.org.in/InfoViewApp/listing/main.do.

3.4. Results

3.4.1. Descriptive Statistics

Figure 3.1 reports the fraction of individuals who are aware of at least one of the following financial investments: shares, bonds, mutual funds, chit funds and group savings. Moreover, it shows that the fraction of respondents who have invested in at least one of these financial instruments during the past 12 months is very low. Approximately 28.6 percent of the respondents belonging to backward castes state that they are aware of at least one of these financial instruments and 41.8 percent of the individuals belonging to other castes report that they are aware of at least one of the financial instruments. This might point to a gap between these groups with respect to financial knowledge. However, if one focuses on individuals who are aware of financial instruments, both groups do not differ with respect to participation in financial markets: 12 percent of the people belonging to backward castes being aware of financial instruments report that they also invested in financial products and 13.4 percent of people belonging to other castes report that they invested. As can be seen from Figure 3.1 in both groups the fraction of people investing in financial products is much lower than the fraction of people being aware of these products. Hence, differences in investment behavior may result from differences between both groups with respect to the awareness of financial instruments.

In order to analyze the differences between backward castes and other castes in more detail, Table 3.1 reports the awareness of financial instruments and financial market participation for each of the five financial instruments separately, i.e. the fractions of individuals who are aware of the respective financial product and who invest in that financial product. One might expect, however, that individual awareness as well as investment behavior are related to household income and household savings. Heads of households with positive savings and high incomes may be more interested in financial matters and may be also more likely to participate in financial markets. Hence, differences between backward castes and other castes with respect to financial knowledge and investment behavior may be an artefact of income inequalities if income and savings are not taken into account.

Therefore, Table 3.1 focuses on households with positive savings (Sample I) and also presents statistics for households which additionally belong to the quartile of households with the highest incomes (Sample II). As can be seen from the table, there are significant differences between backward castes and other castes with respect to awareness of financial instruments. For instance, in the group of individuals with positive savings (Sample I), the fraction of individuals being aware of

Figure 3.1.: Awareness of Financial Instruments and Investment Behavior

Figure 3.1 shows for backward castes and other castes the absolute number of individuals in our sample who are aware of at least one financial instrument and who have invested in at least one financial instrument. The financial instruments are shares, bonds, mutual funds, chit funds, and group savings. Fractions are reported in parentheses.

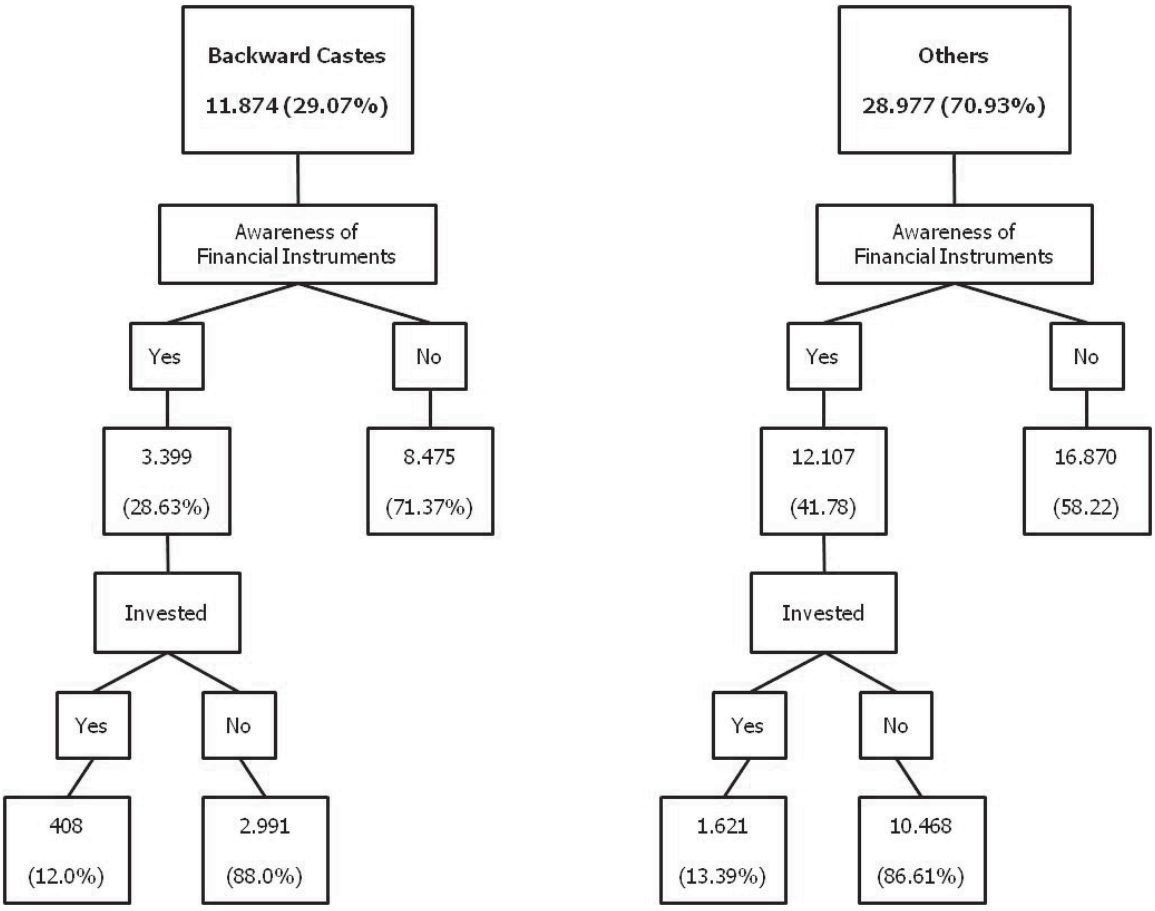


Table 3.1.: Means and Standard Deviations: Awareness of Financial Instruments and Savings

	others			backward caste			Differences	
Awareness (Sample I)	Mean	St. Dev.	Obs.	Mean	St. Dev.	Obs.	Difference	test statistic
Shares	0.318	0.465	20960	0.200	0.400	7446	0.117	19.2854
Bonds	0.256	0.436	20960	0.147	0.355	7446	0 .108	19.2029
Mutual Funds	0.199	0.399	20960	0.118	0.323	7446	0.080	15.5945
Chit Funds	0.451	0.497	20960	0.328	0.469	7446	0.123	18.5364
Group Savings	0.300	0.458	20960	0.250	0.433	7446	0.049	8.5653
Awareness (Sample II)								
Shares	0.535	0.498	5458	0.349	0.476	1557	0.185	13.0890
Bonds	0.448	0.497	5458	0.289	0.453	1557	0.159	11.3509
Mutual Funds	0.383	0.486	5458	0.254	0.435	1557	0.128	9.3913
Chit Funds	0.548	0.497	5458	0.352	0.477	1557	0.196	13.8503
Group Savings	0.345	0.475	5458	0.284	0.451	1557	0.061	4.5424
Investment (Sample I)								
Shares	0.018	0.135	6677	0.014	0.120	1495	0.003	1.1988
Bonds	0.016	0.126	5381	0.009	0 .099	1102	0.006	1.4269
Mutual Funds	0.008	0.092	4179	0.003	0.058	885	0.005	1.7233
Chit Funds	0.113	0.317	9472	0.071	0.258	2446	0.041	6.4324
Group Savings	0.057	0.232	6288	0.110	0.313	1865	-0.053	-7.9086
Investment (Sample II)								
Shares	0.032	0.176	2921	0.027	0.163	544	0.004	0.319
Bonds	0.026	0.162	2446	0.015	0.123	450	0.011	1.4212
Mutual Funds	0.012	0.112	2092	0.002	0.050	397	0.010	1.7991
Chit Funds	0.106	0.308	2996	0.067	0.250	549	0.039	2.8211
Group Savings	0.029	0.169	1888	0.040	0.197	443	- 0.010	-1.1853

In order to analyze the differences between backward castes and other castes in more detail table 3.1 reports means and standard deviations for group differences between backward castes and others with respect to awareness and investments in shares, bonds, mutual funds, chit funds and group savings. First those individuals are considered who dispose savings to invest (awareness (I)). A two-sample tests of proportions is employed for categorical variables, for continuous variables we employ a t-test. In the second step individuals are considered who are in disposition of savings to invest and belong to the 25 percent of the top earners in our survey (awareness (II)). Group differences are statistically significant for all five investments and means are notably lower for backward castes than for others with respect to the awareness of financial instruments. Significant group differences still exist if we look at those who belong to the top 25 percent earners. Even by ensuring that an individual has a sufficient income to invest, individuals who affiliate to backward castes have a lowered awareness about these financial instruments compared to others. In the third and fourth step the same test for group differences is made with respect to investments in financial instruments. First individuals are considered who dispose positive savings (investment (I)) then those who dispose positive savings and belong to the 25 percent of the top earners. Again means are lower for individuals who are affiliated to backward caste than for Others, except that significance values are now notably lower. Hence, group differences with respect to the decision to invest seem to disappear as soon as an individual has savings to invest and in addition belongs to the top 25 percent earner (investment (II)). Individuals that are ascribed to Others can be members of all other caste groups as well as other religions like Muslims. Therefore test statistics show values of a two sample proportion test that is employed.

shares is 31.8 percent for other castes and 20 percent for backward castes. As one might expect, this fraction increases if only households with high incomes are considered (Sample II). However, while the fraction increases to 53.5 percent for other castes, it merely increases to 34.9 percent for backward castes which results in a difference of 18.6 percentage points. Contrary to our prior expectations, differences between castes do not vanish if one focuses on households with high incomes but become even more evident. A similar result can be observed for the other financial instruments. For all financial instruments the fraction of individuals being aware of the respective financial instrument is significantly lower for backward castes as compared to other castes.

However, actual investment in shares does not differ remarkably between backward castes and other castes if only those individuals are considered who are aware of the respective financial instrument. For instance, the fraction of individuals investing in shares is 1.8 percent for other castes and 1.4 percent for backward castes (Sample I). For households with high incomes this fraction increases to 3.2 percent for other castes and 2.7 percent for backward castes. Similar results can be obtained for bonds. In contrast, there are some differences between the two groups with respect to the specific savings schemes practiced in India. While backward castes tend to invest in group savings, other castes seem to prefer chit funds. At least with respect to group savings the differences vanish if only high income households are considered. As one might expect, the fraction of individuals investing in group savings and chit funds decreases if only high income households are considered. This shows that these financial instruments are attractive especially for the poor.

Taken together, descriptive statistics indicate that backward castes are less aware of financial instruments than other castes. This result persists even if only high income households with positive savings are considered. In contrast, differences between both groups are less distinct with respect to their actual investment behavior.

Summary statistics for all explanatory variables are reported in Table 3.2. As can be seen from the table, both, backward castes as well as other castes predominantly consult their family members before taking savings decisions, i.e. roughly 73 percent of the individuals in our sample consult their family and relatives. Friends and peers are consulted by 17.7 percent of the group of other castes and by 16.7 percent of the group of individuals belonging to backwards castes. A minority of individuals in both groups consult professionals or uses other sources of consultancy. There are no significant differences between the two groups.

Personal characteristics do also not differ very much between the two groups. Savings are slightly higher for other castes as compared to backward castes but risk

attitude seems to be very similar. The educational background, however, is very different. Other castes are better educated than backward castes and the fraction of individuals who are able to speak, read or write English is significantly lower for backward castes as compared to other castes. Furthermore, individuals belonging to other castes tend to use information sources like newspaper, television, and Internet to a larger extent than backward castes. This may be explained by the lower level of education and the fact that 51.4 percent of individuals belonging to backward castes live in rural areas whereas only 44.5 percent of individuals belonging to other castes live in such areas.

Since we make use of a number of explanatory variables, multicollinearity might be an issue. Although not reported here, we calculate pairwaise correlation coefficients for all explanatory variables. The strongest correlation with a correlation coefficient of -0.714 arises between the measures of the GDP per capita at the state-level and the illiteracy rate at the state-level. For this reason these two variables are not jointly included as regressors. Instead, illiteracy rate is used as an explanatory variable for the awareness of financial instruments and GDP per capita is included as an explanatory variable for actual investment decisions. Further variables with a modest correlation are education variables, the knowledge of the English language as well as variables that indicate the use of mass media as information sources. The correlation coefficients vary for our education dummies higher secondary degree to post graduate, and the variable English knowledge between 0.207 and 0.273. Correlation coefficients for the daily use of newspaper and Internet and the daily use of radio and TV vary between 0.151 and 0.379. Moreover, we check for multicollinearity among the explanatory variables by calculating variation inflation factors (VIF). These are reported in Table 3.3. The variation inflation factors range from 1.03 to 3.05, which indicates that multicollinearity is not a severe problem.

Table 3.2.: Summary Statistics for Explanatory Variables

	Others		backward castes		Differences	
	Mean	st. Dev.	Mean	st. Dev.	Difference	test statistic
Savings Decisions – Consultancy						
Only family and relatives	0.728	0.445	0.734	0.441	-0.007	-1.380
Friends and peer group	0.177	0.381	0.167	0.373	0.009	1.937
Professionals	0.072	0.258	0.074	0.261	-0.002	-0.71
Others	0.024	0.153	0.024	0.153	-0.000	-0.0187
Personal Characteristics						
Age*	39.512	11.619	38.635	11.497	0.877	6.945
Female	0.100	0.299	0.140	0.347	-0.040	-9.83
Married	0.855	0.352	0.839	0.367	0.016	3.41
Savings*	8.399	1.479	8.199	1.478	0.2005	5.668
Risk Attitude	0.757	0.429	0.771	0.408	0.024	-4.6627
Education						
Illiterate	0.136	0.342	0.198	0.398	-0.062	-13.2153
Literate no schooling	0.022	0.147	0.028	0.167	-0.006	-3.287
Less than primary	0.046	0.210	0.059	0.236	-0.001	-4.573
Primary school	0.104	0.306	0.114	0.318	-0.009	-2.326
Middle school	0.173	0.378	0.170	0.376	0.003	0.613
High school	0.213	0.410	0.182	0.386	0.031	5.979
Higher Secondary	0.101	0.302	0.104	0.306	0.003	-0.775
Technical Diploma	0.022	0.148	0.014	0.121	0.007	4.062
Graduate	0.123	0.002	0.098	0.003	0.025	5.960
Professional Degree	0.023	0.152	0.011	0.108	0.011	6.338
Post Graduate	0.032	0.176	0.016	0.128	0.015	7.063
Knowledge English	0.498	0.500	0.442	0.496	0.055	8.405
Knowledge Inflation	0.215	0.411	0.186	0.389	0.029	5.628
Information Sources						
Daily Use Newspaper and Internet	0.489	0.495	0.358	0.479	0.131	19.835
Irregular Use Newspaper and Internet	0.246	0.431	0.252	0.434	0.247	-2.744
Daily Use Radio and TV	0.729	0.462	0.674	0.489	0.091	9.068
Irregular Use Radio and TV	0.289	0.453	0.289	0.453	-0.001	-0.565
Regional Characteristics						
Fraction of backward caste* (state level)	0.253	0.105	0.348	0.224	-0.094	-49.27
Rural	0.445	0.498	0.514	0.495	-0.069	-10.566
GDP p.c. (state level)*	9.888	0.387	9.895	0.382	-0.007	-2.8547
Illiteracy rate* (state level)	0.322	0.105	0.326	0.091	-0.004	-2.698

Table 3.2 reports summary statistics for explanatory variables separately for backward castes and other castes. Four dummy variables are classified into "Savings Decisions – Consultancy". These variables indicate the groups of individuals consulted by household heads before taking a savings decisions. "Personal Characteristics" comprise age, gender, marital status and risk attitude. The level of "Education" and knowledge is measured by 13 dummy variables, the use of "information sources" is measured by four dummy variables. Moreover, official data for Indian states are used to control for regional characteristics such as the fraction of individuals belonging to backwards castes in total population, the Gross Domestic Product (GDP) per capita and the illiteracy rate at the state level. Our empirical analyses are based on 7446 observations for backward castes and 20960 for others. The table reports a two-sample tests of proportions between the sample means of the group of individuals belonging to backward castes and the group of individuals belonging to other castes. Continuous variables are assigned with one asterisk. The test statistics show the values of a two sample proportion test.

Table 3.3.: Variation Inflation Factors for Explanatory Variables

Explanatory Variables	VIF
Savings Decisions – Consultancy	
Friends and peer group	1.03
Professionals	1.02
Others	1.01
Personal Characteristics	
Backward Caste	1.11
Age	1.16
Female	1.08
Married	1.14
Savings	1.18
Risk Attitude	1.03
Education	
Literate no schooling	1.14
Less than primary	1.32
Primary school	1.32
Middle school	1.74
High school	2.32
Higher Secondary	3.05
Technical Diploma	2.46
Graduate	1.36
Professional Degree	2.96
Post Graduate	1.41
Knowledge English	2.05
Knowledge Inflation	1.15
Information Sources	
Daily Use Newspaper and Internet	2.44
Irregular Use Newspaper and Internet	1.55
Daily Use Radio and TV	1.32
Irregular Use Radio and TV	1.05
Regional Characteristics	
Fraction of backward caste (state level)	1.15
Rural	1.14
Illiteracy rate (state level)	1.10

Table 3.3 reports the variation inflation factors (VIF) for explanatory variables used in our empirical estimations. In order to compute VIFs, we conduct a linear probability model where the dependent variable is the awareness of shares. The values of the variation inflation factors are below the critical levels suggested in the literature which means that multicollinearity is not a severe problem.

3.4.2. Determinants of Individual Awareness of Financial Instruments and Investment Decision

In order to investigate the determinants of individual financial knowledge and actual investment decisions, we conduct separate estimations for each financial instrument, i.e. shares, bonds, mutual funds, chit funds, and group savings. We run Probit regressions since the dependent variables – awareness of financial instruments and actual investment behavior – are binary variables and report the marginal effects for each of the explanatory variables which are calculated at the means of the other explanatory variables.

A potential concern with respect to the empirical analyses of the factors explaining individual awareness of financial instruments is that our analyses are based on cross sectional data and therefore do not allow us to investigate the development of individuals' financial knowledge over time. Potential endogeneity problems may arise, for instance, because experience with investments in certain financial instruments may affect the decision to consult others. To avoid potential endogeneity problems we focus on the group of non-investors in our analysis of the factors influencing the probability of being aware of shares. This means that we only consider individuals who report that they never invested in the respective financial instrument and therefore exclude all individuals from the empirical analyses who ever had invested in that financial instrument. In a next step, we investigate the factors that influence the probability of investing in financial instruments. Here, we only consider those individuals who are aware of the respective financial instruments and exclude all others. For instance, in our empirical analyses of the factors influencing the probability of being aware of shares, we exclude all individuals who ever invested in shares and in our analyses of the factors influencing the probability of actually investing in shares, we exclude all individuals who are not aware of shares. This allows us to disentangle the factors influencing awareness of financial instruments from the factors influencing actual investment behavior.

We first estimate a baseline model which focuses on the main effects of the explanatory variables. In an extended model, we also take into account interactions between three dummy variables, namely the backward caste dummy, a second dummy that takes on the value one if the respondent lives in an Indian state with a high share of backward castes in total population (above average), and a third dummy reflecting the consultancy of friends. This allows us to analyze whether there are differences between individuals belonging to backward castes and individuals belonging to other castes with respect to the relevance of friends as sources of financial knowledge and the effect of a strong presence of backward castes in a region. We interact these variables pairwise and also include triple interactions. We compute the marginal effects of the interaction terms by using the delta method proposed by Ai and Norton (2003) and Corneliessen and Sonderhof (2010) because standard methods for the computation of marginal effects cannot be applied in the case of interaction terms.

Awareness of Financial Instruments

Table 3.4 presents the results for our baseline model. It reports the marginal effects of the explanatory variables on the individual probability of being aware of shares, bonds, mutual funds, chit funds, and group savings. Although not reported, the

results of χ^2-tests of proportion show that the estimated marginal effects of the consultancy variables are jointly significant for all five financial instruments. This suggests that social individuals who consult other individuals before taking savings decisions are more likely to be aware of financial products than individuals who only consult family members. Especially consultancy of friends and professionals is positively related to the awareness of financial instruments. For instance, consulting friends is associated with a 4.77 percentage points higher probability of being aware of shares and consulting professionals is associated with a 5.69 percentage points higher probability. In contrast, consulting other individuals and institutions does not significantly affect the probability of being aware of share, bonds and mutual funds whereas this type of consulting positively influences the probability of knowing chit funds and group savings.

Regional factors are also relevant for individual financial knowledge. The effects of the regional variables are jointly significant as well as individually significant. Individuals living in rural areas, in regions with a high share of backwards castes and in regions with a high share of illiterate people are less likely to be aware of financial products. The only exception are group savings where people in rural areas have a higher probability of knowing this financial instrument. Hence, our results point to the relevance of regional knowledge diffusion since the strong presence of other individuals with a low level of financial knowledge tends to be associated with a lower probability of being aware of financial instruments.

Among the personal characteristics backward caste affiliation is the only variable which is statistically significant for all financial instruments. It is a striking result that the estimated marginal effect of the backward caste dummy variable is negative and statistically significant even after controlling for a number of other variables. Our results suggest, for instance, that people belonging to backward castes have a 2.99 percentage points lower probability of being aware of shares than people belonging to other castes. The marginal effect of savings is always positive and statistically significant for four of the five financial instruments. According to our results females tend to be more aware of group savings while less aware of shares. Moreover, awareness of shares, bonds, and mutual funds seems to increase with age.

Education is also highly relevant for the probability of being aware of financial instruments. According to the results of χ^2-tests the marginal effects of the ten dummy variables reflecting the levels of education are jointly significant. This is especially true for shares, bonds, and mutual funds where a higher level of education is associated with a strong increase in the probability of knowing the respective financial instrument. Education seems to be less relevant for group savings. Furthermore, the awareness of all financial instruments is higher if individuals are able to write, read or speak English and if they state that they know the current

rate of inflation. Finally the use of public information sources such as Internet, TV, and radio increases the probability of being aware of financial instruments. In particular, those individuals who use these information sources every day are more likely to know financial instruments.

The results for the extended model with interaction terms are presented in Table 3.5. Although all explanatory variables are included in the regressions, only the marginal effects of the variables of interest are reported. Our theoretical considerations let us expect that the effect of social interaction with friends and the presence of backward castes in a region may be moderated by the backward caste variable. Marginal effects of interaction terms provide information about the moderating effects of the variables. As can be seen from the table the sign and the statistical significance of the main effects are the same as in Table 3.4. The only interaction term which does not have a statistically significant marginal effect in all of the five regressions is the interaction between the backward castes dummy variable and the dummy variable reflecting consultancy of friends. In contrast the interaction between backwards castes dummy and the dummy reflecting a strong presence of backward castes per state is negative in all regressions but only significant in four regressions. This implies that individuals belonging to backward castes and living in states with a strong presence of backward castes are less likely to be aware of shares, bonds, mutual funds, and chit funds. For instance, the probability of being aware of shares, is about 9.5 percentage points lower for backward caste people who live in regions with many other backward caste people. This may point to the relevance of the regional diffusion of financial knowledge. Moreover, individuals who live in states with a strong presence of backward caste people and who consult friends tend to be more likely to know chit funds and group savings but less likely to know bonds. The marginal effect of the triple interaction term is negative in four of five regressions but this negative effect is only statistically significant at a five or ten percent level in three of four regressions. A negative marginal effect implies that especially those individuals who belong to backward castes, consult friends, and live in states with a large fraction of backward castes are less likely to be aware of the respective financial product. This result is in line with our theoretical considerations.

Investment in Financial Instruments

Next we analyze the determinants of actual investment behavior. The analysis is restricted to individuals who are aware of the respective financial instrument, i.e. shares, bonds, mutual funds, chit funds, and group savings. Table 3.4 reports the marginal effects of the explanatory variables on the probability of having invested in the respective financial product. Our results suggest that the probability of in-

vestment in shares and bonds is not strongly related to external consultancy since the results of χ^2-tests show that the marginal effects of the consultancy variables are jointly insignificant. In contrast, the marginal effects of these variables are jointly significant in the case of chit funds and group savings. Hence, social interaction seems to be more relevant for investments in financial instruments which are specific for India and which are important for poor people. This is also true for the variables capturing regional effects which do also have a significant effect on the probability of investing in these financial instruments but do not seem to be very relevant for the other financial instruments. Individuals living in rural areas and in Indian states with a lower GDP per capita are more likely to invest in group savings and individuals living in states with lower GDP per capita and a lower fraction of backward castes are more likely to invest in chit funds.

The marginal effect of the backward castes dummy variable is only significant for investment in group savings and chit funds, where the effect is positive for the former and negative for the latter. These results suggest that group savings are used more frequently by individuals belonging to backward castes whereas chit funds are used more frequently by other castes. Higher savings increase the probability of investing in shares, bonds, and mutual funds, whereas it is negatively related to group savings. Moreover, women are more likely to invest in group savings. These results can be expected because group savings are a financial instrument which is designed for poor individuals and in particular for women. Both, chit funds as well as group savings are negatively related to the level of education. The better the education the lower the probability of investing in these financial instruments. In contrast, investments in shares, bonds, and mutual funds are not related to education at all or to a lesser extent. The use of information sources, such as TV, radio, and newspaper seems to be relevant for investments in chit funds and group savings but does not seem to be very relevant for investment in other financial instruments.

Next, we present the estimation results for the extended model with interaction terms. As can be seen from Table 3.7, these regressions can only be performed for shares, chit funds, and group savings. Due to the small number of positive outcomes of the dependent variables the zero outcome is predicted perfectly in the other regressions. The results suggest that the main effects as well as the interaction effect are not statistically significant in most cases. Hence, the inclusion of interaction term does not seem to add much to the understanding of the relationship between actual investment behavior and the variables of interest.

Robustness Checks and Limitations

In order to check the robustness of our results we conduct additional regressions. Firstly, the error term may contain an unobserved state-level effect and consequently the standard errors of the effects of aggregate explanatory variables on individual-specific response variables may be biased (Wooldridge, 2003). Since the fraction of backward castes in total population at the state-level is included as an explanatory variable in our empirical analyses (and also the illiteracy rate at the state-level), we check the robustness of our results by adjusting standard errors for intra-cluster correlation within Indian states. While estimation results are hardly affected by this robustness check, we do not present adjusted standard errors because of the relatively small number of clusters (25 Indian states).[11] Secondly, we account for region-specific fixed effects by including regional dummy variables. The results are robust controlling for region-specific fixed effects.[12] Thirdly, we check the robustness of interaction effects by estimating linear probability models. The marginal effects of interaction terms obtained from OLS estimates are very similar to the interaction effects obtained from probit estimates. Fourthly, we run probit regressions separately for individuals belonging to backward castes and individuals belonging to other castes. The estimation results confirm our findings and do also point to significant differences between these groups. Finally, we restrict our empirical analyses to the sample to the top 50 percent of income earners. The marginal effect of the fraction of backward castes in total population on the awareness of financial instruments is still negative and statistically significant for all five financial instruments. Moreover, results are hardly affected with respect to the effects of consultancy by friends, professionals and others on investment behavior. This supports our main results. However, while the investments of lower-income households in chit funds and group savings are mainly influenced by social interaction with friends and peers, investments of higher-income households in these instruments seem to be influenced by the consultancy by professionals and others.[13]

Although our dataset comprises unique information about financial literacy and investment behavior of households in India, there are still limitations that should be mentioned. A potential concern with respect to the interpretation of our em-

[11] As shown by Bertrand et al. (2004) clustering performs very well in settings with at least 50 clusters.

[12] The dataset contains information about the region (town, village) in which the household is located. We used this information to compute regional dummy variables.

[13] We also restricted the analysis to the sample of the top 25 percent of income earners. Although the sample size is reduced to 6,429 observations, the results hardly change: the marginal effect of backward caste on the awareness of shares, chit funds and group savings is still negative and statistically significant except for group savings.

pirical results are potential endogeneity issues. An appropriate method to deal with endogeneity issues is the instrumental variable approach. It is very difficult, however, to identify valid instrumental variables that affect the dependent variables only through their influence on explanatory variables (Wooldridge, 2002). Unfortunately, our dataset does not contain exogenous variables that could serve as valid and sufficiently strong instruments for our variables of interest. We therefore attempt to minimize biases due to potential endogeneity issues. There are two major reasons why our independent variables may be correlated with error terms. First, reverse causality may be a problem because investment experience may affect the decision to consult others. Since we make use of a cross-sectional dataset, we are not able to investigate the development of individual awareness of certain financial instruments over time. To avoid biases resulting from reverse causality, we therefore focus on the group of non-investors when analyzing the factors influencing the individual awareness of financial instruments, i.e. we exclude all individuals who report that they ever invested in the respective financial instrument.

A second concern are omitted variables. Individual awareness of financial instruments and the investment decision may not only be influenced by social interaction and caste affiliation but also by other characteristics.[14] In order to avoid omitted variable bias, we use a substantial number of control variables that may correlate with our variables of interest and which may also influence the dependent variables. We control for personal characteristics, regional characteristics, education, and the use of various information sources. The estimated effect of backward caste is still statistically significant. This estimated effect actually tends to underestimate the relevance caste affiliation because the latter is likely to influence many of the included covariates (e.g. education). This means that any effect of caste affiliation that is mediated by control variables will be attributed to control variables and not to caste affiliation. It is fair to say, however, that we cannot completely rule out biases due to potential endogeneity although we have taken attempts to address potential endogeneity issues.

Finally, we cannot fully rule out the possibility of cross-group communication and cross-regional communication. These may be facilitated by modern communication technologies and consequently the diffusion of financial knowledge might be driven, for instance, by the use of mobile phones and not that much by physical modes, like face-to-face contacts. However, we argue that there are compelling reasons to posit that caste affiliation and geographical proximity are still relevant for the individual awareness of financial instruments and investment behavior (see

[14] Of course, reverse causality is not an issue for the caste variable since caste affiliation is given at birth and cannot be changed over lifetime. It may be correlated, however, with other unobserved variables.

Section 2.4.). Moreover, it can be expected that the estimated effect of the fraction of backward caste population at the state level would be low and statistically insignificant if geographical proximity was not important for the diffusion of financial knowledge. Our results, however, suggest that the estimated effects on individual awareness of financial instruments are remarkable and statistically significant. This may indicate that geographical proximity matters and that strong ties exist mainly between people who belong to the same caste and who live in the same region facilitating the transfer of financial knowledge.

3.5. Discussion

While the role of social interaction for stock market participation in developed economies has been analyzed in prior research, our knowledge of the relevance of social interaction for the demand for financial instruments in emerging economies is still limited. We investigate empirically the factors influencing individuals' awareness of financial instruments and actual investment behavior of households in India using a large scale survey of Indian households. In contrast to other empirical studies analyzing actual investment behavior of households, we distinguish between individuals' financial literacy and investment behavior.

If individuals learn about the existence of a financial instrument via word-of-mouth learning, social interaction takes place *before* the investment. It could be argued, however, that individuals who enjoy ex-post social interactions regarding their investment are more likely to consult others in order to learn about the investment tool. Nevertheless, this means that social interaction takes place before financial market participation. As we focus on social interaction before the investment decision, we consider the group of *non-investors* when analyzing the factors influencing individual awareness of financial instruments and focus on the group of individuals who are aware of financial instruments when analyzing the factors influencing actual investment behavior. This allows us to disentangle the factors influencing individual awareness of financial instruments and the factors influencing the investment behavior of Indian households.

With respect to individual *awareness* of financial instruments our estimation results suggest that social individuals who do not only consult their family members before making savings decision but also friends, professionals or other individuals and institutions are indeed more likely to be aware of financial instruments. Moreover, our results point to the relevance of caste affiliation. Individuals belonging to backward castes have a lower probability of being aware of financial instruments even when controlling for a number of potential confounds (e.g. education, usage of various information sources, savings, and regional characteristics). This is

especially true if these individuals live in Indian states where the share of backward caste people in total population is high. Furthermore, we find that daily use of information sources, such as radio, TV, newspaper, and the Internet, and the level of education are relevant factors influencing individual awareness of financial instruments.

With respect to the factors influencing the *investment behavior* of households our results suggest that once individuals are aware of financial instruments, the effects of caste affiliation and consultancy on the probability of investing in these instruments are statistically insignificant or not very strong. Only for the Indian-specific financial instruments (chit funds and group savings) we find some empirical evidence for a positive effect of social interaction. Since it is likely that particularly the lower-income households are interested in chit funds and group savings, this may indicate that investment behavior of these households is influenced by social interaction. The results of separate estimations for lower-income and higher-income households indicate that consultancy by friends and peers tends to be relevant for former, while consultancy by professionals seems to be more relevant for the latter. According to our estimation results, caste affiliation tends to influence the decision of households to invest in Indian-specific financial instruments but not the investments in shares, bonds, and mutual funds. Investments in shares, bonds and mutual funds are mainly determined by savings and regional characteristics. The usage of information sources and the level of education do not seem to be very important factors influencing the investment decision of households that are already aware of financial instruments.

Taken together, our estimation results suggest that once individuals are aware of shares, bonds, and mutual funds, their investment decision does not seem to be strongly affected by social interaction. Hence, social interaction may not affect investments in these financial instruments directly but indirectly through the positive effects of word-of-mouth communication on individual awareness of these instruments. This result emphasizes that it is important to distinguish between the determinants of financial knowledge and the determinants of actual investment behavior. Nevertheless, at least for Indian-specific financial instruments both, the individual awareness and the investment decision, seem to be related to consultancy by individuals and institutions outside the family.

However, our data show that the majority of household heads solely consult family members before making savings decisions while a minority also consults friends, professional consultants, or other individuals and institutions. This may point to the relevance of social networks for the diffusion of financial knowledge. Social interaction is more likely between individuals with strong social ties, such as family members or friends, than between individuals with weak social ties.

The existence of social networks may also explain why individuals belonging to backward castes have a significantly lower probability of being aware of financial instruments. Our estimation results as well as descriptive statistics show remarkable differences between the backward castes and other castes with respect to the awareness of the financial instruments. These differences do not vanish even if the comparison is restricted to high income households with positive saving rates. The Indian caste system strongly affects social interactions among Indians and therefore the diffusion of financial knowledge. If individuals belonging to backward castes mainly interact with family members or friends who also belong to backward castes, this intra-caste interaction is less likely to improve their financial literacy. Furthermore, geography seems to be relevant since face to face contacts facilitate the diffusion of information. Hence, the low level of financial knowledge might be self-sustaining because of strong intra-caste externalities.

All in all, our results indicate that backward caste people seem to be disadvantaged in making the best use of existing financial opportunities due to the lack of financial literacy. Backward caste people often even do not know financial instruments that are specifically targeted to them. The financial instrument of groups savings, for instance, is targeted to backward castes. Nevertheless, backward caste people have a lower probability of being aware of it as compared to other individuals. However, conditional on being aware of group savings, individuals belonging to backward castes have a higher probability of investing in this financial instrument. This implies that the lack of financial literacy is an important obstacle for participation in financial markets.

Hence, government programs that aim at improving financial literacy of backward castes tend to be an important mean to improve savings decision and, in turn, the standard of living of backward castes. According to our results, financial literacy education of backward castes may not only have a positive direct effect on the financial literacy of individuals participating in government programs but may also generate positive externalities because of word-of-mouth learning. This means that financial literacy education programs increasing the financial knowledge of the population or certain social groups could be an effective way to support the development of financial markets in emerging economies.

However, an increase in financial literacy does not necessarily lead to an increase in the participation of private households in financial markets. Our data show that only a small fraction of individuals who are aware of financial instruments do actually invest in these instruments. A possible explanation for this finding is the existence of informal financial investment options, e.g. lending to other family members. Informal financial instruments are characterized by lower transaction costs and flexible arrangements. Nevertheless, informal investments cannot fully substitute for formal financial institutions, since they are unsecured and often rely

on relationship and reputation (Ayyagari et al., 2010). Thus, in order to increase the effectiveness of financial literacy programs, differences between the determinants of financial literacy and actual investment behavior should be taken into account. Policy programs aimed at increasing the participation of private households in financial markets, could therefore combine financial literacy education with policy measures creating investment incentives since they complement one another.

3.6. Conclusion

Why do some individuals in India participate in the financial market while others do not? Our results suggest that a majority of Indian households are simply not aware of various financial instruments and that among those who are aware of financial instruments only a minority invests in these instruments. Individuals belonging to backward castes are less informed about financial instruments and are, therefore, also less likely to participate in financial markets. This result holds even if the analysis is restricted to high income households with positive saving rates. Once people are aware of financial instruments, however, social interaction and caste affiliation do not seem to have a very strong influence on actual investment behavior. Hence, financial literacy education of backward castes may improve their savings decisions by lifting the limitations imposed by financial literacy.

Table 3.4.: Baseline Results: Awareness of Financial Instruments

	Shares (1)	Bonds (2)	Mutual Funds (3)	Chit Funds (4)	Group Savings (5)
Savings Decisions - Consultancy					
Friends and peer group	0.0477***	0.0397***	0.0271***	0.0618***	0.0313***
	(0.0078)	(0.0067)	(0.0055)	(0.0086)	(0.0075)
Professionals	0.0569***	0.0609***	0.0378***	0.105***	0.0810***
	(0.0118)	(0.0107)	(0.0086)	(0.0129)	(0.0117)
Others	0.00510	0.0383**	0.0135	0.0881***	0.109***
	(0.0191)	(0.0183)	(0.0139)	(0.0229)	(0.0209)
Regional Characteristics					
Rural	-0.0694***	-0.0573***	-0.0600***	-0.0780***	0.0245***
	(0.0057)	(0.0049)	(0.0040)	(0.0066)	(0.0058)
Fraction of backward caste (state level)	-0.0039***	-0.0030***	-0.0020***	-0.0075***	-0.0010***
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)
Illiteracy rate (state level)	-0-.00232***	-0.0018***	-0.0021***	-0.0108***	-0.0014***
	(0.0002)	(0.0002)	(0.0001)	(0.0003)	(0.0002)
Personal Characteristics					
backward caste	-0.0299***	-0.0259***	-0.0096**	-0.0136*	-0.0212***
	(0.0066)	(0.0056)	(0.0047)	(0.0075)	(0.0064)
Female	-0.0389***	-0.0095	-0.0096	-0.00521	0.0258***
	(0.0091)	(0.0082)	(0.0064)	(0.0110)	(0.0096)
Married	-0.0021	0.0024	0.0064	0.0190**	0.0268***
	(0.0082)	(0.0070)	(0.0055)	(0.0092)	(0.0078)
Age	0.0016***	0.0017***	0.0013***	0.0003	-0.0002
	(0.0002)	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Savings	0.0075***	0.0006	0.0056***	-0.0098***	-0.0090***
	(0.0021)	(0.0018)	(0.0014)	(0.0024)	(0.0020)
Risk Attitude	0.0266***	-0.0064	0.0153***	-0.0064	-0.0320***
	(0.0062)	(0.0055)	(0.0042)	(0.0074)	(0.0064)
Education					
Literate no schooling	0.0935***	0.0354	0.0403*	-0.0145	-0.0525***
	(0.0296)	(0.0245)	(0.0239)	(0.0221)	(0.0182)
Less than primary	0.0934***	0.0070	0.0145	-0.0402**	-0.0081
	(0.0227)	(0.0186)	(0.0173)	(0.0172)	(0.0148)
Primary school	0.142***	0.0359**	0.0315**	0.00759	-0.0133
	(0.0189)	(0.0152)	(0.0146)	(0.0140)	(0.0118)
Middle school	0.170***	0.0642***	0.0507***	0.0200	-0.0174
	(0.0174)	(0.0145)	(0.0138)	(0.0132)	(0.0110)
High school	0.192***	0.0809***	0.0552***	0.0434***	-0.0231**
	(0.0177)	(0.0150)	(0.0139)	(0.0141)	(0.0116)
Higher Secondary	0.265***	0.139***	0.104***	0.0148	-0.0219
	(0.0209)	(0.0188)	(0.0182)	(0.0164)	(0.0134)
Technical Diploma	0.355***	0.261***	0.191***	0.105***	0.0266
	(0.0296)	(0.0302)	(0.0294)	(0.0277)	(0.0229)
Graduate	0.373***	0.241***	0.197***	0.0770***	0.0041
	(0.0211)	(0.0211)	(0.0217)	(0.0175)	(0.0145)
Post Graduate	0.387***	0.298***	0.292***	0.136***	0.0423*
	(0.0296)	(0.0311)	(0.0329)	(0.0281)	(0.0234)
Professional Degree	0.326***	0.260***	0.215***	0.0588**	0.0343
	(0.0276)	(0.0279)	(0.0282)	(0.0244)	(0.0210)
Knowledge English	0.131***	0.0990***	0.0895***	0.0596***	0.0486***
	(0.0074)	(0.0065)	(0.0056)	(0.0088)	(0.0076)
Inflation Knowledge	0.125***	0.131***	0.111***	0.0892***	0.0997***
	(0.0076)	(0.0070)	(0.0060)	(0.0085)	(0.0076)
Information Sources					
Daily use Newspaper Interned	0.114***	0.119***	0.0838***	0.120***	0.0848***
	(0.0086)	(0.0077)	(0.0066)	(0.0097)	(0.0085)
Irregular use Newspaper Internet	0.0579***	0.0404***	0.0345***	0.0310***	0.0311***
	(0.0083)	(0.0074)	(0.0063)	(0.0091)	(0.0079)
Daily use Radio TV	0.0736***	0.0611***	0.0333***	0.0935***	0.0705***
	(0.0068)	(0.0059)	(0.0050)	(0.0077)	(0.0065)
Irregular use Radio TV	0.0012	-0.0066	0.0056	0.0131*	0.0190***
	(0.0061)	(0.0051)	(0.0042)	(0.0071)	(0.0061)
McFadden's R^2	0.223	0.251	0.269	0.143	0.050

Table 3.4 reports the marginal effects of the explanatory variables on the probabilities of being aware of shares, bonds, mutual funds, chit funds, and group savings. For binary coded variables, marginal effects express the impact of a discrete change of the variable from 0 to 1.The dependent variables take on the value one if respondents declare that they are aware of the respective financial instrument and zero otherwise. Only those individuals are considered who report that they never invested in the respective financial instrument.Each regression is based on 26,422 observations. Only those individuals are considered who report that they never invested in the respective financial instrument. Robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

Table 3.5.: Awareness of Financial Instruments and Interactions

	Shares (1)	Bonds (2)	Mutual Funds (3)	Chit Funds (4)	Group Savings (5)
Main Variables					
Backward caste	-.0497***	-0.039***	-0.023***	-0.054***	-0.027***
	(0.006)	(0.005)	(0.004)	(0.007)	(0.006)
Friends and peer group	0.058***	0.054***	0.030***	0.060***	0.019**
	(0.008)	(0.007)	(0.005)	(0.008)	(0.007)
High share of backward caste*(state level)	-0.090***	-0.082***	-0.041***	-0.100***	0.008
	(0.006)	(0.005)	(0.004)	(0.007)	(0.006)
Pairwise Interaction					
Backward caste ∗ friends	0.030	0.026	0.007	0.013	0.001
	(0.019)	(0.019)	(0.013)	(0.021)	(0.018)
Backward caste ∗ high share of backward caste	-0.095***	-0.0485***	-0.044***	-0.121***	-0.018
	(0.012)	(0.012)	(0.008)	(0.015)	(0 .012)
High share of backward caste ∗ friends	-0.004	-0.0297**	-0.005	0.029*	0.103***
	(0.015)	(0.013)	(0.010)	(0.017)	(0.015)
Triple Interaction					
Backward caste ∗ high share of backward caste	-0.058*	-0.084**	0.010	-0.057	-0.058*
∗ friends	(0.034)	(0.029)	(0.024)	(0.038)	(0.034)

Table 3.5 reports the marginal effects of our key dummy variables (backward caste, friends, and high share of backward castes at the state-level) and their pairwise and triple interactions. The dummy variable reflecting a high share of backward castes at the state-level takes on the value one if a respondent lives in an Indian state where the share of backward castes in total population exceeds the average share of all Indian states. For binary coded variables, marginal effects express the impact of a discrete change of the variable from 0 to 1. The dependent variables take on the value one if respondents declare that they are aware of the respective financial instrument and zero otherwise. The sample comprises the respondents who are head of the household and data are obtained from the National Data Survey on Saving Patterns of Indians conducted between 2004 and 2005. Each regression is based on 26,409 observations. Only those individuals are considered who report that they never invested in the respective financial instrument. Although not reported here, all control variables are included into the probit regressions. Robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

Table 3.6.: Baseline Results: Investment in Financial Instruments

	Shares (1)	Bonds (2)	Mutual Funds (3)	Chit Funds (4)	Group Savings (5)
Savings Decision - Consultancy					
Friends and peer group	0.1523*	0.0020	0.0015	0.0187**	0.0146**
	(0.0832)	(0.0028)	(0.0017)	(0.0075)	(0.0065)
Professionals	0.0988	-0.0024	0.0060	-0.0064	0.0167*
	(0.123)	(0.00331)	(0.00401)	(0.00973)	(0.0086)
Others	-0.137	0.0028	n.a.	0.0876***	0.0253*
	(0.0053)	(0.0067)	n.a.	(0.0212)	(0.014)
Regional Characteristics					
Rural	-0.0028	0.0018	-0.0016	0.0058	0.0433***
	(0.0023)	(0.0027)	(0.0012)	(0.0058)	(0.0097)
Fraction of backward caste (state level)	0.0014	-0.0002*	-0.0002***	-0.0032***	-0.0000
	(0.003)	(9.49e-0)	(6.40e-0)	(0.0004)	(0.0001)
GNP (state level)	0.294***	-0.0047**	-0.0005	-0.0399***	-0.0406***
	(0.105)	(0.0028)	(0.0012)	(0.0077)	(0.0097)
Personal Characteristics					
backward caste	-0.0014	-0.0031	-0.0015	-0.0364***	0.0177***
	(0.0031)	(0.0025)	(0.0014)	(0.0060)	(0.0058)
Female	-0.0564	0.0037	-0.0028**	0.0130	0.108***
	(0.193)	(0.0047)	(0.0011)	(0.0097)	(0.0111)
Married	0.188	0.0000	0.0009	0.0059	0.0127**
	(0.132)	(0.0037)	(0.0017)	(0.0078)	(0.0533)
Age	0.011***	0.0004***	4.39e-05	-0.0014***	0.0128**
	(0.0038)	(0.0001)	(5.74e-0)	(0.0002)	(0.0053)
Savings	0.110***	0.0036***	0.0012***	0.0007	-0.0005***
	(0.0275)	(0.0008)	(0.0004)	(0.0019)	(0.0002)
Risk Attitude	-0.366***	-0.0021	0.0005	0.0050	-0.0011
	(0.0715)	(0.0024)	(0.0012)	(0.0058)	(0.0015)
Education					
Literate no schooling	n.a.	n.a.	n.a.	-0.0347**	0.0102**
	n.a.	n.a.	(0.0168)	(0.0047)	
Less than primary	0.0781	0.0051	n.a.	0.0155	0.0113
	(0.371)	(0.0195)	n.a.	(0.0177)	(0.0154)
Primary school	-0.227	-0.0012	0.846**	-0.0258**	-0.0211***
	(0.355)	(0.0106)	(0.349)	(0.0105)	(0.0064)
Middle school	-0.156	0.0003	0.698	-0.0336***	-0.0158***
	(0.322)	(0.0111)	(0.470)	(0.0098)	(0.0061)
High school	-0.133	-0.00471	0.532	-0.0516***	-0.0246***
	(0.312)	(0.00809)	(0.470)	(0.0098)	(0.0054)
Higher Secondary	0.0920	-0.0022	0.601	-0.0678***	-0.0352***
	(0.319)	(0.0093)	(0.481)	(0.0081)	(0.0057)
Technical Diploma	0.187	0.0048	0.750*	-0.0478***	-0.0346***
	(0.339)	(0.0156)	(0.443)	(0.0121)	(0.0054)
Graduate	0.0119	-0.0042	0.428	-0.0805***	-0.0227**
	(0.321)	(0.0090)	(0.406)	(0.0080)	(0.0092)
Post Graduate	0.210	0.0004	0.791**	-0.0681***	-0.0396***
	(0.341)	(0.0116)	(0.396)	(0.0089)	(0.0056)
Professional Degree	-0.0173	0.0002	0.769*	-0.0652***	-0.0374***
	(0.343)	(0.0113)	(0.413)	(0.0089)	(0.0054)
Knowledge English	-0.173	0.0054**	0.0032***	0.0176**	-0.0384***
	(0.110)	(0.0026)	(0.0010)	(0.0073)	(0.0048)
Inflation Knowledge	0.325***	0.0067***	0.0026**	0.0129*	-0.0002
	(0.0702)	(0.0023)	(0.0012)	(0.0066)	(0.0065)
Information sources					
Daily use Newspaper Internet	0.138	0.0036	0.0012	0.0071	0.0089*
	(0.129)	(0.0029)	(0.0020)	(0.0087)	(0.0054)
Irregular use Newspaper Internet	-0.0524	0.0027	-0.0018	0.0020	-0.0179**
	(0.110)	(0.0029)	(0.0012)	(0.0081)	(0.0072)
Daily use Radio TV	-0.136	0.0051*	-0.0059	0.0387***	0.0001
	(0.114)	(0.0029)	(0.0039)	(0.0064)	(0.0060)
Irregular use Radio TV	0.0566	-0.0040*	-0.0008	0.0185***	-0.0020
	(0.0773)	(0.0021)	(0.0011)	(0.0062)	(0.0056)
Observations	8114	6438	4843	11914	8151
McFadden's R^2	0.094	0.093	0.105	0.041	0.180

Table 3.6 reports the marginal effects of the explanatory variables on the probabilities of having invested in shares, bonds, mutual funds, chit funds and group savings. For binary coded variables, marginal effects express the impact of a discrete change of the variable from 0 to 1. The dependent variables take on the value one if respondents declare that they are aware of the respective financial instrument and zero otherwise. Only those individuals are considered who declare that they are aware of the respective financial instrument. Robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

Table 3.7.: Investment in Financial Instruments and Interactions

	Shares (1)	Chit Funds (2)	Group Savings (3)
Main Variables			
Backward caste	-0.002	-0.037***	0.019**
	(0.002)	(0.006)	(0.006)
Friends and peer group	0.004	0.015**	0.014**
	(0.003)	(0.007)	(0.007)
High share of backward caste*(state level)	-0.009***	0.010	0.017**
	(0.003)	(0.012)	(0.008)
Pairwise Interaction			
Backward caste ∗ friends	-0.004	-0.026	0.013
	(0.007)	(0.016)	(0.019)
Backward caste ∗ high share of backward caste	0.001	0.023	-0.016
	(0.012)	(0.016)	(0.013)
High share of backward caste ∗ friends	0.009	-0.033*	-0.012
	(0.006)	(0.017)	(0.015)
Triple Interaction			
Backward caste ∗ High share of backward caste	0.014	0.066*	-0.003
∗ friends	(0.014)	(0.039)	(0 .035)

Table 3.7 reports the marginal effects of our key dummy variables (backward caste, friends, and high share of backward castes at the state-level) and their pairwise and triple interactions. The dummy variable reflecting a high share of backward castes at the state-level takes on the value one if a respondent lives in an Indian state where the share of backward castes in total population exceeds the average share of all Indian states. For binary coded variables, marginal effects express the impact of a discrete change of the variable from 0 to 1. The dependent variables take on the value one if respondents declare that they invested in the respective financial instrument and zero otherwise. In pairwise and triple interactions there is no outcome for investment in bonds and mutual funds due to insufficient observations. Only those individuals are considered who declare that they are aware of the respective financial instrument.Although not reported here, all control variables are included into the probit regression. Robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

4. Trusting Financial Institutions: Out of Reach, out of Trust?

This paper empirically investigates the relationship between individual trust in financial institutions and individual access to these institutions. Based on a large-scale survey of savings patterns of Indians, we find that individuals reporting that they do not have access to certain financial institutions within a commutable distance of one day are less likely to trust these institutions with their money. Moreover, we find that this relationship holds for different banks and financial institutions offering services in low-income areas and that differences in trust can be explained to some extent by differences in individual access.

4.1. Introduction

Recent studies show that consumer trust still has an impact on the economy and on the development of financial markets as potential driver of economic growth (Guiso et al., 2004, 2008; Dearmon and Grier, 2009; Zak and Knack, 2001). It is a recent phenomenon that financial institutions have started to advertise their trustworthiness which shows the awareness that trust is a major factor when it comes to motivating the investment decision of a potential customer. Since future returns of a planned investment are often uncertain to some extent, trust in the investment or the financial institution is a prerequisite of the investment (Guiso et al., 2008). Hence, knowing about the drivers of trust in a financial institution is very important in order to increase financial market participation of individuals. This however is particularly relevant in developing economies where financial market participation is very low (Honohan, 2008; Gine, 2010).

For instance, merely 40 percent of Indian households in the year 2006, reported having a savings account while the number of bank branches in India has increased remarkably since 1991 (Basu, 2006). With a population of over one billion and a large pool of potential investors, India's financial market offers a strong development potential, and trust in financial institutions is becoming more important for financial institutions as well as for policy makers.

Although trust has been investigated in the context of financial market development (Guiso et al., 2008; Zak and Knack, 2001) little is known about the determinants of the investors trust in a financial institution. While some studies show that individuals, who are trusting in general, are more likely to make an investment less attention has been paid on how trust in a financial institution can be established. The puzzle of trust, and what trust survey questions capture is of high interest and widely discussed in the literature (Sapienza et al., 2013). However, trust that an investor puts in a planned investment might strongly differ from his trust in a more general context.

In order to minimize the risk of a negative outcome of an investment, control mechanisms like contracts, compliance, or legal frameworks exist. Thus, the need for trust arises whenever the individual has to make a decision and perceives the situation as risky (Mayer et al., 1995; Gambetta, 1988). In emerging economies however, control mechanism are often incomplete, unreliable or even nonexistent. Therefore, trust in a financial institution in a developing country might be even more relevant in order to promote an investment, than in developed economies where sound control mechanisms exist. In addition, in developing economies a loss of money might indicate for many people severe implications for their economic well being. Hence, the perceived risk might vary for different investment alternatives and financial institutions that offer financial services. Individuals might stay

away from formal investments if their mistrust is high, or they do not participate in the financial market at all, but rather choose informal investments which are often insecure alternatives but based on reputation and highly trusted relationships (Allen et al., 2012). A low level of trust in financial institutions might explain why financial market participation is low among the general population despite many efforts and policies aiming at increasing private household investments in developing economies (Honohan, 2008).

We investigate individuals' trust in different financial institutions in India using a large and unique dataset, the National Data Survey on Saving Patterns of Indians (NDSSP). In doing so, this paper identifies different determinants of trust in financial institutions like access to the financial institution, the consultancy of a bank advisor, determinants of education or use of mass media sources. It further shows that, in particular, physical access to a financial institution seems to be very important for establishing trust. This result holds for the different types of financial institutions considered. Moreover, we show that trust varies between different financial institutions what can be explained to some extend by a variation in access to these financial institutions. We explain our results as follows: individuals who have access to a financial institution are better able to observe the counterpart and can thereby reduce the risk of making an investment decision which might lead to a bad outcome. Our explanation of these results is in line with the one by Guiso et al. (2008) who show in their theoretical model that the investor tries to assess the subjective probability that a negative event might occur by observing the investment.

This explanation is supported by further results of our empirical analyses where we show that individuals with different levels of wealth also differ in their level of trust when access is given. Physical access seems to be particularly important in order to establish trust in a financial institution for individuals with a low investment potential. For individuals with low levels of wealth, the perceived risk might be increased because losing the investment will hit them harder than others who possess more wealth and can better outweigh the losses. We are able to rule out alternative explanations e.g. that our measure of access employed reflects the information advantage the investor has because he lives close to the investment (Van Nieuwerburgh and Veldkamp, 2009). Our results show that Indian households who possess positive savings that they could invest do not necessarily live close to financial institutions. In addition to that, our results are robust even if we control for a variety of other factors like income, the number of bank branches per state, GDP per state, and other determinants that might influence trust in a financial institution. Moreover, we control for the average individual propensity to trust in general in financial institutions. This is particularly important because individuals might differ in their general willingness to trust financial institutions in a much broader sense.

This paper makes several relevant contributions. First, we investigate the subjective trust a potential investor has in different financial institutions in India, whereas most studies employ a general measure of trust obtained from the World Values Survey (WVS) or the General Social Survey (GSS) question where the respondent was asked "Generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people?" (Guiso et al., 2008; La Porta et al., 1997). A recent study by Sapienza et al. (2013) provides evidence that it is not entirely clear what this question captures and how results can be interpreted properly. Hence, we are in need of new trust measures when investigating trust in the context of the financial market. Our data provides a unique trust measure where the respondent was asked "Would you trust this financial institution with your money?" This measure is very precise and differs from the commonly used general trust measurement. Second, most studies investigate the role of trust on the decision to invest and show a positive relationship (Guiso et al., 2008; La Porta et al., 1997), whereas little is known about the drivers of trust as precondition of investing. Third, our data allows us to investigate trust for different types of financial institutions in India. Further, investigating trust in financial institutions in India, allows us to learn about relevant determinants and to draw important conclusions for financial market participation of private households in an emerging economy. In order to learn about the reasons why individuals do not invest their money at a bank or another financial institution, we have to take a look at those individuals without current investments. This is particularly relevant to take into account potential endogeneity issues resulting from current investment experiences. We therefore, employ information about 40,000 respondents and 7,300 who do not possess a savings account at any financial institution. Finally, investigating customer trust in a bank or another financial institution is new, and has not been analyzed in the literature in much detail. Whereas most studies analyze the importance of trust that a bank puts in the potential client little is known about the other direction.

However, it is not only a relevant question for policy makers but also for banks and other financial institutions, why do some individuals trust in financial institutions while others do not? Adding knowledge about drivers of trust and which channels matter in order to establish trust helps to answer the relevant question how policies may enhance trust in financial institutions among the general population in developing countries in order to increase financial market participation.

This paper proceeds as follows. The next section discusses the conceptual framework and derives hypotheses. Section 3 describes the data source and the measurement of variables. Descriptive statistics and the results of the econometric analysis are presented in Section 4. Section 5 provides a discussion and concludes.

4.2. Trusting Financial Institutions: Conceptual Framework

The economic decision to make an investment requires a certain level of trust in the financial institution and each individuals' perception of trust might be different. This section starts to explain the concept of trust, its relevance for financial market participation of individuals, and discusses to which extend the availability of access to a financial institution is relevant for building trust. It concludes with hypotheses about the effects of financial access on trust in different types of financial institutions in the context of the Indian financial market.

4.2.1. The Need for Trust in Financial Institutions

The topic of trust has been widely investigated in the literature and employed for different settings and research fields. Trust, however is a complex issue that might vary in different situations, with different counterparts, and among individuals. Can we therefore employ a general definition of trust in a setting of financial market participation of households?

In the most broad and common definition, Gambetta (1988, p. 216), defines trust as *"[...] the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action that is beneficial (...) is high enough to consider engaging in some form of cooperation with him."* It is however, common to interpret trust as some sort of belief an individual has which is measured as a probability (Sapienza et al., 2013; Guiso et al., 2008; Berg et al., 1995). Sapienza et al. (2013) for instance, introduce a modified trust game which was first used by Berg et al. (1995) and show that when varying the setting of the game outcomes differ remarkably. In particular, they show that trust is affected as soon as the investment amount increases. Smaller amounts of money used in the trust game seem not to whip an individuals trust whereas higher amounts point to some sort of trustful behavior of the participants. This, might indicate that as soon as the situation of risk increases, in this case in losing a higher amount of money, trust comes into the game (Sapienza et al., 2013). Studies dealing with risk and trust point to a coherent relationship between both determinants (Schechter, 2007).

Mayer et al. (1995), for instance argue that trust arises in a situation where the trustor has something to loose. This interpretation is related to the definition by Gambetta (1988) but extends it by the awareness of the individual of making oneself vulnerable. Therefore, Mayer et al. (1995) describe trust as the *willingness*

to take risks and not risk by itself in terms of a probability. The willingness to take a risk is increased when the perceived risk is low, when e.g. control mechanisms exist that prevent a negative outcome to some extend. Therefore, risk-perception is individual- and situation specific, and indicates that trust varies depending on the situation in which trust is needed. Although, the trust model by Mayer et al. (1995) describes a situation of interpersonal trust, it is applicable to the relationship between individuals and financial institutions. An individuals' decision to invest money at a bank or at an other financial institution is a decision under risk that the investor might be limited in the further disposal of his money. Hence, the investors trust in a financial institution is the willingness to make the investment. Therefore, it is important to know about the different channels through which trust can be established in order to encourage individuals to invest.

H1: Trust in a financial institution varies for different types of financial institutions.

4.2.2. Determinants of Trust and Financial Market Participation

Studies investigating financial market participation show that some determinants are highly relevant in order to promote the investment decision of individuals and distinguish between the subjective characteristics of the investor and objective characteristics of the financial system (Guiso et al., 2008). Subjective characteristics, are for instance the financial knowledge of the investor, whether he is social and likes to interact with others, his or her cultural beliefs or the amount of social capital (Lusardi et al., 2011; Hong et al., 2004; Guiso et al., 2004) whereas objective characteristics, on the other hand are e.g. investor protection, the legal framework or the existing number of bank branches in a financial market (La Porta et al., 1997; Zak and Knack, 2001). Theoretical trust-models show that these subjective and objective characteristics first affect the risk perception of an individual before he decides whether to make a decision or not (Mayer et al., 1995; Gambetta, 1988; Luhmann, 1988). Thus, first the investors risk perception of the planed investment is affected and thereby the individuals level of trust. Then, secondly this led the investor to decide whether to make the investment or not, which is the willingness to take the risk of the investment. Therefore, subjective as well as objective characteristics affect the investors risk-perception of the planed investment than the direct act of investment by itself.

Beyond the personal characteristics of the investor and the characteristics of the financial system that might influence the investors risk-perception of a planed investment Ivkovic and Weisbenner (2005) for instance, show that investors have a

stronger preference for local investments by ruling out that this mainly results from the availability of better information. Hence, being located close to the investment seems to reduce the investors risk-perception and increases his trust as well. Guiso et al. (2008) show in their theoretical trust model of financial market participation that observing the investment in order to get an idea about the distribution of the payoffs is highly important for establishing trust.

They define trust as the probability individuals attribute to the possibility of being cheated, and argue, that by observing the investment the investor tries to assess the subjective probability that a negative event might occur and define its complementary probability as the amount of trust the investor has in a risky investment. The level of trust described by Guiso et al. (2008) is thus a composition of different factors affecting the decision for the investment and some sort of self-assessed risk perception that results from observing the investment. This, however, points to the relevance of access for establishing trust in an investment or a financial institution. Hence we argue, that the likelihood to trust a financial institution is influenced by different determinants and in particular access to this institution.

H2: Having access to a financial institution is positively related to trust this financial institution with money.

4.2.3. On the Link Between Trust and Financial Access

Existing studies show that investors who are located close to their investment, tend to buy and hold the shares of companies, instead of taking advantage of their superior information and selling them when it seems appropriate. This thereby, points to the relevance of geographic proximity for establishing trust in a certain investment (Huberman, 2001; Guiso et al., 2008; Ivkovic and Weisbenner, 2005). As pointed out by Guiso et al. (2008), the better the investor is able to assess the true distribution of returns of the investment at a bank or any other financial institution through observation of the bank or the bank advisor, the more he will be willing to trust because the perceived risk that the investor will loose his investment decreases. The opposite is possible if the investor observes that the bank cheats and he might loose his entire money when he decides to invest. In this case the investor will not invest at all. Bridging physical distances between the investor and the investment is not very difficult today because access can be provided through different ways. For instance, modern communication technologies like the Internet can bridge physical distances and enable investors to observe and to assess the future outcomes of a planed investment. One might therefore suggest that trust is more easily developed when the investor and the bank or the financial institution are closely located or at least when larger distances can be

easily bridged. If, however the financial institution is not observable, the investor will only invest if other determinants are sufficiently strong to enhance trust and motivate the investment. Another possibility might be that the perceived risk of an investment is particularly low, e.g. if the investor is able to draw inferences from prior experiences or the investment is known as safely.

Thus, there are two effects that occur, when the investors location is close to the financial institution. First, the investors' perceived risk of an investment is decreased because of different subjective as well as objective characteristics but also through observing the investment. In doing so the investor can secondly, assess the probability that a bad outcome might occur and thereby increase or decrease the willingness to take the risk. Thus, assessing the outcome distribution of an investment by observing it might amplify an investors risk-perception in addition to other channels through which trust is affected.

Therefore, we argue that access is more relevant when the perceived risk is high (e.g. when the financial institution is less common and thus, the risk-perception of an investment is increased).[15]

H3: Access within a commutable distance of one day is more relevant for trusting group savings, and cooperative societies than for trusting a national bank with money.

4.2.4. Financial Institutions in India

In an emerging economy like India, regions are vast and financial institutions are often not located close to potential investors. On the other hand, many individuals' are in use of modern communication technologies like the mobile phone or Internet, which might help to bridge larger distances. Moreover, the number of financial branches has increased remarkably after financial market liberalization in 1991 and led different types of financial institutions compete at the financial market. India provides therefore a variety of banks and other financial institutions, of which some exist over a long period like the Indian national bank, whereas others operate only a few years in the Indian financial market. One might expect, therefore that access to national banks does very little to enhance trust in this financial institution, whereas it might be more relevant for establishing trust in other banks which emerged only few years ago. Moreover incomes of many Indians increased over the past years and individuals' seek for adequate investment options. However, it seems that the demand for financial investments among private households lacks behind. Studies show that the demand for financial services

[15] For instance the share of individuals in our sample who state that they do not know about a cooperative society and group savings is much higher, than for national banks.

is still very low in India as well as in many other emerging economies (Basu, 2006). Therefore, a lack of trust among potential investors in financial institutions might be a relevant issue that hampers financial market participation among Indians. Many developing economies experienced radical changes in their financial markets due to liberalization and the appearance of new financial products. The results of this study however, might therefore be applicable in a much broader sense for other developing economies where the demand for financial products is low. India is therefore an excellent case to study the concept of trust in financial institutions and the different channels through which trust can be affected in particular the effect of access. We expect that the effect of access on trust is lowest for national banks because they are wide spread in India and seen as very trustful among Indians.

H4: The positive effect of access on trusting a financial institution is lowest for national banks compared to other financial institutions.

4.3. Data and Descriptive Statistics

4.3.1. The Sample

The dataset used in this paper is the National Data Survey on Saving Patterns of Indians (NDSSP), which was conducted by AC Nielsen/Org-Marg on behalf of the Indian Ministry of Finance in 2004/2005 in India. The NDSSP is an overall Indian survey and provides, therefore information for 28 Indian states and covers 40,862 families and about 211,000 individuals. The villages, where the survey was conducted were obtained randomly. The selection of the households interviewed was made as follows: For all villages, the field team divided each village into four equal segments where two of the four were selected to make the interviews. The required number of household was selected randomly. Although each household was asked to provide information on all its members (e.g. demographics, education), only one earning adult member from each family was chosen to answer a detailed questionnaire. We restrict our sample to respondents who are head of the household and who can therefore be expected to be responsible for financial decisions. The data further provides information about respondents' age, caste affiliation, education, level of trust in different financial institutions, information sources used and place of residence (urban or rural area, state). The survey provides further rich information about the individuals' financial attitude and knowledge (see e.g. Bönte and Filipiak (2012)), and allows us to capture the differences in risk aversion using a lottery question in order to control for the average trust attitude of a respondent.

Our final sample consists of 30.051 observations. As some of our empirical analyses are based on those individuals who do not possess a savings account the sample is reduced to 7.310 observations.

4.3.2. Measurement of Variables

Dependent Variables

Trust is our dependent variable and is measured as follows. The respondent was asked for different types of financial institutions about her level of trust, where we for our purpose consider trust in national banks, cooperative banks, cooperative societies and group savings.[16] The former are financial institutions which are very well known and popular among the general population in India, whereas the latter two emerged more in the past decade. We expect that an individuals risk-perception of these financial institutions differs. Since, the respondent was asked for all financial institutions about her trust, we are able to capture these differences. It reflects thereby the willingness to take the risk of making an investment in the corresponding financial institution. The respondent could choose between five possible answers ranking from one to five, being: *1. Yes, I would definitely trust them with my money, 2. I might trust them with my money, 3. I would not like to trust them with my money, 4. I would definitely not trust them with my money, and 5. Don't know about this type of institution.* The dependent variable takes on the value one if the respondent opts for the first and second answer, and becomes zero otherwise. Respondents who state that they do not know about the respective financial institution are excluded. Our dependent variable is thus very a very detailed measure which allows us to capture the respondents subjective level of trust in a financial institution.

Explanatory Variables

In order to investigate which channels matter for trusting a financial institution with money, we make use of a substantial number of explanatory variables. In doing so, we take into account the following determinants: *Access* to different financial institutions, *regional determinants* such as the number of bank branches per state and the GDP per state, which are obtained from official statistics of the Reserve Bank of India (RBI), different *information channels* and its frequency of use and information about *social interaction*. Moreover, we are able to control for the respondents *risk-attitude* using a lottery question and employ a further measure

[16] Group savings are mostly used by the so called Self Help Groups (SHGs) and promoted by government agencies and NGO's

of *general trust* in financial institutions. This is particularly important because it enables us to identify trust in a particular financial institution as the respondents' specific-risk perception that arises when it comes to the hypothetical decision to make an investment. In addition we make use of some *general characteristics* of the respondent e.g. different education levels, knowledge about the current rate of inflation, income, occupation and other characteristics like caste affiliation. Financial Access: The respondent was asked for national banks, cooperative banks, cooperative societies and group savings: *"Do you have access within a commutable distance of one day to this institution?"* The variable takes on the value one if the respondent answers with *yes* and zero if otherwise. While most studies often use the distance in kilometers or miles to describe the number of bank branches per region (Beck et al., 2007) in oder to measure financial access it is however, relevant to consider the individual possibility of reaching a financial institution as well. Our variable financial access captures such individual differences. Two neighbors for instance, might live in the same distance to a financial institution but differ in their mobility. Considering this, it is particularly important to investigate an emerging economy where regions are vast and public transportation are often underdeveloped. Number of Banks: In addition we use the number of banks at the state-level in 2004 - 2005, the most common measure for financial access in the literature. This variable takes into account the number of bank branches per Indian state but we do not distinguish between branches of different financial institutions. However, there might be an over representation of national as well as cooperative banks over other financial institutions. Furthermore, we know if the respondent lives in a rural or urban area. In order to control for further regional characteristics we take into account the Gross Domestic Product per capita at the state level *GDP*.[17] Use of Information Sources: Many studies provide empirical evidence that the availability of information might affect trust positively (Guiso et al., 2008; James, 2002; Dearmon and Grier, 2009). It is true, that geographical distances can be bridged by information provided and thereby, reduce information and transaction costs (Bogan, 2008). Further, information can diffuse via word-of-mouth communication and through social interaction or the use of modern communication technologies. Hence, it is important to control for channels through which financial knowledge can be provided e.g. TV, radio, newspaper or the Internet. The NDSSP dataset comprises information about individuals' use of information channels and its frequency of use. The respondent was asked whether he uses these information sources during the last month: not at all, irregular, which means a usage of once a week or less, or regularly which means that the respondent uses these information channels every day. The reference category contains

[17]The official data is obtained from the database of the Reserve Bank of India in the year 2004 - 2005. http://www.rbi.org.in/scripts/publications.aspx?publication=Annual

those respondents who state that they do not use these channels at all. Social Interaction: Trust in different financial institution might further be influenced by word-of-mouth communication via social interaction. Therefore, we take into account who talks to whom before making a savings decision. The respondent could answer that he consults his family, friends or professionals before making a savings decision.[18] Average Trust: We try to ascertain as much as possible that trust as it is used as a dependent variable in our econometric model, reflects the investors subjective trust in the corresponding financial institution. In doing so, we control for the average trust a potential investor has. We compute the mean value of trust which the respondent has in different financial institutions, omitting the financial institution considered as dependent variable and use it as an additional regressor in our analysis. The variable average trust is the mean of the respondents trust in: national banks, rural banks, foreign banks, private banks, cooperative banks, cooperative societies and group savings.

Education: The NDSSP dataset comprises information about the individuals' level of education, where the respondent can choose between twelve possible *education levels* from *illiterate* to *postgraduate and above*. For eleven education levels dummy variables are generated with the reference category *illiterate*. In India, information is not only provided in the local language but also often in English. Therefore, we use the dummy variable *English* that takes on the value one if the respondent declares that he is able to speak, read and write English, and zero if otherwise. Furthermore, the respondents' general economic interest is considered by the variable *knowledge of inflation*. The variable takes on the value one if the interviewee states that he knows what the current value of inflation is. Unfortunately, it is not possible to check for the validity of this statement, therefore this dummy variable has to be considered with caution. Risk Attitude: One might expect, for instance, that trust in financial institutions and the individuals' risk attitude are interrelated. Guiso et al. (2008) find that there is no direct link and that trust is not a proxy for low risk aversion. Nevertheless, an individual with a high risk aversion might also have a higher risk perception when it comes to the decision about investing money at a financial institution. Therefore we control for the respondents attitude towards risk using a risk-lottery-question. The interviewee has to make a hypothetical investment of 1000 Rupees (RS) and can choose between three alternatives. In the first choice either the RS 1000 may grow up to RS 2000 after one year or the investor may only get RS 500 in return. In the second choice either the money will grow up to (RS) 1200 or the investor may lose some of the money and only get RS 800 in return. In the third choice the money will only grow up to RS 1050 but without any chance of loss. The dummy variable *risk attitude* takes on the value one if the respondent opts for the third choice,

[18] Some of the explanatory variables are employed in chapter 3.

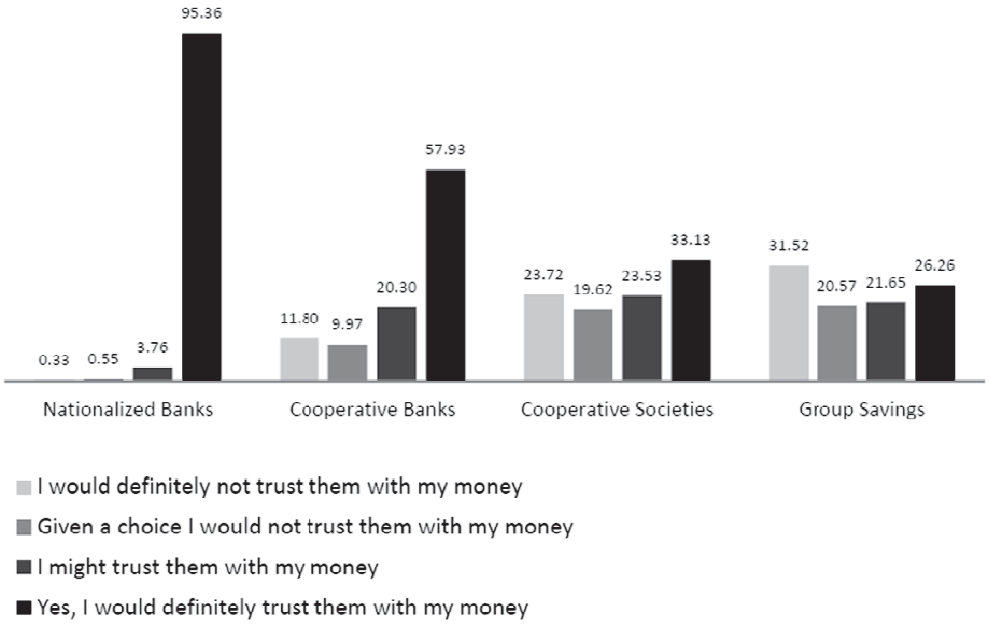
and zero if otherwise. Finally, personal characteristics like age, gender and marital status are used as further control variables. In order to control for state specific effects we make use of 28 state dummy variables.

4.3.3. Descriptive Statistics

In order to portray that trust for different financial institution varies, figure 4.1 shows the percentage shares of our sample respondent for trust in national banks, cooperative banks, cooperative societies and group savings. As already mentioned, national banks are very popular and wide spread in India. 92.4 percent, hence nearly all sample respondents, state that they would definitely trust a national bank with their money. 51 percent of the sample respondents state that they would trust a cooperative bank, 23.7 percent of the respondents trusted a cooperative society and only 13.8 percent state that they trust group savings. We used a total sample of 28.406 respondents. Those respondents who do not know about the corresponding type of financial institution are excluded. The results might further point to the assumed variation in trust the investor has for different financial institutions. However, although not reported here, we make use of a χ^2-test of proportions to test for differences in levels of trust among the considered financial institutions. In doing so, we find that the variation in trust between national banks and cooperative banks is low compared to cooperative societies and group savings but it is still significant. The largest difference in trust arises when comparing national banks to cooperative societies and group savings. Individuals tend to trust the former more often than cooperative societies or group savings.

Figure 4.1.: Trust in Financial Institutions

Figure 4.1 shows the percentaged shares of trust in different types of financial institutions in India. The respondent was asked whether he would trust this financial institution with their money and could choose for five eligible answers. All sample respondents are considered, except those who do not know about the respective financial institution.



Furthermore, we hypothesize that having access to a financial institution and trusting this institution are somehow related. Table 4.1 shows that individuals who have access say more often that they would trust this institution with their money more than individuals without available access. However, almost all respondents state that they would trust a national bank with their money, and the difference among those who have access to this financial institution and those without access is very low. 86 percent of the respondents who have access to a cooperative bank, for instance, would trust this bank with their money, whereas only 50 percent of the respondents without access to this bank state that they would trust it. Differences in trust are increasing for cooperative societies and group savings among those who have access and those who don't.

Table 4.1.: Financial Access and Trust: Means and Standard Deviations

	Financial Access			No Financial Access			Differences	
	Mean	St. Dev.	Obs.	Mean	St. Dev.	Obs.	Difference	test statistic
Trust:								
National Bank	0.993	0.083	4585	0.925	0.262	2725	-0.0675	-16.1002
Cooperative Bank	0.859	0.347	3148	0.472	0.499	4162	-0.387	-37.226
Cooperative Society	0.600	0.489	2132	0.217	0.413	5178	-0.382	-34.063
Group Savings	0.672	0.469	1445	0.082	0.240	5865	-0.5903	-62.393

Table 4.1 reports means and standard deviations for group differences between individuals having access to financial institutions and those who do not. A chi-squared tests of proportions is employed testing for group differences in trust of those respondents who have access to the corresponding financial institutions and those who do not. Considered are national banks, cooperative banks, cooperative societies and group savings. Trust is measured as dummy variable that takes on the value one if the respondent states that he or she would trust this financial institution with the own money and is zero if not. Those respondents are considered who possess savings to invest but no current savings account.

Moreover, one might argue that people with higher incomes might live closer to a bank branch or have better possibilities of access to a financial institution and that access is therefore somehow related to wealth. The number of observation in Table 4.2 is reduced because we consider only those who have some amount of savings to invest. Although we take into account respondents who have a positive investment potential individuals differ in their wealth. Some individuals might have only a small amount of savings left or in contrast may be very wealthy. In order to investigate these differences we divide our sample of non-investors into wealth quartiles. Table 4.2 reports means and standard deviations for group differences in trust between individuals who have access to a national bank, cooperative bank, cooperative society and group savings, and those who do not. Instead of income, we consider the amount the respondent is able to save after computing annual

income minus expenditures. Thus, we take into account the investment potential of the respondent. First, the respondents who belong to the first quartile with less than RS 500 (Quartile (I)) are considered. Then, respondents in the second quartile who possess between RS 500 and RS 1500 (Quartile (II)) are observed. The third subsample shows means and standard deviations for respondents whose investment potential lies in the third quartile (RS 1500 and RS 5000), (Quartile (III)). The last quartile considers respondents who belong to the top 25 percent in wealth with more than RS 5000 left as savings potential (Quartile (IV)). A χ^2 test of proportions is employed, testing for group differences in trust for different financial institutions.

As can be seen from the table, differences between individuals who have access to financial institutions and those who don't remain significant for all four wealth quartiles considered but are decreasing with the higher wealth quartiles. In the first sample for instance (Quartile (I)), the fraction of individuals saying that they would trust a national bank is 99.4 percent for those who have access to this bank and 92 percent for those without access within a commutable distance of one day. The fraction of individuals trusting a cooperative bank is 86 percent for those who have access to this financial institution and 44 percent for those who don't. With respect to cooperative societies and group savings, the fraction of individuals who state that they would trust these institutions when having access is remarkably lower compared to banks. However, remarkable differences appear when considering individuals with different income levels. People who possess higher wealth tend to trust a financial institution more often even if access is not available. Furthermore, access seems to be particularly relevant for poorer individuals in order to establish trust. For instance, the fraction of individuals who state that they trust a cooperative society is 61.5 percent for those who have access to this financial institution and 40 percent for those who don't. With respect to group savings the fraction of individuals who state that they would trust this institution is 74 percent, for those who have access and merely 6 percent for those who don't (Quartile (I)). The number of observations is reduced because the "don't know" responses are excluded. There is a strong overlap between don't know answers in the trust question and the access variable. Contingency tables are reported in Figure A1 in the Appendix.

Table 4.2.: Financial Access and Trust by Wealth: Means and Standard Deviations

	Financial Access			No Financial Access			Differences	
	Mean	St. Dev.	Obs.	Mean	St. Dev.	Obs.	Difference	test statistic
Wealth - Quartile I								
Trust:								
National Bank	0.994	0.075	710	0.920	0.271	500	-0.074	-6.8047
Cooperative Bank	0.862	0.344	495	0.434	0.496	715	-0.427	-16.604
Cooperative Society	0.615	0.486	329	0.202	0.401	881	-0.408	-14.821
Group Savings	0.740	0.439	235	0.061	0.240	975	-0.678	-32.232
Wealth - Quartile II								
Trust:								
National Bank	0.995	0.069	1424	0.937	0.242	811	-0.057	-8.414
Cooperative Bank	0.860	0.346	894	0.460	0.498	1341	-0.400	-20.858
Cooperative Society	0.561	0.496	547	0.190	0.392	1688	-0.371	-17.940
Group Savings	0.693	0.461	405	0.069	0.254	1830	-0.624	-37.600
Wealth - Quartile III								
Trust:								
National Bank	0.993	0.082	869	0.944	0.229	520	-0.048	-5.684
Cooperative Bank	0.868	0.338	591	0.497	0.500	798	-0.370	-15.555
Cooperative Society	0.602	0.489	425	0.244	0.430	964	-0.357	-13.666
Group Savings	0.653	0.476	274	0.104	0.305	1115	-0.549	-23.546
Wealth - Quartile IV								
Trust:								
National Bank	0.990	0.099	501	0.918	0.273	258	-0.071	-5.208
Cooperative Bank	0.854	0.353	426	0.579	0.494	333	-0.275	-8.928
Cooperative Society	0.622	0.485	315	0.281	0.450	444	-0.341	-9.941
Group Savings	0.546	0.498	214	0.117	0.322	545	-0.429	-13.991

Table 4.2 reports means and standard deviations for group differences between individuals having access to financial institutions and those who do not. A chi-squared tests of proportions is employed testing for group differences in trust of those respondents who have access to the corresponding financial institutions and those who do not. Considered are national banks, cooperative banks, cooperative societies and group savings. Trust is measured as dummy variable that takes on the value one if the respondent states that he or she would trust this financial institution with the own money and is zero if not. Those respondents are considered who possess savings to invest but no current savings account. Moreover, respondents are grouped into four wealth quartiles, to investigate whether differences in trust and access might differ with differences in wealth. Instead of earnings, we consider the amount the respondent dispose after computing annual income minus expenditures. Thus, we consider the amount of investment potential the respondent has and label it wealth. First, those respondents are considered who belong the first quartile with less than RS 500 (Quartile (I)). Then, respondents in the second quartile (RS 500 and RS 1500) are taken into account (Quartile (II)). The third subsample respondents whose investment potential lies in the third quartile (RS 1500 and RS 5000) are taken into account (Quartile (III)). The last quartile considers respondents who belong to the top 25 percent in wealth (RS 5000 and more) (Quartile (IV)).

In sum, we can observe that the share of individuals who state that they would trust the financial institution with their money is higher when access is available with respect to all four financial institutions considered. Since the distribution of our sample respondents with access to the different types of financial institutions considered also varies, we report the frequency distribution for the financial institutions considered in the Appendix in Figure A2. Summary statistics for all explanatory variables are reported in Table 4.3. Continuous variables are denoted with an asterisk and income, as well as GDP are given in thousand RS. As can be seen from the table, most respondents have access to national banks and cooperative banks. Among the information sources used, the regular use of radio and TV are most frequent. About 56 percent of the respondents state that they use these information sources daily. Only about 26 percent are using the Internet and newspaper in a daily frequency. Furthermore, almost 80 percent of both groups consult their family before making a savings decision. Only a very small fraction of the respondents state that they consult professionals.

Table 4.3.: Summary Statistics for Explanatory Variables

	Mean	SD	Min	Max
Financial Access				
Nationalized Bank	0.629	0.483	0	1
Cooperative Bank	0.430	0.496	0	1
Cooperative Society	0.300	0.462	0	1
Group Savings	0.200	0.413	0	1
Regional Characteristics				
Rural	0.534	0.498	0	1
GDP p.c. (state level)* ('000 of RS)	20.273	8.959	6913	49825
Numbers of banks per State*	3.893	2613	58	8657
Information Sources				
Daily Use Newspaper and Internet	0.268	0.443	0	1
Irregular Use Newspaper and Internet	0.235	0.424	0	1
Daily Use Radio and TV	0.562	0.496	0	1
Irregular Use Radio and TV	0.287	0.453	0	1
Savings Decisions - Consultancy				
Great Family	0.808	0.393	0	1
Friends and Peer Group	0.121	0.326	0	1
Professionals	0.049	0.216	0	1
Others	0.020	0.141	0	1
Personal Characteristics				
Age*	37.900	1.17	17	80
Married	0.827	0.377	0	1
Income* ('000 of RS)	5.346	2.139	-164.9	1.177.6
Female	0.134	0.341	0	1
Backward Caste	0.266	0.442	0	1
Risk Attitude	0.782	0.413	0	1
Average Trust	2.422	0.543	4	1
Self Employed	0.006	0.078	0	1
Employee	0.548	0.497	0	1
Other Worker	0.445	0.497	0	1
Education				
Education	4.157	2.465	1	11
Knowledge English	0.272	0.445	0	1
Knowledge Inflation	0.108	0.311	0	1

Table 4.3 reports summary statistics for explanatory variables used. Those respondents are considered who do not possess a savings account at present and within the past twelve months. Official data for Indian states are used to control for regional characteristics such as the number of financial institutions, the Gross Domestic Product (GDP) per capita at the state level and the number of banks per state are given in Rupees (RS). Income is computed by earnings minus expenditures and can therefore be negative. The sample consist of 7.310 respondents.

Since we make use of a number of explanatory variables, multicollinearity might be an issue. Although it is not reported here, we calculate pairwise correlation coefficients for all explanatory variables. The strongest correlation arises among variables indicating the use of mass media sources. The correlation coefficient of the regular use of radio and TV and the regular use of newspaper and the Internet is 0.379. Further variables with a modest correlation are education variables and the knowledge of the English language varying from -0.046 to 0.339. Furthermore, we check for multicollinearity among the explanatory variables by calculating variation inflation factors (VIF). These are reported in Table 4.4. The variation inflation factors range from 1.02 to 2.50, which indicates that multicollinearity is not a severe problem (O'Brian, 2007).

Table 4.4.: Variation Inflation Factors for Explanatory Variables

Explanatory Variables	VIF
Financial Access	
Access Private Bank	1.23
Rural	1.42
Banks per State	1.28
GDP per state	1.17
Personal Characteristics	
Married	1.14
Female	1.10
Backward Caste	1.09
Age	1.16
Risk Attitude	1.02
Self employed	1.11
Employee	1.10
Education	
Knowledge English	2.17
Knowledge Inflation	1.19
Consultancy	
Friends and Peer Group	1.05
Others	1.02
Professionals	1.04
Information Sources	
Daily Use Newspaper and Internet	2.50
Irregular Use Newspaper and Internet	1.59
Daily Use Radio and TV	1.34
Irregular Use Radio and TV	1.05
Mean VIF	1.36

Table 4.4 reports the variation inflation factors (VIF) for explanatory variables used in our empirical analysis. In order to compute VIF's, we conduct a linear probability model where the dependent variable is trust in cooperative banks. Although not reported education and town dummies had been included and their VIF's computed. The maximum value is 2.20. The values of the variation inflation factors are below the critical levels suggested in the literature which means that multicollinearity is not a severe problem.

Taken together, descriptive statistics indicate that individual trust varies for different financial institutions in India. Our descriptive statistics further point to the relevance of access in order to enhance trust in a financial institution. Whereas banks, particularly national banks are accessible for most people, cooperative societies and group savings are not available for many individuals. However, in a developing country like India differences in income and wealth are still very strong. We show that people who possess higher wealth tend to trust a financial institution more often even if access is not available whereas access to a financial institution seems to be particularly important for poorer individuals in order to enhance trust in a financial institution. Descriptive statistics, however, point strongly to our theoretical explanation that the risk-perception of a potential investor differs for different types of financial institutions. Thus, trust in a financial institution might be lower when the individual does not have sufficient savings to outweigh possible losses of an investment because the risk-perception is increased. Further, the investors trust seems to be higher when access to the financial institution is available, also for those investors with low levels of wealth. Hence, access might reduce the investors risk-perception and thereby increases trust in the financial institution.

Moreover, considering further channels in order to estimate the likelihood to trust a financial institution with money is very important. In our empirical analyses we emphasize the relevance of financial access when other determinants are considered through which trust in a financial institution might be influenced.

4.4. Determinants of Individual Trust in Financial Institutions

In order to investigate the determinants of the individuals trust in different financial institutions, we conduct separate probit regressions for trust in each of the financial institutions: national bank, cooperative bank, cooperative society and group savings where we distinguish between banks and financial institutions offering micro savings and financial services as a comparison. We take into account possible endogeneity issues which might result from prior investment experience, by using a smaller sample that consists of individuals who do not have a savings account.[19] This is important in order to investigate the question which channels

[19]The same regressions were conducted for the entire sample that consist of those respondents who possess a savings account at a financial institution as well as of those who do not. Moreover, we conduct the same regressions for only those who possess a savings account. We find that results do not differ significantly from the smaller sample reported here. Results can be reported upon request.

contribute to trust a financial institutions for individuals without current investments.

Information about the determinants influencing household trust in a financial institution are important to motivate investment activities of private households and potential investors particularly in emerging economies where household demand for financial services is still low.

Our dependent variables are restricted to those households who clearly state whether they would trust a financial institution with their money or not. Thus those respondents who state that they *"don't know"* a financial institution are excluded from the further analysis. However, *"don't know"* responses are common in many surveys to capture the ambivalences of the respondent, to clear cut decisions between *"yes"* and *"no"* and to capture the respondents who possibly would not answer at all (Liao, 1995). Furthermore, *"don't know"* answers can be non-randomly selected according to certain geographic and socioeconomic characteristics of the respondent (Liao, 1995). In order to analyze the effect financial access has on household trust in different financial institutions, the two-step Heckman-type selection correction method is used and the marginal effects of the means are reported. This further allows when considering ambivalence's in trust, which might be important as well while investigating the determinants of trusting a financial institution.

4.4.1. Econometric Specification

Trust in a financial institution with money can be considered a precondition of investment. We define trust as the willingness of the respondent to make an investment in the four different financial institutions considered. Treating "don't know" answers as missing data or exclude them from the analysis would lead to a loss of important information. One might further expect, that those households who are not able to give a clear statement towards trust are also those without available access to the financial institution, and therefore the sample would be nonrandom. Moreover, respondents might give a closed answer with respect to trust with "yes" or "no", even if they are rather ambivalent, because they feel bound to some unobserved reasons to give a clear statement and thus, they appear in the outcome sample.

In order to take this sample selection problem into account, and to correct for its bias, the two-step Heckman-type selection model is employed and the effect of *financial access* on the *individuals trust* in different financial institution is analyzed. Since a households' possibility to reach different financial institutions might vary

we run four different probit regressions where we distinguish between two bank types and two types of financial institutions that offer micro financial services. For instance, in the first regression the effect of *access* to a *national bank* on trusting a national bank is analyzed. We proceed in the same manner to investigate the determinants of trust in *cooperative banks*, *cooperative societies* and trust in *group savings*. The two-step Heckman procedure is preferred over the more direct Maximum Likelihood (ML) method, because the former is less sensitive to inconsistency (Greene, 2008). In the first step the following selection equation is estimated:[20]

$$KnowledgeTrust_i = \Phi(\alpha_1 + \beta_{1I_i} + \gamma_{1Bankaccess_i} + \gamma_2 x_{i_2} + \cdots + \gamma_p x_{i_p}) \qquad (4.1)$$

$KnowledgeTrust_i$ takes on the value one, if the respondents answers either "yes" or "no" to the question: *Would you trust this financial institution with your money?* and is zero for *"don't know"* responses. I is an additional variable in the selection equation to enhance identification of the model. The variable $Bankaccess$ is among the explanatory variables $x_1 - x_p$ our variable of interest. This selection equation is estimated for each corresponding outcome equation separately, as we consider trust in four different financial institutions.

In the second step, we estimate the probability to trust a financial institution with money where we investigate trust in national banks, trust in cooperative banks, trust in cooperative societies and trust in group savings. Thereby we distinguish between banks and financial institutions offering micro financial services. In each regression the financial access variable is so chosen that it fits the corresponding financial institution analyzed.

$$TrustFI_i = \Phi(a_1 + c_{1Bankaccess_i} + c_2 x_{i_2} + \cdots + c_p x_{i_p} + d_{1IMR_i}) \qquad (4.2)$$

Bankaccess is a dummy variable that denotes whether a household has access within a commutable distance of one day to the corresponding financial institution or not. Our control variables are $x_1 - x_p$ and IMR denotes the Inverse Mills Ratio. Under normality, the IMR is proportional to the hazard rates and depends only on the known parameters of equation (4.1) with $IMR(\eta) = \phi(\eta)/1 - \Phi(\eta)$ an (η) reflecting all explanatory variables considered in our selection equation.[21] As long

[20] The first stage Heckman-type regression, is repeated for each financial institution, with the financial institution corresponding financial access dummy. The inverse mills ratio (IMR) is then included as a regressor in the corresponding second stage Heckman-type equation. In the first and in the second stage the econometric model employed is the probit model.

[21] $\phi(.)$ denotes the density function and$\Phi(.)$ the cumulative distribution function of the standard normal distribution $N(0,1)$ see Greene (2008).

as the model is correctly specified, this allows us to analyze the consistent and asymptotically efficient estimates for the probability to trust a particular financial institution with money (Greene, 2008; Hussinger, 2008).

The variable that defines the exclusion restriction denotes whether a respondent belongs to a scheduled caste or scheduled tribe the so called *backward castes*. This variable can be considered as exogenous, since caste affiliation is given at birth and cannot be changed during a lifetime. In India, strong intra-caste externalities still persist and seem to influence the investment decision rather indirectly. Empirical studies show that backward castes are less aware of different financial products in India. Moreover, individuals belonging to a backward caste mainly interact with family members or friends who belong to the same caste and because of these intra-caste interactions it is less likely that they improve their financial literacy. However, differences in investment behavior among backward castes and other individuals seem to disappear once backward castes have achieved a certain level of financial knowledge about financial instruments (Bönte and Filipiak, 2012).

However, similar results can be expected with respect to trust in financial institutions. Individuals who are affiliated with a backward caste might rather tend to give a don't know response because they might not know whether a financial institution is located in a reachable distance or do not even know about a particular financial institution at all. Once awareness and further knowledge about the financial institution is achieved they do not significantly differ from other individuals belonging to other castes in their level of trust. Therefore, caste affiliation might affect the selection, but not the outcome.

In addition to backward caste individuals, females in India are also relatively uninformed about their investment opportunities (Field et al., 2010). One might expect, for instance, that women interact more often with other women than with men and therefore it is possible that similar externalities exist. Moreover, recent studies show that females are more reliable than men and might r therefore answer more often with *don't know* than men (Pruckner and Rupert, 2008).

One might suggest for instance, that females or individuals who belong to a backward caste differ in their overall level of general trust in financial institutions. Controlling for the average trust level in other financial institutions, risk behavior, social interaction, regional characteristics of the state where the respondent lives, and a variety of other factors; neither variable is significantly affecting the subjective trust in a particular financial institution.

4.4.2. Results

Table 4.5 and Table 4.6 report the selection equations. The variable that defines the exclusion restriction is *backward caste*.[22] In three of four regressions, being affiliated to a backward caste is negatively related to give a clear answer with "yes" or "no" in whether to trust this considered financial institution with money or not. Thus, individuals belonging to backward castes are more likely to give a don't know response. For instance, being affiliated to a backward caste in India is associated with a 3.8 percentage points lower probability to answer with don't know whether to trust in group savings or not. This is of particular interest, because group savings are rather targeted to low income individuals and individuals belonging to a backward caste (Bönte and Filipiak, 2012). Females have a 3.7 percentage points higher probability to give a don't know response for trusting national banks compared to men. Similar can be observed for cooperative banks and cooperative societies.

Furthermore, it is an interesting result, that the effects of *access* are rather small. In contrast the *knowledge of access* seems to be very important for knowing about whether to trust a financial institution with money or not. This, however reflects that a large fraction of individuals in our sample who give a don't know response in access also give a don't know response in trust. Moreover, households who state having access for instance, to a cooperative bank, have a 6 percentage points higher probability to answer with "yes" or "no" in whether to trust the respective bank. In contrast, knowing about the availability of a cooperative bank is associated with a 36 percentage points lower probability to give a don't know response. Similar can be seen for all four probit regressions.

Channels of Trust: National and Cooperative Banks

Table 4.7 reports the estimation results on the determinants that an individual would trust a national bank and a cooperative bank with his money. The first row shows the results corrected for possible sample selection, the second row presents the results after probit regressions without correction and the third row reports the marginal effects at means computed after probit regression. As can be seen from Table 4.7 results from the two-step Heckman procedure and probit estimations hardly differ, which might indicate that sample selection is not a severe issue.

[22] Female is included as additional regressor in the selection equations for "national bank", "cooperative bank" and "cooperative society", in the selection equation "group savings" only the dummy variable backward caste is employed, because female shows a significant effect on trust in group savings

The table shows the results for different channels through which an individuals trust in national banks and cooperative banks might be influenced. It shows different regional determinants, e.g. if the respondent has access to the corresponding institution, or the number of bank branches at the state level, as well as other channels like the use of mass media sources and indicators of social interaction. Subjective characteristics of the respondent are also considered.

The table shows that respondents who state that they have access to national banks and cooperative banks are more likely to trust these financial institutions with their money. Having access to a national bank is associated with a 1 percentage point higher probability to trust this financial institution. Respondents who have access to cooperative banks have a 15 percentage points higher probability to trust this bank with their money. Although, controlling for the average trust level of the respondent in other financial institutions, access has a positive and significant effect on trusting a national as well as a cooperative bank. Nevertheless, the effect of access to national banks is very small. The average marginal effect of one percentage point would indicate that among 100 individuals access matters for only one person in order to enhance trust in this financial institution.

The use of *information sources* like the Internet or TV does not show a significant effect on trust in national banks. Merely the irregular use of newspaper and Internet is associated with 3 percentage points lower probability to trust in a cooperative bank. However, national banks and cooperative banks are wide spread and common in India so that the additional effect of information diffusion via information sources might rather be subtle.

Furthermore, individuals who *consult professionals* like the bank advisor, are more likely to trust a national bank as well as a cooperative bank with their money. Among the personal characteristics, the results differ slightly between the two financial institutions. Income is negatively related to trusting a national bank, whereas it does not show a significant effect on trusting a cooperative bank. Further, respondents who work as employees have a lower probability of 0.2 percentage points to trust a national bank, but 2.2 percentage points higher probability to trust a cooperative banks. Moreover, being risk averse is related to 0.5 percentage points higher probability to trust a national bank and a 3 percentage points higher probability to trust cooperative banks, whereas the latter is only significant at the 10 percent level. The coefficients of the inverse mills ratios (IMRs) in Table 4.7 are insignificant for both regressions, indicating the absence of a selection problem.

The variable *average trust* is also positive and significant, which shows that those respondents who have a higher level of average trust in other financial institutions have 0.3 percentage points higher probability to trust national banks and a 13

percentage points higher probability to trust cooperative banks. Living in a region that is characterized by a higher GDP per capita, or in a region where the number of financial institutions is high, both is associated with a lower probability to trust a national bank. However, these two explanatory variables are not significant for explaining the levels of trust in a cooperative bank.

Among the personal characteristics of the respondent, it is an interesting result that individuals who are rather risk averse are more likely to trust national banks as well as cooperative banks with their money. Being risk averse is related to 0.05 percentage points higher probability to trust in national banks and 0.3 percentage points higher probability to trust in cooperative banks. Income shows a negative and significant effect for national banks but no effect for trusting cooperative societies. Thus, individuals with higher incomes are less likely to trust in national banks. In India, most individuals are employed in the public sector and some institutions are directly linked to national banks and cooperative banks. This might indicate that the effect of being employed is linked to a higher probability to trust in cooperative banks whereas the effect on national banks is negative and with 0.02 percentage point, it is very small.

In sum, Table 4.7 shows that among the different channels through which the individuals trust in national as well as in cooperative banks might be influenced some are more relevant than others. Access reflects its importance, as discussed discussed in the theoretical-section. Although, we control for some regional determinants, having access to the financial institution is related to trust this institution. The use of information sources does not show a high relevance when it comes to decision to trust a bank with money or not. However, talking to a bank advisor before making an investment decision is important in order to enhance trust. This result points first, to the relevance of getting in touch with the financial institution through an advisor, and second, through communication with the bank advisor the investor can learn about the investment and might be better be able to assess the outcome of the investment rather than when he consults friends or family. It is surprising, that the indicators that might reflect a better education level of the respondent like the knowledge of the current rate of inflation or being able to speak, read or write English are not significant for trusting a financial institution. Further personal characteristics e.g. age or being married are also not highly important in order to establish trust. On the other hand, relevant characteristics of the respondent are risk-attitude and the average trust in financial institutions.

Channels of Trust: Cooperative Societies and Self Help Groups

Table 4.8 reports the estimation results on the determinants that a household would trust a cooperative society and group savings with his money. Both financial institutions offer micro financial services and are primarily targeted to households with low incomes and individuals living in rural areas. This allows us to investigate the relevance of access on trust in other types of financial institutions. The table shows that individuals who have access to a cooperative society or to group savings within a commutable distance of one day, are more likely to trust these financial institutions with their money. Respondents with access to a cooperative society have a 20 percentage points higher probability to trust this financial institution and those who state having access to group savings have even a 43 percentage points higher probability to trust group savings. Since cooperative societies and group savings are targeted to households living in rural areas in India, it is a plausible result that the variable *rural* shows a positive and significant effect on trust, whereas living in a state with a high GDP per state is negatively related to trust group savings.

Among the *information sources* used, only the irregular use of TV and radio shows a positive and significant effect, indicating that respondents who use the radio and TV less than every day have a 9 percentage points higher probability to trust in group savings. In contrast the knowledge of English seems to be relevant for trust in cooperative societies too, whereas it does not show a significant effect for group savings. Moreover, *consulting professionals* before making a savings decision is associated with a 12 percentage points higher probability to trust in cooperative societies as well as in group savings. A higher level of *average trust* is associated with a 20 percentage points higher probability to trust in a cooperative society but with a 0.5 percentage points lower probability to trust in group savings. Again, the variable that reflects the *risk aversion* of the respondent shows a positive and significant effect of 7.2 percentage points on trusting cooperative societies. The effects of the personal characteristics vary. For instance, income is negatively related to trust in group savings whereas respondents who tend to be risk averse have a higher probability to trust in cooperative societies. Moreover, females are more likely to trust in group savings than men.

The inverse mills ratio is positively significant for trust in a cooperative society. This indicates that sample selection might be a problem. Thus, respondents who are more likely to give a "yes" or "no" answer in the selection equation, are more likely to answer with "yes" in the outcome equation. The IMR for trust in group savings, is not statistically significant.

All in all, it is a striking result that the estimated effect of access to the financial institutions considered, is positive and significant in all four regressions. The

impact of access on trusting a national bank is however, very low whereas it is stronger for trust in the other financial institutions considered, in particular for group savings. In order to control for town-fixed effects we make use of 77 town dummy variables that are included in our empirical analysis. A second interesting result, is that also the use of a professional bank advisor before the investment decision is made, is related to a higher probability of trusting the financial institutions considered. While other channels considered through which trust in a financial institution might be influenced, our results do not point to a consistent effect on trust in financial institutions in general. For instance, the knowledge of English shows merely an effect for trust in cooperative societies. Most importantly, we are able to take into account risk aversion and the average trust a respondent has in other financial institutions in order to identify the effects of access and consultancy as accurate as possible.

4.4.3. Robustness Checks

In order to check the robustness of our results additional regressions were conducted. Since we exclude a large number of observations from our empirical analyses, important information might get lost. Nevertheless, since we investigate trust in financial institutions in India, it is very unlikely, that individuals who have a savings account at a financial institutions state that they would not trust this financial institution with their money. This, problem of endogeneity arises when considering individuals who have a savings account. Therefore, our main analyses consider those respondents without current accounts at national and cooperative banks as well as with cooperative societies and group savings

First, we check the robustness of our results by estimating linear probability models on having a savings account or not and the influence of average trust an individual has in different types of financial institutions and access to financial institutions. This is particularly important when considering that access might be endogenous on trust. Results are reported in table A, in the Appendix. In doing so we take into account the whole sample size of 28, 392 observations. As can be expected, an individual who has a higher average trust level in different financial institutions in India is also more likely to having a savings account with a financial institution. When we include, dummy variables for having access to national banks, cooperative banks, cooperative societies and group savings, the effect of trust decreases only slightly but shows still a larger effect than the added access dummies. It is very unlikely, however, that an individual chooses his location where his trust in a financial institution is very high. In India the residence in most cases depends on socio-cultural boundaries, like marriage, educational decisions

e.g. whether to study or not, and occupational choices. Although, we cannot fully rule-out that trust might be endogenous to access it is though very unlikely.

The marginal effects obtained from OLS estimates are very similar to the effects obtained from probit estimates. Secondly, we run the same regressions by using the more direct simultaneous Maximum-Likelihood estimation. The results are in line with our Heckman-type two-step strategy. Thirdly, we check the robustness of the results by estimating probit models with a homogeneous sample of those households who know each of the four financial institutions to control for variations in knowledge or custom with financial matters. The effects of the financial access variable are very similar to the effects in the outcome equation of the Heckman model. Moreover, we run separate regressions for those respondents who do have a savings account and allow for current or prior banking experiences. The estimation results confirm our findings. However, the error term may contain an unobserved town-level effect, and consequently, the standard errors of the effects of the aggregate explanatory variables on individual specific response variables, might be biased. We take this into account by estimating standard errors for intra-cluster correlation within Indian towns (Wooldridge, 2002). Finally, we estimate a multinomial logit model, to test the robustness of our results. The coefficients obtained from the multinomial logit model are in line with our results obtained from the Heckman two stage procedure. However, even if we exclude all don't know responses from our analysis, results do not differ very much.

Although we have taken attempts to address potential endogeneity issues and unique information about trust and financial access of households in India, we cannot completely rule out biases. Since, our dataset does not contain exogenous variables that could serve as valid and sufficiently strong instrument for identification in the first stage of the Heckman-selection regressions, we attempt to minimize biases due to potential endogeneity issues. However, there might be correlations with the error terms because of reverse causality or omitted variables. To avoid biases resulting from reverse causality, we focus on the group of households without a savings account when analyzing the factors influencing trust in financial institutions, i.e. we exclude all individuals who report that they have a bank account at present as well as in the past 12 months. Unfortunately, our dataset does not provide information about respondents who never possessed a bank account during their life time.

4.5. Discussion and Conclusion

Although, the role of trust for financial market participation has been analyzed in prior research, our knowledge about the drivers of trust in financial institutions is still limited. In particular, knowing about the different channels through which trust can be established is very important to motivate the investment decision of individuals. While many studies investigate the role of trust in developed economies, little is known about trust and its role for financial market participation of individuals living in developing economies. In contrast to existing studies investigating trust using a general trust measure, we are able to employ a unique trust measure which is very fine spun and allows us to analyze an individual's trust in different financial institution in India very detailed. An individual's willingness to make an investment might depend on subjective characteristics of the individual e.g. his level of trust in a financial institution, as well as on other determinants that shape the perceived risk of the planned investment. A potential investor, however, might first assesses the potential risk of the planned investment before he decides whether to make the investment or not. The willingness to trust a financial institution with money that the money is invested safely and will lead to the expected return, can be considered as a precondition of making an investment. As we investigate the subjective level of trust a potential investor has in a financial institution, by looking at *whether he would trust a particular institution with his money*, we are able to capture this ex-ante effect. Furthermore, we consider individuals who possess a positive investment potential because they have savings that they can invest, but who are not in disposition of a savings account or another formal investment. These are relevant information, that allow us to investigate why some potential investors are not willing to invest money at a bank or another financial institution and whether a lack of trust might be an issue.

Our estimation result show that trust in financial institutions with money is strongly related to the availability of access the investor has to this financial institution. Is the financial institution accessible within a commutable distance of one day, his likelihood to trust this financial institution is increased. Furthermore, we show that the investor's probability to trust is increased when he consults a bank advisor before making an investment. While other channels through which trust might be influenced like social interaction, the use of mass media sources, or the investors educational background do not show a strong and significant effect on trusting all four financial institutions considered, the availability of access and the contact with the bank advisor are positive and significant for trust in all four financial institutions.

We explain this result by extending the existing trust theories by linking a general model of trust as explained by Mayer et al. (1995) with a more specific model of trust and stock market participation used by Guiso et al. (2008). In doing so, we argue that the willingness to take the risk of an investment is increased when the investor is able to observe the financial institution, when access or the contact to the bank advisor is possible and thereby the investor can get an idea about the riskiness of the planned investment. Although, we cannot directly control that the investor observes the financial institution, we argue that it is more likely to observe the financial institution if the investor has access to the financial institution.

We show empirically, that having access to a respective financial institution within a commutable distance of one day is relevant for trusting financial institutions which are less common and might be associated with a higher risk. One might argue however, that "access within a commutable distance of one day" is a very broad measure, and might not directly point to the fact of observing the institution. This does not lower the attributed relevance of access on trust but rather makes our interpretation stronger.

Further, do our descriptive results provide some evidence that access to a particular financial institution is more important, for trusting this financial institution when individuals possess a low investment potential (lower wealth). This however, might reflect that having access to a financial institution is particularly important when the perceived risk is high. With respect to other channels through which trust in a financial institution might be enhanced, we find only weak evidence for the factors considered. Moreover, most of the variables used for control do not show a consistent effect on trusting the four financial institutions considered. For instance, objective characteristics like the GDP per state or the number of bank branches per state only show an effect for trust in national banks and a very small effect on the probability to trust group savings. Also the possibility to bridge geographical distances through the use of information technologies like the Internet does also not show a strong effect on the decision to trust a financial institution. For instance, individuals who use the radio and TV less than once a week have a 2.6 percentage points higher probability to trust in cooperative societies and a 9 percentage points higher probability to trust in group savings. Among the personal characteristics the risk-attitude of a respondent seems to affect his trust in a financial institution as well as the average trust he has in other financial institutions.

Since we are able to account for trust in different financial institutions in India which moreover, vary in their nature our results provide strong evidence that access as well as the contact to a bank advisor is highly relevant in order to enhance trust in financial institutions in general. Nevertheless, region specific characteristics might be very important for the locational choice of a financial

institution. In order to consider this point, we take into account the number of bank branches per Indian state. However, also intra-state variation might be high because regions in India are very wide. Therefore, we control for town fixed effects in the econometric analyses and try to ensure as good as possible that access is not endogenous to trust.

All in all, our results are not only relevant for policy makers aiming at improving financial market participation among individuals in developing economies, but also for financial institutions who might care about the number of depositors and the size of deposits. Providing a better access among the general population in developing economies, might not necessarily lead to an increase in investments, but rather decreases the perceived risk an investor might face with a financial institution. Thus, beyond better access for customers of financial products also further activities might be relevant in order to reduce the perceived risks of a potential investor. For instance, financial institutions which are not wide spread and rather unknown should advertise their reliability in order to increase trustworthiness among the general population.

Table 4.5.: First Stage Heckman Selection Correction Model: Trust in Banks

	National Bank		Cooperative Bank	
	SE	Marginal Effects	SE	Marginal Effects
Access	0.0830*	0.0136*	0.358***	0.0603***
	(0.0455)	(0.0075)	(0.0662)	(0.0106)
Knowledge of Bank location	1.255***	0.363***	2.401***	0.715***
	(0.126)	(0.0469)	(0.0925)	(0.0261)
Average Trust	-0.104***	-0.0168***	0.803***	0.140***
	(0.0307)	(0.0049)	(0.0543)	(0.0090)
Rural	-0.0467	-0.0075	-0.0119	-0.0020
	(0.0484)	(0.0077)	(0.0642)	(0.0112)
GDP per State	-0.484***	-0.0782***	-0.0069	-0.0012
	(0.0524)	(0.0083)	(0.0596)	(0.0104)
Numbers of banks per State	0.0408*	0.0065*	-0.0303	-0.0052
	(0.0223)	(0.0035)	(0.0308)	(0.0053)
Information Sources				
Daily use newspaper and Internet	-0.129*	-0.0217*	0.0438	0.0075
	(0.0671)	(0.0117)	(0.0910)	(0.0154)
Irregular use newspaper and Internet	-0.0242	-0.0039	0.0004	8.27e-0
	(0.0601)	(0.0098)	(0.0767)	(0.0133)
Daily use radio and TV	-0.0556	-0.0089	0.0608	0.0106
	(0.0474)	(0.0076)	(0.0579)	(0.0101)
Irregular use radio and TV	0.113**	0.0177**	0.0915	0.0155
	(0.0478)	(0.0072)	(0.0593)	(0.0098)
Education				
Knowledge of English	-0.152**	-0.0258**	-0.0416	-0.0073
	(0.0620)	(0.0110)	(0.0843)	(0.0150)
Knowledge of Inflation	0.107	0.0164*	0.0834	0.0139
	(0.0692)	(0.0099)	(0.114)	(0.0181)
Consultancy				
Friends and Peer Group	-0.0513	-0.0085	-0.0599	-0.0107
	(0.0644)	(0.0110)	(0.0815)	(0.0150)
Professionals	-0.614***	-0.139***	0.259	0.0384*
	(0.0802)	(0.0233)	(0.170)	(0.0211)
Others	-0.465***	-0.0991***	-0.154	-0.0294
	(0.123)	(0.0328)	(0.201)	(0.0419)
Personal Characteristics				
Income	0.315***	0.0509***	0.0072	0.0012
	(0.0175)	(0.0028)	(0.0241)	(0.0041)
Married	-0.0464	-0.0073	0.0916	0.0166
	(0.0575)	(0.0089)	(0.0707)	(0.0133)
Age	-0.0029	-0.0004	0.0050**	0.0008**
	(0.0019)	(0.0003)	(0.0023)	(0.0004)
Employee	-0.0447	-0.0071	-0.0536	-0.0092
	(0.0430)	(0.0069)	(0.0542)	(0.0093)
Self Employed	-0.150	-0.0268	0.0472	0.0079
	(0.246)	(0.0480)	(0.457)	(0.0747)
Risk Attitude	-0.0179	-0.0028	0.109*	0.0196
	(0.0506)	(0.0080)	(0.0649)	(0.0122)
Female	-0.211***	-0.0378***	-0.172**	-0.0325**
	(0.0606)	(0.0120)	(0.0803)	(0.0164)
Backward caste	-0.0437	-0.0071	-0.0275	-0.0048
	(0.0467)	(0.0077)	(0.0590)	(0.0104)
Constant	2.198***		1.648**	
	(0.633)		(0.781)	
Chi^2 Town Fixed Effects	YES	YES	YES	YES
Chi^2 Education Fixed Effects	YES	YES	YES	YES
Pseudo R^2	0.179	0.179	0.591	0.591
Observations	6,925	6,925	6,912	6,912

Table 4.5 reports the regression results for the first stage Heckman-type model with sample selection. The table shows the coefficients of the explanatory variables and the marginal effects calculated at their mean on the probability to give a closed answer with *"yes"* or *"no"*. The dependent variable of the first regression takes on the value one if the respondents states that he or she would either trust a national bank with his money or not, and is zero if the respondent answers with *"don't know"* whether to trust the corresponding bank. The dependent variable for knowledge-trust in cooperative bank takes on the value one if the respondents gives a closed answer with yes or no, and is zero if he or she answers with "don't know" whether to trust a cooperative bank with his money or not. The two dummy variables *"female"* and *"backward caste"* define the exclusion restriction. Town and education dummies are included. Censored and uncensored observation vary with the corresponding financial institution. Moreover, some town dummy variables are dropped because of a perfect failure prediction. Therefore the number of observation is reduced. Clustered and robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

Table 4.6.: First Stage Heckman Selection Correction Model: Trust in FI's

	Cooperative Society		Group Savings	
	SE	Marginal Effects	SE	Marginal Effects
Access	0.234***	0.0864***	0.887***	0.331***
	(0.0696)	(0.0250)	(0.0779)	(0.0297)
Knowledge of bank location	1.819***	0.637***	1.826***	0.565***
	(0.0669)	(0.0176)	(0.0729)	(0.0151)
Average Trust	0.661***	0.249***	0.520***	0.179***
	(0.0481)	(0.0180)	(0.0388)	(0.0130)
Rural	-0.147**	-0.0554**	-0.0786	-0.0270
	(0.0611)	(0.0229)	(0.0650)	(0.0224)
GDP per State	0.123**	0.0462**	0.105	0.0360
	(0.0526)	(0.0198)	(0.0724)	(0.0248)
Numbers of banks per State	0.0314	0.0118	0.0537*	0.0184*
	(0.0277)	(0.0104)	(0.0322)	(0.0110)
Information Sources				
Daily use Internet	0.0293	0.0110	0.110	0.0385
	(0.0537)	(0.0201)	(0.0746)	(0.0264)
Irregular use Internet	0.0569	0.0213	-0.0139	-0.0047
	(0.0543)	(0.0202)	(0.0618)	(0.0212)
Regular use TV and Radio	-0.141***	-0.0531***	0.190***	0.0649***
	(0.0456)	(0.0171)	(0.0506)	(0.0172)
Irregular use TV and Radio	-0.156***	-0.0595***	0.0960*	0.0333*
	(0.0493)	(0.0189)	(0.0536)	(0.0188)
Education				
Knowledge of English	0.149**	0.0554**	0.111*	0.0387*
	(0.0616)	(0.0225)	(0.0616)	(0.0217)
Knowledge of Inflation	-0.0736	-0.0280	-0.0525	-0.0178
	(0.0778)	(0.0298)	(0.0778)	(0.0261)
Consultancy				
Friends and Peers	0.0431	0.0161	0.252***	0.0908***
	(0.0711)	(0.0265)	(0.0740)	(0.0276)
Professionals	0.0016	0.0006	0.354***	0.131***
	(0.111)	(0.0417)	(0.127)	(0.0496)
Others	-0.161	-0.0621	0.0941	0.0331
	(0.145)	(0.0567)	(0.150)	(0.0539)
Personal Characteristics				
Income	0.0707***	0.0266***	-0.0093	-0.0032
	(0.0189)	(0.0071)	(0.0208)	(0.0071)
Married	0.0794	0.0302	0.129**	0.0433**
	(0.0510)	(0.0195)	(0.0561)	(0.0183)
Age	0.0013	0.0004	0.0008	0.0003
	(0.0015)	(0.0005)	(0.0021)	(0.0007)
Employee	-0.0752	-0.0283	0.0467	0.0160
	(0.0471)	(0.0177)	(0.0422)	(0.0145)
Self Employed	0.0510	0.0190	-0.0137	-0.0046
	(0.205)	(0.0757)	(0.252)	(0.0861)
Risk Attitude	-0.0890	-0.0332	0.0895	0.0304
	(0.0578)	(0.0214)	(0.0565)	(0.0189)
Female	-0.225***	-0.0866***	0.254***	0.0915***
	(0.0788)	(0.0309)	(0.0718)	(0.0267)
Backward caste	-0.0373	-0.0141	0.109**	0.0381**
	(0.0531)	(0.0201)	(0.0544)	(0.0193)
Constant	-0.573		-1.604*	
	(0.612)		(0.886)	
Chi^2 Town Fixed Effects	YES	YES	YES	YES
Chi^2 Education Fixed Effects	YES	YES	YES	YES
Pseudo R^2	0.447	0.447	0.503	0.503
Observations	6,925	6,925	6,925	6,925

Table 4.6 reports the regression results for the first stage Heckman-type model with sample selection. The table shows the coefficients of the explanatory variables and the marginal effects calculated at their mean on the probability to give a closed answer with *"yes"* or *"no"* whether to trust cooperative societies and group savings. The dependent variable of the first regression takes on the value one if the respondents states that he or she would either trust a cooperative society with his money or not, and is zero if the respondent gives a *"don't know"* answer. The dependent variable for trust in group savings takes on the value one if the respondents gives a closed answer with *"yes"* or *"no"*, and is zero if he or she answers with *"don't know"* whether to trust group savings with his money or not. The two dummy variables *"female"* and *"backward caste"* denote the exclusion restriction in the first regression. Only the dummy variable "backward caste" defines the exclusion restriction in the second regression. Town and education dummies are included. However, some town dummy variables are dropped because of a perfect failure prediction. Therefore the number of observation is reduced. Clustered and robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

Table 4.7.: Trust in Banks and Financial Access

	National Bank			Cooperative Bank		
	Heckman	Probit	Marginal Effects	Heckman	Probit	Marginal Effects
Access	0.776***	0.775***	0.0102***	0.590***	0.582***	0.146***
	(0.138)	(0.137)	(0.0022)	(0.0419)	(0.0469)	(0.0112)
Average Trust	0.346***	0.349***	0.0030***	0.522***	0.510***	0.127***
	(0.0994)	(0.101)	(0.0009)	(0.0520)	(0.0428)	(0.0100)
Rural	-0.0853	-0.0932	-0.0008	0.184***	0.187***	0.0467***
	(0.189)	(0.190)	(0.0016)	(0.0608)	(0.0600)	(0.0148)
GDP per State	-0.535***	-0.525***	-0.0045***	-0.110	-0.112	-0.0278
	(0.141)	(0.115)	(0.0016)	(0.0698)	(0.0689)	(0.0171)
Numbers of banks per State	-0.240**	-0.236**	-0.0020*	-0.0139	-0.0126	-0.0031
	(0.114)	(0.113)	(0.0012)	(0.0319)	(0.0319)	(0.0079)
Information Sources						
Daily use newspaper and Internet	-0.0878	-0.0996	-0.0009	-0.0158	-0.0178	-0.0044
	(0.196)	(0.192)	(0.0018)	(0.0654)	(0.0659)	(0.0165)
Irregular use newspaper and Internet	-0.113	-0.109	-0.00102	-0.110*	-0.108*	-0.0277*
	(0.182)	(0.179)	(0.0017)	(0.0621)	(0.0618)	(0.0162)
Daily use radio and TV	0.215	0.220	0.0019	-0.0347	-0.0377	-0.0093
	(0.134)	(0.137)	(0.0012)	(0.0478)	(0.0480)	(0.0119)
Irregular use radio and TV	0.0681	0.0844	0.0007	0.108**	0.107**	0.0262**
	(0.141)	(0.139)	(0.0011)	(0.0483)	(0.0479)	(0.0114)
Education						
English	-0.139	-0.143	-0.0013	-0.0069	-0.0050	-0.0012
	(0.158)	(0.156)	(0.0017)	(0.0620)	(0.0620)	(0.0154)
Knowledge of Inflation	0.0878	0.0707	0.0005	-0.0529	-0.0536	-0.0136
	(0.223)	(0.222)	(0.00161)	(0.0903)	(0.0909)	(0.0235)
Consultancy						
Friends and peer group	-0.115	-0.104	-0.0010	-0.113	-0.108	-0.0279
	(0.212)	(0.210)	(0.0023)	(0.0765)	(0.0749)	(0.0201)
Professionals	0.463	0.471	0.0034	0.176**	0.172**	0.0396**
	(0.305)	(0.302)	(0.0087)	(0.0824)	(0.0829)	(0.0174)
Others	-0.483	-0.514	-0.0090	-0.112	-0.110	-0.0288
	(0.421)	(0.413)	(0.0121)	(0.154)	(0.156)	(0.0428)
Personal Characteristics						
Income	-0.148*	-0.140**	-0.0012**	-0.0053	-0.0039	-0.0009
	(0.0796)	(0.0642)	(0.0006)	(0.0224)	(0.0223)	(0.0055)
Married	-0.134	-0.104	-0.0008	0.0248	0.0288	0.0072
	(0.176)	(0.181)	(0.0013)	(0.0471)	(0.0493)	(0.0125)
Age	0.0011	0.0007	6.78e-0	0.0021	0.0020	0.0005
	(0.0043)	(0.0043)	(3.75e-0)	(0.0017)	(0.0017)	(0.0004)
Employee	-0.240**	-0.210**	-0.0018**	0.0875*	0.0891*	0.0222*
	(0.0944)	(0.0933)	(0.0008)	(0.0520)	(0.0513)	(0.0128)
Self Employed	n.a	n.a	n.a	0.216	0.220	0.0490
	n.a	n.a	n.a	(0.265)	(0.264)	(0.0519)
Risk Attitude	0.383***	0.404***	0.0049**	0.117*	0.112*	0.0286*
	(0.126)	(0.128)	(0.0021)	(0.0630)	(0.0635)	(0.0167)
Female		0.233	0.0015		0.0724	0.0175
		(0.201)	(0.0011)		(0.0770)	(0.0181)
Backward caste		-0.226**	-0.0022*		0.0217	0.0053
		(0.112)	(0.00134)		(0.0512)	(0.0126)
MILLS	-0.0588			0.0856		
	(0.500)			(0.109)		
Constant	15.44***	15.20***		3.015***	2.966***	
	(1.756)	(1.695)		(0.910)	(0.885)	
Chi^2 Town Fixed Effects	YES	YES	YES	YES	YES	YES
Chi^2 Education Fixed Effects	YES	YES	YES	YES	YES	YES
Pseudo R^2	0.209	0.226	0.226	0.121	0.124	0.124
Observations	6,885	6,885	6,885	5,457	5,498	5,498

Table 4.7 reports the regression results for the second stage Heckman-type model with sample selection. The table shows the coefficients of the explanatory variables, the results of the probit estimations without correcting for sample selection and the marginal effects after probit regressions, calculated at their mean. The dependent variable of the first regression takes on the value one if the respondents states that he or she would trust a national bank with his money, and is zero if not. The dependent variable for trust in cooperative banks takes on the value one if the respondent answers that he would trust this bank-type with his money, and is zero if he or she answers with no. The don't know responses in trust are excluded and in the Heckman equation considered by including the inverse mills ratio from the selection equation. Town and education dummies are included. The two dummy variables *"female"* and *"backward caste"* define the exclusion restriction. Town and education dummies are included. Censored and uncensored observation vary with the corresponding financial institution. Moreover, some town dummy variables are dropped because of a perfect failure prediction. Therefore the number of observation is reduced. ***, **, * denote significant at the 1, 5, 10 percent level. Censored and uncensored observation vary with the corresponding financial institution. Clustered and robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

Table 4.8.: Trust in Financial Institutions and Financial Access

	Cooperative Society			Group Savings		
	Heckman	Probit	Marginal Effects	Heckman	Probit	Marginal Effects
Access	0.574***	0.508***	0.199***	1.195***	1.136***	0.428***
	(0.0638)	(0.0607)	(0.0231)	(0.0982)	(0.0827)	(0.0277)
Average Trust	0.596***	0.502***	0.199***	0.126*	-0.0136*	-0.0054*
	(0.0576)	(0.0514)	(0.0204)	(0.0668)	(0.0074)	(0.0029)
Rural	0.118*	0.138**	0.0548**	0.196*	0.201*	0.0800*
	(0.0610)	(0.0601)	(0.0238)	(0.119)	(0.118)	(0.0466)
GDP per State	-0.0467	-0.0687	-0.0273	-0.178	-0.211*	-0.0840*
	(0.0853)	(0.0846)	(0.0336)	(0.118)	(0.119)	(0.0475)
Numbers of banks per State	-0.0136	-0.0183	-0.0072	-0.0047	-0.0077	-0.0030
	(0.0305)	(0.0305)	(0.0121)	(0.0399)	(0.0405)	(0.0161)
Information Sources						
Daily use newspaper and Internet	0.0210	0.00962	0.00382	-0.0432	-0.0291	-0.0116
	(0.0608)	(0.0604)	(0.0240)	(0.0937)	(0.0933)	(0.0372)
Daily use radio and TV	0.0206	-0.0060	-0.0023	-0.0207	-0.0126	-0.0050
	(0.0629)	(0.0615)	(0.0244)	(0.0794)	(0.0794)	(0.0316)
Daily use radio and TV	-0.0108	0.0160	0.00635	0.138**	0.127**	0.0505**
	(0.0521)	(0.0531)	(0.0211)	(0.0665)	(0.0645)	(0.0257)
Irregular use radio and TV	-0.0342	-0.0065	-0.0025	0.233***	0.226***	0.0895***
	(0.0558)	(0.0565)	(0.0224)	(0.0701)	(0.0689)	(0.0271)
Education						
English	0.197***	0.172***	0.0681***	-0.0214	-0.0238	-0.0095
	(0.0665)	(0.0666)	(0.0261)	(0.0917)	(0.0941)	(0.0375)
Knowledge of Inflation	-0.0397	-0.0304	-0.0121	0.0862	0.0800	0.0318
	(0.0800)	(0.0802)	(0.0319)	(0.0995)	(0.0998)	(0.0396)
Consultancy						
Friends and peer group	0.0904	0.0950*	0.0376*	-0.0935	-0.105	-0.0420
	(0.0594)	(0.0577)	(0.0227)	(0.0868)	(0.0857)	(0.0341)
Professionals	0.286**	0.303***	0.117***	0.299**	0.295**	0.115**
	(0.118)	(0.116)	(0.0429)	(0.135)	(0.139)	(0.0526)
Others	-0.176	-0.151	-0.0603	-0.0063	-0.0195	-0.0077
	(0.152)	(0.151)	(0.0601)	(0.157)	(0.158)	(0.0630)
Personal Characteristics						
Income	-0.0066	-0.0144	-0.0057	-0.0934***	-0.0908***	-0.0362***
	(0.0245)	(0.0239)	(0.0094)	(0.0286)	(0.0285)	(0.0114)
Married	-0.0205	-0.0281	-0.0111	-0.0249	-0.0072	-0.0029
	(0.0661)	(0.0652)	(0.0258)	(0.0739)	(0.0767)	(0.0305)
Age	2.50e-0	-0.0003	-0.0001	-0.0032	-0.0033	-0.0013
	(0.0018)	(0.0018)	(0.0007)	(0.0025)	(0.0025)	(0.0010)
Employee	-0.0528	-0.0379	-0.0150	0.0815	0.0800	0.0319
	(0.0474)	(0.0466)	(0.0185)	(0.0674)	(0.0671)	(0.0267)
Self employed	0.263	0.244	0.0947	-0.520	-0.494	-0.192
	(0.290)	(0.289)	(0.109)	(0.370)	(0.369)	(0.134)
Risk Attitude	0.169***	0.181***	0.0722***	0.0250	0.0184	0.0073
	(0.0605)	(0.0607)	(0.0241)	(0.0615)	(0.0620)	(0.0247)
Female		0.0261	0.0103		0.217**	0.0856**
		(0.0755)	(0.0299)		(0.0891)	(0.0347)
Backward caste		-0.0401	-0.0159		-0.0240	-0.00959
		(0.0570)	(0.0227)		(0.0821)	(0.0327)
MILLS	0.347***			0.0915		
	(0.0934)			(0.0996)		
Constant	1.938*	2.095**		2.200*	2.478*	
	(1.055)	(1.047)		(1.336)	(1.354)	
Chi^2 Town Fixed Effects	YES	YES	YES	YES	YES	YES
Chi^2 Education Fixed Effects	YES	YES	YES	YES	YES	YES
Pseudo R^2	0.128	0.101	0.101	0.214	0.216	0.216
Observations	4,233	4,233	4,233	2,648	2,648	2,648

Table 4.8 reports the regression results for the second stage Heckman-type model with sample selection. The table shows the coefficients of the explanatory variables, the results of the probit estimations without correcting for sample selection and the marginal effects after probit regressions, calculated at their mean. The dependent variable of the first regression takes on the value one if the respondents states that he or she would trust a cooperative society with his money, and is zero if not. The dependent variable for trust in group savings takes on the value one if the respondent states that he or she would trust this micro finance institution with his money, and is zero if he or she answers with no. The don't know responses in trust are excluded and in the Heckman equation considered by including the inverse mills ratio from the selection equation. Town and education dummies are included. The two dummy variables *"female"* and *"backward caste"* define the exclusion restriction. Town and education dummies are included. Censored and uncensored observation vary with the corresponding financial institution. Moreover, some town dummy variables are dropped because of a perfect failure prediction. Therefore the number of observation is reduced. ***, **, * denote significant at the 1, 5, 10 percent level. Censored and uncensored observation vary with the corresponding financial institution. Clustered and robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

Appendix A.

Table A1.: Knowledge of Access

	National Bank (1)	Cooperative Bank (2)	Cooperative Societey (3)	Goup Savings (4)
Rural	0.00140	0.00706**	0.0146**	0.0274***
	(0.00338)	(0.00306)	(0.00673)	(0.00957)
GDP State	0.00772**	0.000645	0.0424***	0.0507***
	(0.00302)	(0.00299)	(0.00806)	(0.0127)
State Bank number	-0.000837	0.000946	0.00954***	0.0121***
	(0.00211)	(0.00144)	(0.00286)	(0.00378)
Income	-0.000242	0.000760	0.000789	-0.00326
	(0.00120)	(0.00110)	(0.00241)	(0.00323)
Married	0.00638	0.00242	0.000852	0.00618
	(0.00422)	(0.00357)	(0.00802)	(0.0114)
Age	0.000167	0.000258**	0.000530**	0.000103
	(0.000125)	(0.000113)	(0.000257)	(0.000360)
Employee	0.00314	-0.00382	0.00137	0.00406
	(0.00296)	(0.00260)	(0.00613)	(0.00810)
Selfemployed	X	X	X	-0.0183
	X	X	X	(0.0681)
Risk attitude	-0.00252	-0.00489*	-0.00795	-0.0186**
	(0.00326)	(0.00274)	(0.00633)	(0.00801)
English	0.00750*	0.00178	0.00836	0.0107
	(0.00413)	(0.00425)	(0.00863)	(0.0109)
Knowledge Inflation	0.00739*	0.00934***	0.0153*	0.00773
	(0.00413)	(0.00305)	(0.00851)	(0.0110)
Friends Peers	-0.00419	-0.00451	-0.000673	0.0142
	(0.00479)	(0.00457)	(0.00888)	(0.00941)
Professionals	0.0156***	0.00108	-0.00855	-0.0153
	(0.00300)	(0.00623)	(0.0166)	(0.0168)
Others	-0.00129	0.00629	0.0205	0.0465***
	(0.0109)	(0.00654)	(0.0150)	(0.00728)
Newspaper Internet ed	0.0149***	0.00221	0.0243***	-0.000729
	(0.00354)	(0.00390)	(0.00821)	(0.0127)
Newspaper Internet st	0.0115***	0.00827***	0.0220***	-0.00189
	(0.00318)	(0.00320)	(0.00694)	(0.0118)
Radio TV ed	0.00476	0.00453	0.0161**	0.0197*
	(0.00315)	(0.00310)	(0.00703)	(0.0104)
Radio TV st	0.0113***	0.00194	0.0133**	0.0170**
	(0.00277)	(0.00272)	(0.00592)	(0.00781)
Female	-0.0166***	-0.00819	-0.0119	0.0126
	(0.00593)	(0.00510)	(0.0107)	(0.00983)
Bwcat	-0.000625	0.00250	0.0113*	-0.0306***
	(0.00309)	(0.00267)	(0.00645)	(0.0107)
Observations	6,401	5,360	4,421	2,817
Pseudo R^2	0.1244	0.1169	0.1046	0.1132

The table reports marginal effects for the dependent variable "knowledge Access". The respondent was asked: "Do you have access within a commutable distance of one day to this financial institution?" The dummy variable takes on the value one, if the respondent answer is "yes" or "no" and is zero when the answer is "don't know". This shows whether the respondent *knows* if the respective financial institution is reachable or not. The sample consist of those individuals who report that they did not invest in the respective financial instrument in the past 12 months. Moreover, only those are considered who possess a positive savings potential to invest. Each regression is based on 7.310 observations. This number is reduced because we exclude the respective *don't know* responses in trust and moreover, many town dummies are dropped because they predict the outcome variable perfectly. We control for town as well as for education fixed effects. Robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

Figure A1.: Contingency Tables: Access to Financial Institutions and Trust

The Figure shows the conditional relative frequencies of individuals who state having access to the corresponding financial institutions within a commutable distance of one day and whether they would trust these financial institutions with their money. Results of a χ^2 test of independence between access and trust provide evidence that both variables are strongly interrelated. The respondent could answer for both with "yes", "no" and "don't know". The considered financial institutions are: national banks, cooperative banks, cooperative societies and group savings. As can be seen from the figure, the variables access and trust are not independent from each other. This holds for all four financial institutions considered. With respect to corporative banks, for instance, 86 percent of those with access state that they would trust this financial institution, 11 percent answer with no and 3 percent give a don't know response. In contrast, 64 percent of respondents without access state that they would trust a cooperative bank, 26 percent answer with no and 9.4 percent give a don't know response. However, 87 percent of respondents who give a don't know response in access also give a don't know response in trust. The amplitude of the corresponding bar is proportional to the number of observations in the respective category. Numbers refer to the aforementioned contingency tables.

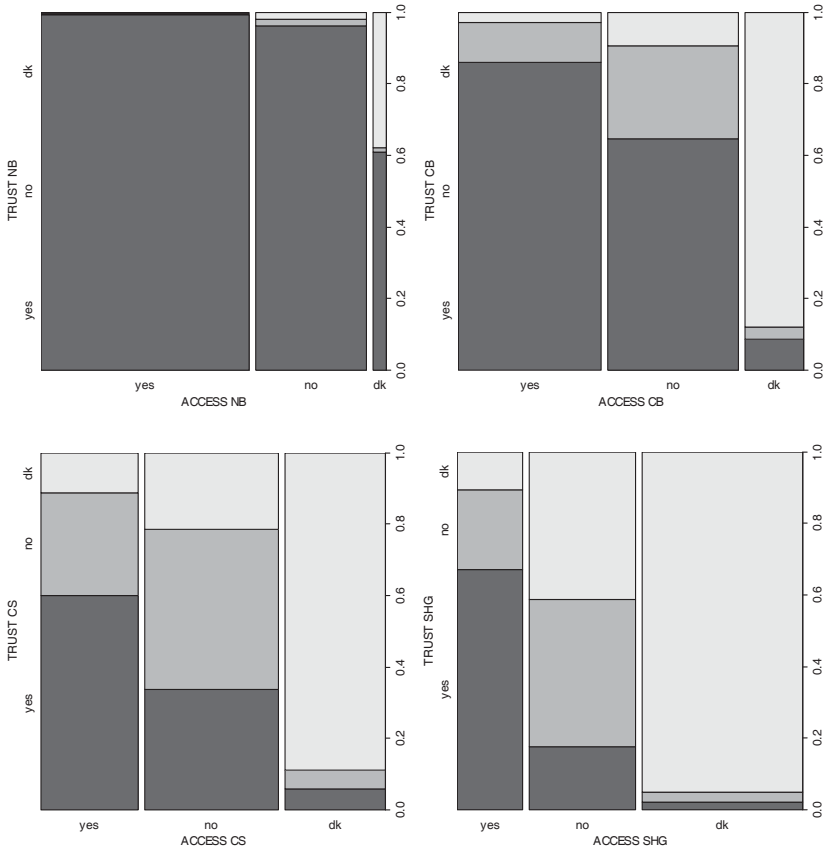


Figure A2.: Access to Financial Institutions

The Figure shows the percentaged shares of access to financial institutions. The respondent was asked whether he has access within a commutable distance of one day to the corresponding financial institution or not. Further, it is possible to give a don't know response. Figure 1.1 shows those households who do not possess a savings account at present but do have positive savings to invest. Therefore the sample consist of 7.310 respondents.

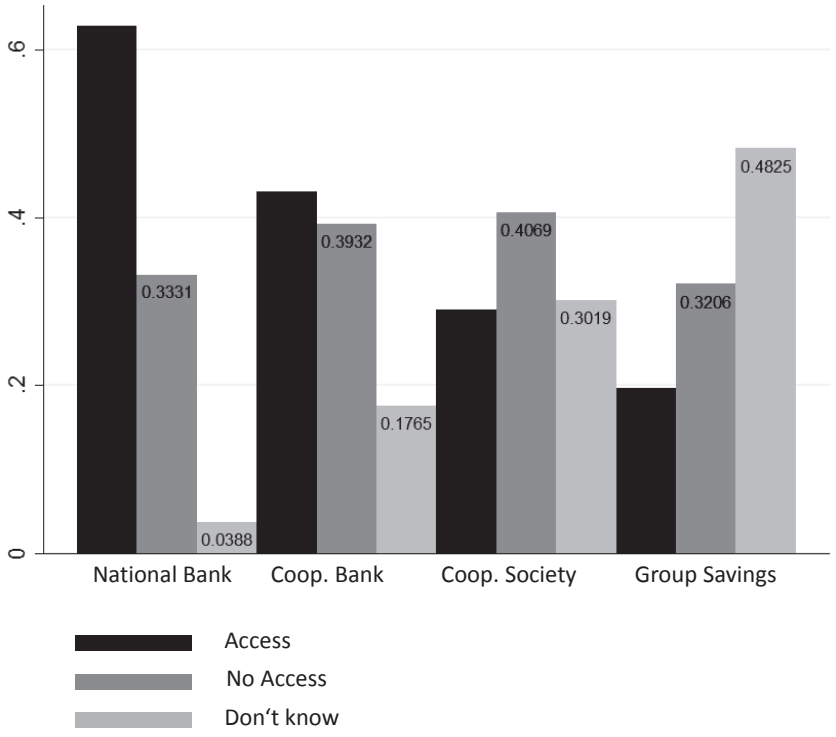


Table A2.: Trust in Financial Institutions

	National Bank (1)	Cooperative Bank (1)	Cooperative Societey (1)	Goup Savings (1)
Access	0.0128***	0.151***	0.208***	0.426***
	(0.00231)	(0.0110)	(0.0181)	(0.0215)
Average Trust	0.00387***	0.124***	0.284***	0.0626**
	(0.00106)	(0.0112)	(0.0197)	(0.0243)
Rural	-0.00131	0.0454***	0.0622***	0.102***
	(0.00135)	(0.0123)	(0.0200)	(0.0275)
GDP per State	-0.00817***	-0.0204*	0.00449	-0.0509
	(0.00162)	(0.0119)	(0.0227)	(0.0381)
State Bank No	-0.00235**	-0.00220	0.00105	0.00618
	(0.00105)	(0.00610)	(0.00977)	(0.0138)
Income	-0.00107*	-0.00136	-0.00984	-0.0398***
	(0.000599)	(0.00479)	(0.00758)	(0.0104)
Married	-0.000396	0.00352	-0.0161	-0.00224
	(0.00185)	(0.0149)	(0.0238)	(0.0324)
Age	1.23e-06	0.000484	-8.71e-06	-0.00134
	(6.35e-05)	(0.000476)	(0.000777)	(0.00108)
Employee	-0.00348**	0.0237**	-0.0250	0.0389
	(0.00151)	(0.0108)	(0.0176)	(0.0239)
Self employed	X	0.0548	0.101	-0.198*
	X	(0.0519)	(0.0916)	(0.114)
Risk Attitude	0.00555**	0.0286**	0.0731***	-0.00483
	(0.00231)	(0.0129)	(0.0195)	(0.0259)
Knowledge English	-0.00367	0.000678	0.0664***	-0.0107
	(0.00257)	(0.0156)	(0.0243)	(0.0333)
Knowledge Inflation	0.00167	-0.0105	-0.0139	0.0510
	(0.00212)	(0.0178)	(0.0264)	(0.0330)
Friends and Peers	-0.00113	-0.0226	0.0406	-0.0239
	(0.00241)	(0.0168)	(0.0254)	(0.0306)
Professionals	-0.00205	0.0383	0.128***	0.0904*
	(0.00416)	(0.0246)	(0.0416)	(0.0527)
Others	-0.0131	-0.0361	-0.0416	-0.0193
	(0.0120)	(0.0429)	(0.0614)	(0.0716)
Newspaper Internet ed	-0.00419	-0.00347	-0.00447	-0.0118
	(0.00298)	(0.0171)	(0.0268)	(0.0368)
Newspaper Internet st	-0.00163	-0.0234	-0.00216	0.0135
	(0.00219)	(0.0157)	(0.0245)	(0.0339)
Radio TV ed	0.00409**	-0.00402	0.0177	0.0489*
	(0.00160)	(0.0120)	(0.0199)	(0.0287)
Radio TV st	0.000474	0.0286**	0.00245	0.0783***
	(0.00147)	(0.0113)	(0.0191)	(0.0254)
Female	0.00126	0.0130	0.0288	0.0773**
	(0.00178)	(0.0176)	(0.0299)	(0.0339)
Bwcat	-0.00405**	0.00411	-0.00261	0.000672
	(0.00171)	(0.0121)	(0.0203)	(0.0272)
Observations	6,829	5,350	3,992	2,484
Pseudo R^2	0.1629	0.1092	0.1194	0.2279

The table reports the marginal effects of the explanatory variables on the probabilities of trusting the corresponding financial institution with money. The dependent variable takes on the value one if the respondent answers with "yes" and is zero if the answer is "no". Don't know responses are excluded from the analyses. Therefore and because of dropped explanatory variables the number of observation varies among regressions. The sample consist of those individuals who report that they did not invest in the respective financial instrument in the past 12 months. Moreover, only those are considered who possess a positive savings potential to invest. We control for town as well as for education fixed effects. Robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

5. Comparing Trust in Domestic Banks with Trust in Foreign Banks in Retail Banking

This paper empirically investigates the differences in consumer trust in foreign banks and domestic banks. Using a large scale survey on savings patterns of Indian households, we find that Indians are less likely to trust foreign financial institutions with their money than private Indian financial institutions. This result holds even when controlling for a number of factors that may affect customer trust. However, our results also suggest that highly educated Indians using information sources like Internet, radio or newspaper tend to have more confidence in foreign banks than in Indian private banks. Moreover, consumer trust in foreign banks is higher in Indian states where the ratio of foreign banks to domestic private banks is relatively high.

5.1. Introduction

The globalization of capital markets and rising incomes of a growing middle-class in emerging economies have encouraged foreign banks to engage in retail banking in emerging markets. While most foreign banks operating in these countries have experience in relationships with business banking customers, who are often from the same home country, consumer banking is a new business area that poses a challenge to foreign banks. Particularly Asian emerging economies, like India and China, are characterized by a small number of foreign banks operating in the retail banking sector (Clarke et al., 2003). In spite of the liberalization of financial markets in a number of emerging economies, foreign banks still tend to face severe obstacles inhibiting their market entry (Ataullah and Le, 2004).

A lack of consumer trust in foreign banks might be a relevant obstacle because it may constitute an important disadvantage for foreign banks operating in a host market. Trust plays an important role in many economic decisions and in particular in banking when customers of financial services decide about their investments. An individual's decision to place money with a bank is a faithful decision under the risk that the customer might be limited in the further disposal of his money or that the money is safely invested. Hence, such an action needs a certain level of trust that this financial institution is reliable and fair (Guiso et al., 2008).

However, the topic of consumer trust in financial institutions has been largely ignored in the literature as yet. Existing literature either focuses on problems of foreign firms to raise capital in foreign capital markets as the latter often suffer from investors' "home bias" (Bell et al., 2012) or they focus on the lower efficiency of foreign banks relative to domestic banks (Ataullah and Le, 2004; Denk et al., 2012). Although the literature dealing with "liability of foreignness" in capital markets has identified lack of trust as a driver of relational hazards (Denk et al., 2012), differences between consumer trust in foreign banks and consumer trust in domestic banks have not been empirically investigated so far.

Particularly in emerging economies consumer trust in financial institutions is an issue, since investor protection and legal frameworks are often weak and corporate government guidelines are often non-existent. Moreover, emerging economies are still characterized by a high level of corruption where political and institutional corruption might lead to a distrust among citizens in these institutions (Hakhverdian and Mayne, 2012). A priori it is unclear, however, whether consumers have more confidence in foreign banks or in domestic banks. On the one hand, it can be argued that domestic banks are characterized by a higher degree of trust than foreign banks because the latter may be less integrated in networks, have different corporate cultures or because of spatial distance (Denk et al., 2012). On the other hand, consumers may rate foreign banks as being more reliable than domes-

tic banks because the latter may be more affected by corruption. In this case, retail banking customers would face higher risks when committing their money to domestic banks.

This paper empirically examines trust of Indian consumers in foreign banks and domestic private banks. India is a good case for analyzing the problems of foreign banks in retail banking in emerging economies. India deregulated its financial markets in 1990 but the regulatory framework is still very restrictive for foreign banks. Foreign banks are still restricted in choosing the location they want and are further only allowed to open a limited number of branches. They are even directed to open their bank branches in the so called priority sectors in rural regions of India, when a given number of branches is reached in urban areas. Hence, foreign banks are disadvantaged compared to domestic banks. This regulation leads to a variation in the ratio of foreign banks to domestic private banks among Indian states and allows us to investigate these differences for consumer trust. Moreover, the level of corruption in India is still remarkable. India ranked 90th in the year 2005 according to the corruption perception index where it lagged behind countries like China, Mexico or Syria and has not improved remarkably until now. Hence, consumer trust in banks is an issue in India.

We contribute to the literature by investigating consumer trust in foreign and domestic banks. In particular, we examine whether there are differences between trust in foreign banks and trust in private banks and analyze the factors that may explain differences. We make use of a unique dataset which comprises detailed information about consumer trust in foreign banks and domestic private banks. Our data are obtained from a survey of Indian households conducted at the request of the Indian ministry of finance in 2004-2005. It is an important advantage of this data that respondents report their trust in different financial institutions. Hence, we are able to extend previous studies on participation in financial markets that used general trust measures (Guiso et al., 2008; La Porta et al., 1997). We link this dataset with additional data obtained from the Reserve Bank of India on the number of bank branches of foreign and domestic banks at the Indian state level.

Our results suggest that on average Indians trust less in foreign banks than in Indian private banks. However, when investigating the difference between consumer trust in foreign and domestic banks, our results provide evidence that individuals with financial experiences or a higher level of education are more likely to trust a foreign bank than a domestic bank with their money. This result holds even if we control for a variety of other determinants. Our results show that the number of foreign bank branches per region has a positive effect on trusting a foreign bank which is economically very important because it points to some extent to discrimination effects resulting from strict regulations imposed by the Indian government.

The remainder of this article proceeds as follows. The next section discusses the conceptual framework and derives hypotheses. Section 3 describes the data source and the measurement of variables. Descriptive statistics and the results of econometric analyses are presented in section 4. Section 5 provides a discussion and concludes.

5.2. Consumer Trust in the Banking Sector: Conceptual Framework

Our empirical analysis aims to provide answers to two relevant questions: *Do consumers have more confidence in domestic banks or do they have more confidence in foreign banks? Which factors may explain differences between trust in domestic banks and trust in foreign banks?* In this section, we first explain the relevance of consumer trust in banks for the decision to commit money to a bank and why this trust is especially important for retail banking in emerging economies. Next, we discuss the reasons why consumer trust may differ between domestic banks and foreign banks. Finally, we briefly describe the Indian banking sector, since our empirical analysis is based on Indian data.

5.2.1. The Relevance of Consumer Trust in Retail Banking in Emerging Economies

Today, a rising number of banks and financial institutions in emerging economies offer a substantial number of investment options for consumers of financial services. People in emerging economies, are faced with new and innovative financial products provided by different financial institutions. However, banks differ in their services that they provide and in their ways how to manage financial market risks (Allen and Santomero, 2001; Scholtens and van Wensveen, 1999). In financial markets today, banks and other financial institutions need to be entrepreneurial and innovative in order to be able to compete and survive.

In India, for instance, nationalized banks are very common and exist over a long time. They have expanded their branch network considerably between 1961 and 1991 in particular in rural and less developed areas in India. National banks offer a substantial amount of financial services for the general population in India. They are considered as being very reliable as they offer deposit guarantees for investors. Nevertheless, also domestic private banks as well as foreign banks which operate in the retail banking sector have to consider certain investor protection insurance mechanisms and many individuals are often not aware of that fact. The number

of private banks in India has increased remarkably in the past years and among private banks, domestic and foreign private banks can be distinguished.

Individuals in many developing economies are free to choose the type of financial institution in order to manage their finances. Nevertheless, investing money with a bank is still a situation in which a certain level of consumer trust in the financial institution is needed. The literature on financial market development shows that trust does not only influence the investment decision of a customer of financial services positively (Guiso et al., 2004, 2008) but also increases the efficiency of investments in a much broader sense (Dearmon and Grier, 2009).

Guiso et al. (2008) show in their theoretical trust model of financial market participation that a low level of trust can explain why an individual does not make an investment. They argue that if the investor has to choose between a safe asset with a certain safe return and a risky asset with an uncertain return, he will opt only for the risky one if the individual specific trust in the risky asset is high enough. This is because the investor assesses the probability that the firm in which he intends to invest might cheat. If the complementary probability called "trust" exceeds the assessed probability that a bad outcome might occur he will invest or, if not, he stays away from the risky investment. The investor intends thus to maximize his utility by choosing the optimal share to invest in these two assets by evaluating a certain risk of losing the amount invested in the risky asset. Hence, in order to promote their financial products among retail banking customers, financial institutions have to develop a long-term relationship which is based on trust (Allen and Santomero, 2001).

5.2.2. Trusting Foreign and Domestic Banks

In the context of financial markets and in particular the customer-bank-relationship trust does not only depend on the individual characteristics of a person but also on objective characteristics of the financial system and spatial and cultural differences among consumers and banks (Guiso et al., 2008; Guiso, 2009).

In economies where the legal system is weak and property rights or the enforcement of contracts is not guaranteed, incentives for financial activities are low (Chinn and Ito, 2006). Studies show that educated individuals are more trusting in less corrupt societies while they trust less when the environment can be considered as corrupt (Hakhverdian and Mayne, 2012). In many emerging countries, however, the level of corruption is still remarkable and public institutions often do not guarantee investor protection. Hakhverdian and Mayne (2012), for instance, mention that citizens reward the positive performance of institutions and political actors with trust. They explain that individuals with a higher education level are

better able to learn about the quality of the institution and can thereby better assess whether a system is corrupt or not. Therefore, they argue that trust in political institutions depends on the education level of the individual.

Consumers of financial services might also vary in their overall degree of trust in different financial institutions. Prior experiences and better knowledge about domestic banks and their practices might lead to a lower or greater trust in these financial institutions compared to foreign banks. Moreover, many foreign banks are not as widespread as domestic private banks in emerging economies and individuals might be more familiar with domestic financial institutions.

Although, the literature on financial market participation is not clear about the reasons why investors favor local investments, there is broad support for the fact that investors are more likely to make an investment when this is geographically close (Coval and Moskowitz, 2001; Huberman, 2001; Ivkovic and Weisbenner, 2005). Some studies say that familiarity has a strong influence on the investment decision and that being located geographically close fosters familiarity. They argue that a favor for the local investment reflects people's tendency to be optimistic about the comfortable and the familiar (Huberman, 2001). Others point to additional gains for investors, resulting from better information or other economic benefits, when the bank or financial institution is located close (Ivkovic and Weisbenner, 2005; Agarwal and Hauswald, 2010). Hence, when banks are restricted in their outreach and choice of location they might be disadvantaged to benefit from such an investor's local bias and have to put more effort in winning their customers which is related to additional costs.

Whenever foreign firms are faced with such additional costs this is known as "liability of foreignness" (LoF), which has been widely acknowledged in the literature (Zaheer, 1995; Bell et al., 2012). Miller and Eden (2006) investigate local density of foreign firms in the LoF context and argue that local density moderates the relationship between market experience and foreign subsidiary performance and thus reduces LoF. Studies analyzing the "liability of foreignness" in capital markets point to the existence of additional costs that occur to a foreign bank by operating in the host countries' financial market (Bell et al., 2012).

Additional costs faced by a foreign firm when operating abroad, resulting from a lack of consumer trust refer to so-called "relational hazards" (Denk et al., 2012; Eden and Miller, 2004). The literature, however, considers relational hazards in firm-to-firm interactions e.g. within the buyer-supplier-competitor networks and merely few recent articles mention trust as a relational hazard arising in a customer firm relationship (Bell et al., 2012). When investors are more likely to trust a domestic bank with money than a foreign bank, foreign banks have to put more efforts in establishing consumer trust. This in turn is even more difficult when the

foreign firm is not located geographically close to their customers. The existence of a lack of trust as relational hazard, which might be one reason for a low liability of foreignness, has not been investigated in the context of capital markets and the customer bank relationship so far.

5.2.3. The Indian Banking Sector and Foreign Bank Presence

In India, the number of branches of foreign banks is still very low and even compared to other developing economies, India is characterized with the smallest number of foreign banks operating in the host market (Clarke et al., 2003). Foreign banks in India are starting to extend their market strategies in order to reach the individual and to compete with national private banks in the retail banking sector. Nevertheless, foreign banks in India face strong restrictions and detriments imposed by the home countries' government. This, however, might be rooted in India's history and the long and strict policy managed way of capital account liberalization started in 1991.

With the liberalization of the Indian financial sector the Reserve Bank of India (RBI) authorized small numbers of private banks to enter the market. The more liberal authorization policy of the RBI was supplemented by the Banking Amendment Act (1994), which simplified the banking regulation. In 1995 India became a member of the World Trade Organization (WTO). India's WTO membership grants market access of foreign banks: "In terms of India's commitment to WTO, as a part of market access, India is committed to permit opening of 12 branches [bank offices] of foreign banks every year" (RBI, 2007). The RBI has usually exceeded this commitment and permitted up to 18 new foreign bank offices per year. Till the year 2005 the RBI authorized 33 foreign banks operating a total 245 foreign bank offices in India (Shobhana, 2008). Indian private banks were authorized to expand their business up to 4,962 bank offices in the same period, as compared to a total number of 70,324 bank offices in India in 2005. In a recent study Rezvanian et al. (2008) find empirical evidence that foreign banks in India are operating more efficient compared to Indian banks. They argue that the regulatory authorities should reduce the dominance of public sector intermediation and allow more international banks to expand their operations in India.

5.3. Method

5.3.1. Data

The data employed is the National Data Survey on Saving Patterns of Indians (NDSSP) which is an overall Indian survey and comprises relevant information about Indian households and their financial attitudes. Moreover, individual trust is measured very precisely and obtained for different types of banks e.g. for national and rural banks, but also for foreign and Indian private banks. The data provides information about individuals who possess a savings account at a foreign bank or at an Indian private bank and the size of deposits. Although the NDSSP covers 40,862 household heads, our final sample consists of 19,358 observations. The data offers a substantial number of relevant control variables. In addition to the NDSSP data we make use of official data about the number of foreign as well as the number of Indian private bank offices at the Indian state level which are obtained from the Reserve Bank of India. The data obtained from the RBI enable us further to distinguish between different origins of the foreign banks operating in India.

5.3.2. Measurement of Variables

Trust

Banks differ in their characteristics, financial services they provide and the way of managing risks and therefore often appear differently to customers. Customers of financial services might be willing to trust one financial institution more than an other, which indicates that a customers trust might vary for different types of banks. Although someone can be considered as being trusting, an individual's trust in foreign and private banks can be very different. Knowing about these differences is an important issue in order to identify reasons of non-participation. In our analyses we show that a consumer's trust varies for different financial institutions in India and that large differences in trust between Indian national banks and private banks exist. In particular, we split private bank trust in domestic private and foreign banks and empirically investigate the factors that might determine trust differences among these two.

Trusting Financial Institutions:

In order to investigate the individual trust level in different financial institutions, the respondent was asked in our survey for different types of banks: *"What is your overall degree of confidence with the following financial institutions?"* The respondent could choose between five eligible answers ranking from one to five, being: 1. Yes, I would definitely trust them with my money, 2. I might trust them

with my money, 3. I would not like to trust them with my money, 4. I would definitely not trust them with my money, and 5. Don't know about this type of institution.
Customer Trust in Foreign and Private Banks:
In order to investigate the differences in consumer trust in foreign banks and domestic banks, we use the means of the aforementioned trust variable in foreign banks and private banks and compute the variable *Trust Difference* which consists of three categories. The variable takes on the value one if the average trust in foreign banks is less than in private banks. It takes on the value two if the average trust in both bank types is equal and takes on the value three if trust in foreign banks is higher than for private banks.

Explanatory Variables

Prevalence of Banks: We employ the ratio of foreign banks over private banks at the Indian state level in 2004 - 2005. The variable "FIPBORatio" is metric and allows for identifying effects resulting from a small change in the number of foreign and private banks in India. Nevertheless, the number of foreign banks compared to Indian private banks is very low in most states. These data is obtained from the official database of the Reserve Bank of India.[23]

Financial Relationships: The NDSSP data provide information about individuals possessing a bank account at a foreign or a private bank or both. The variable "ACCFB" takes on the value one if a respondent has an account at a foreign bank and is zero otherwise. The dummy variable "ACCIPB" takes on the value one if a respondent has an account at an Indian private bank and is zero otherwise. The respondents were also asked whether they possess a credit card and could answer with yes or no. The dummy variable "CreditCard" takes on the value one if the respondent states that he has a credit card and is zero otherwise.

Savings: Foreign banks as well as Indian private banks might have a target clientele to whom they offer financial services. Moreover, only those individuals who possess savings to invest, might also be interested in making an investment. The variable employed in order to control for a certain investment potential is the amount the respondent has left after computing income minus expenditures. The NDSSP dataset comprises information about individuals' total earnings from the

[23]The Reserve Bank of India provides annually data on the number of bank branches of foreign and private banks per Indian state. See therefore: Table B13: Commercial banks and their offices in states and union territories - 2004 and 2005. http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook+of+Statistics+on+Indian+Economy

primary and secondary occupation of the respondent during the last 12 months as well as other sources of incomes, e.g. rents or remittances. Moreover, respondents report their annual expenditures for food and grocery, real estate costs, education expenses, medical expenses or repayments of loans and others.

Education: The education level of the respondent is considered by including twelve education dummy variables ranging from "illiterate" to "postgraduate and above", where illiterate is our reference category. Moreover, our dataset comprises information about the respondent's knowledge of the English language. We consider this by including a dummy variable that takes on the value one if the respondent is able to read, speak or write English (as in chapter 3 and chater 4). This is particularly important, because information about financial matters provided by foreign banks might be rather in English than in the local language or Hindu.

Occupation: The NDSSP data contains very detailed information about the occupation of the respondent. The respondents declare their occupation among nine categories including regularly salaried, own account workers, self-employed, temporary employees and independent wage workers and whether their occupation is in the formal or informal sector. The variable "self-employed" takes on the value one if the respondent is self-employed in the formal sector and is zero otherwise. The dummy variable "White-Collar" takes on the value one if the respondent declares that he is employed in a formal professional or managerial position. The reference category is "other work" which refers to an occupation in the informal sector. In India, the occupational status is often related to a certain bank type where the person has a bank account. Moreover, foreign banks often provide financial services to business customers. Hence, controlling for self-employment is very important.

Information Sources: Although foreign as well as private banks are still not very widespread in India, geographical distances can be bridged by the use of modern communication technologies like TV, Internet or the newspaper. Therefore we control for the regular and the irregular use of these communication technologies.

Further, we are able to consider a substantial number of personal characteristics of the respondent, like age, gender, marital status, and the individual's risk attitude.[24]

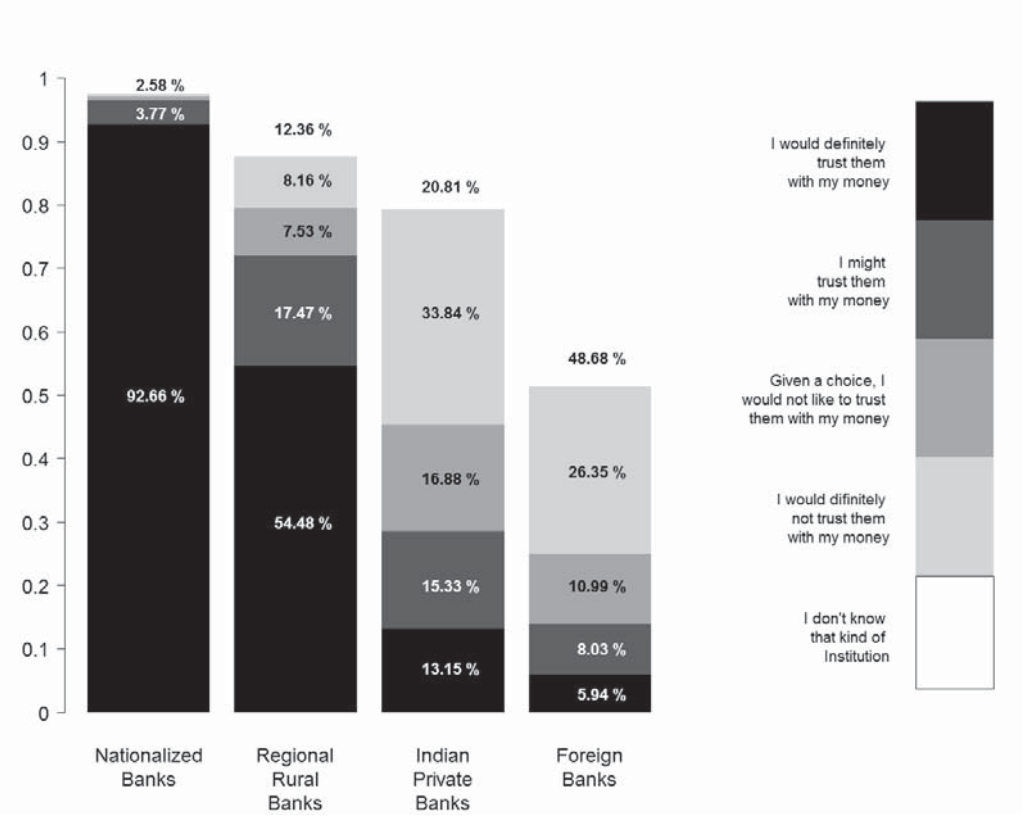
[24]Some of the explanatory variables e.g. "Information Sources", "Education" and "Savings" are employed in chapter 3 and chapter 4

5.3.3. Descriptive Statistics

Figure 5.2 reports the percentaged shares of different trust levels in national banks, regional rural banks, Indian private banks and foreign banks. It shows that most respondents would definitely trust a national bank with their money. Only 6 percent of the respondents state that they would not trust a national bank. Further, 54.48 percent of the sample respondents say that they would trust a regional rural bank. The figure shows that private banks as well as foreign banks are the least trusted financial institutions among the four considered. Only 28 percent of the respondents state that they are willing to trust an Indian private bank. Merely 14 percent of the respondents say that they would trust a foreign bank with their money.

Figure 5.1.: Trust in Banks in India

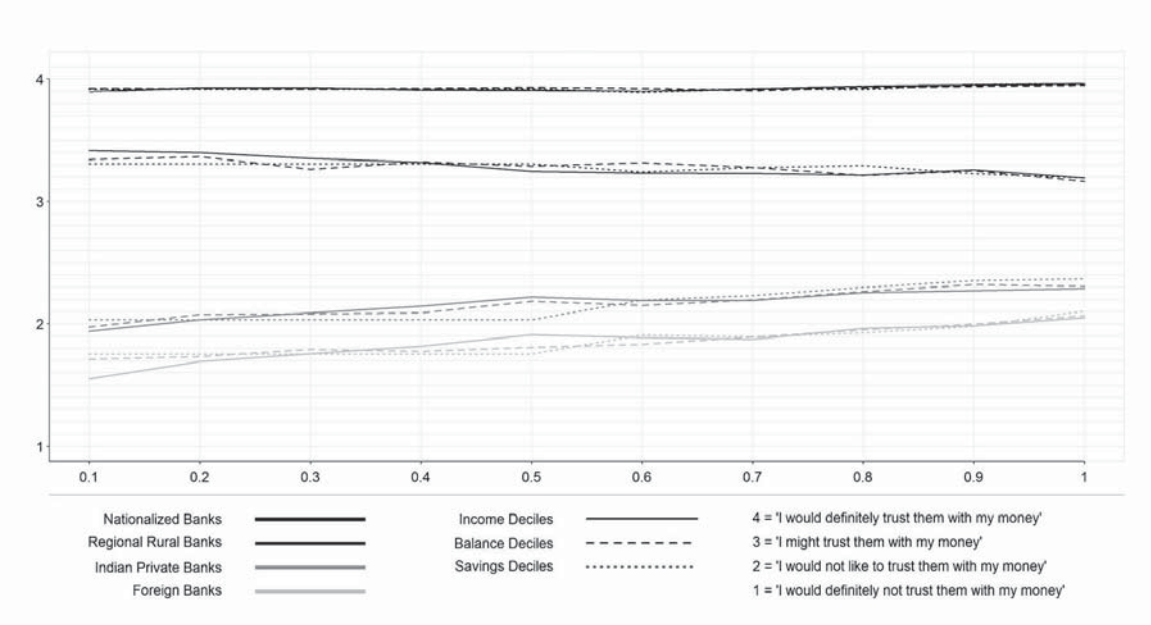
Figure 5.1 shows trust in different banks in India, where trust in national banks, regional rural banks, Indian private banks and foreign banks is investigated. Each bar shows the individual trust in banks where darker gray indicates higher trust and the white color indicates no trust. The percentaged shares of respondents choosing the corresponding trust category are given within the bars.



This result points to differences in consumer trust between state owned banks like national and rural banks and private owned banks being national or foreign. Moreover, differences in trust between private and foreign banks are large compared to trust differences among national banks. However, almost 50 percent state that they do not know about foreign banks. The share of don't know responses is the highest for foreign banks among the four financial institutions considered.

Figure 5.2.: Income Levels and Trust in Banks

Figure 5.2 shows different income deciles and the level of trust in different Banks in India.



However, with respect to the individual trust level in Indian private and foreign banks, both seem to earn a very low level of trust. The difference in trust might be related to differences in per capita income across states. We therefore analyze trust levels for different wealth groups. The NDSSP includes multiple variables measuring the wealth, like income, balance (income minus costs) and savings (the amount saved). We build the deciles of these three wealth variables and compare the average trust levels for all decile-groups. Respondents who cannot tell their trust levels are excluded in Figure 5.2. Moreover, trust is considered as a quasi-metric variable, ranging from 1 being "I would definitely trust this finan-

cial institution with my money" to 4 "I would definitely not trust this financial institution with my money".

Figure 5.1 shows that trust varies between wealth deciles for most bank types considered. Trust in national banks is very high and constant over the wealth deciles considered. Individual trust in regional rural banks decreases with increasing wealth. Furthermore, trust in national private as well as in foreign banks is increasing with higher wealth. Thus, there seems to be a downward trend in trust in regional rural banks and an upward trend for Indian private and foreign banks. Hence, the gaps among trust levels in the different types of banks seem to be lower for wealthy respondents. Moreover, this might point to a greater relevance of private and foreign banks for high-income individuals. Trust trends are robust across wealth variables.

5.4. Econometric Specification

Trusting Financial Institutions

In a first step we analyze the different determinants of trusting an Indian private bank and a foreign bank separately. In doing so, we investigate the relevance of the prevalence of foreign banks vs. Indian private banks at the Indian state level, the importance of existing financial relationships an individual has either with a foreign, private or any other financial institution, the relevance of education on trusting either a foreign bank or an Indian private bank, and the use of information sources.

The dependent variable has four possible outcomes, ranging from outcome one; "yes", I would definitely trust this financial institution with my money to outcome four; "no", I would definitely not trust this financial institution with my money. These analyses are presented in tables 1 and 2 which report the outcomes of the ordered probit models that are employed.

Although foreign banks and private banks might not differ much in their financial services that they provide to their customers in the field of retail banking, the degree of customer trust might be driven by different determinants. Therefore, we estimate two ordered probit models, one for trusting foreign banks and the other one for trusting Indian private banks, and aim to identify the corresponding drivers and their importance for trusting either an Indian private bank or a foreign bank with money.

The investigation of customer trust in foreign and private banks might raise concerns about endogeneity problems. Some of our explanatory variables denote existing financial relationships with a financial institution and one might therefore

argue that trust results from prior experiences with the corresponding financial institution. Moreover, trust is a very complex issue to investigate and it can be argued that omitted variable bias might be an issue as well. In order to consider potential endogeneity problems resulting from current experiences with the financial institution analyzed we make use of a sample of respondents, who do not possess a current account at the respective financial institution. Furthermore, we employ a substantial number of control variables that might influence an individual's trust level in a financial institution e.g. the level of education or the use of information sources. Nevertheless, since our analyses are based on cross-sectional data and therefore do not allow us to investigate an individual's trust in a financial institution over time, we cannot fully rule out these concerns of possible endogeneity.

We argue that a lack of customer trust in foreign banks might be a relevant obstacle for foreign banks operating in the host market. Hence, knowing about the determinants that may influence an individual's decision whether to trust a foreign bank or an Indian private bank is very important. In a second model we therefore investigate the difference in customer trust between Indian private and foreign banks.

Difference in Trust between Domestic Banks and Foreign Banks
As explained in section 2, it might be that individuals in India trust an Indian private bank more than a foreign bank or vice versa. In order to investigate the reasons for a preference for trusting either a foreign bank over an Indian private bank, or preferring to trust an Indian private bank over a foreign bank, or to trusting both equally, we make use of a second model. In the second step we employ a multinomial logit model. The dependent variable is now the difference in customer trust between foreign and private banks and consists of three possible outcomes. The dependent variable takes on the value one if an individual trust is lower for foreign banks than for Indian private banks, it takes on the value two if his trust in both is equal, and takes on the value 3 if the individual's trust is greater for foreign banks than for Indian private banks. We thereby analyze relevant determinants that might shape the decision whether to trust the one or the other financial institution.

5.5. Estimation Results

Consumer Trust in Indian Private Banks
Table 5.1 shows the marginal effects on the four different categories of trusting an Indian private bank after ordered probit regressions. As can be seen from the

table an increase in the number of foreign bank offices relatively to private bank offices does not show a significant effect on trusting an Indian private bank. Our results show that among the variables denoting *financial relationships*, individuals who possess a bank account at an Indian private bank are more likely to trust this financial institution. Having an Indian private bank account is related to a 8.5 percentage points higher probability to respond that one would definitely trust this financial institution with money, and related to a 3.3 percentage points higher probability to say that one might trust a private bank. The sign of the effect is reversed for categories three and four. Individuals with a bank account at an Indian private bank for instance have a 0.1 percentage point lower probability to state that they might not trust this financial institution and a 11 percentage points lower probability to say that they would definitely not trust this financial institution with their money.

Those respondents who are in use of a credit card or an ATM card are more likely to trust an Indian private bank with their money compared to those who do not possess these financial instruments. Having a credit card, for instance, is related to a 4.2 percentage points higher probability to answer with "yes, I would definitely trust this financial institution with my money", with a 2 percentage points higher probability to say that one might trust this institution and decreases the probability by 5.8 percentage points to say that one might definitely not trust this financial institution. The negative effect of possessing a credit card on the probability that one answers that he might trust an Indian private bank is only significant at the 10 percent level. The marginal effect of having a Kisan card is negative on the probability to trust an Indian private bank. A Kisan card is a type of credit card that is provided by the Indian government to farmers in order to facilitate access to credit.

The marginal effect of savings is positive but not very large. The effect is significant in three of four categories and it is insignificant on the probability to be alloted to category three.

An increasing *education level* of the respondent seems to lower the probability of trusting an Indian private bank. This is a very interesting result, because the size of the marginal effects are increasing with an increasing education level as well. For instance, having a post-graduate degree is related to a 3.7 percentage points lower probability to say that one would definitely trust an Indian private bank whereas it increases the probability to state that one would definitely not trust this financial institution with money by 6.2 percentage points. On the other hand, being able to speak, read, or write English is related to a 1.6 percentage points higher probability to trust a private bank definitely, and lowers the probability not to trust this financial institution by 2.5 percentage points. The marginal effects on the probability to be assigned to the categories in between, are very small and the effect for category four, that one might trust a private bank is not significant.

The *use of information sources* is also relevant for trusting an Indian private bank. In particular the daily use of radio and TV as well as the daily use of Internet and reading the newspaper is positively related to trusting an Indian private bank.

The explanatory variables denoting the *occupation* of an individual do not show a significant effect on the probability to trust an Indian private bank.

Among the *personal characteristics*, an individual's risk attitude is very important for the probability of trusting an Indian private bank. Individuals who can be considered as being risk averse have a 2.8 percentage points lower probability to say that they would definitely trust an Indian private bank, and have a 1.5 percentage points lower probability to say that they might trust this financial institution, and a 4.4 percentage points higher probability to state that they would definitely not trust an Indian private bank with their money.

Consumer Trust in Foreign Banks

Table 5.2 shows the marginal effects on the probability to trust a foreign bank with money. The *prevalence of foreign banks* at the Indian state level is very important for customer trust in a foreign bank. An increase in the number of foreign bank offices relative to the number of private bank offices per Indian state is related to an 8 percentage point higher probability to say than one would definitely trust a foreign bank, and related to a 6.3 percentage points higher probability to say that one might trust a foreign bank with money. The marginal effect is negative for categories three and four. This shows that an increase in the number of foreign banks relative to the number of Indian private banks lowers the probability to say that one might rather not trust a foreign bank by 3.1 percentage points. The largest marginal effect is reported for category four, which indicates that the probability that an individual would definitely not trust a foreign bank with money is 17.3 percentage points lower when the presence of foreign banks is high compared to Indian private banks.

The explanatory variables denoting *financial relationships* show partly significant marginal effects. Having a bank account at a foreign bank, for instance, is positively related to trust a foreign bank with money, whereas having a bank account at an Indian private bank does not seem to be relevant for trusting a foreign bank with money. Possessing a credit card as well as an ATM card are both relevant for trusting a foreign bank with money. The effects of having an ATM card are slightly larger than those for the possession of a credit card. Having an ATM card increases the probability of saying that one would definitely trust a foreign bank with money by 5 percentage points, and it increases the probability to say that one might trust a foreign bank with money by 3.4 percentage points.

The effect is still positive for category four. The marginal effect is negative for the fourth category of the dependent variable, denoting that the probability of not trusting a foreign bank is lowered by 9.5 percentage points.

The *education level* of an individual does not seem to be relevant for trusting a foreign bank with money, which is a very interesting result compared to the outcomes of the education variables in Table 2.1. Not using *information sources*, like radio or TV at all, is negatively related to trusting a foreign bank with money, whereas the daily use of these information sources does not report significant marginal effects, the effect is merely significant at the 10 percent level for the first category. Moreover, individuals whose *occupational status* is self-employed have a higher probability to trust a foreign bank, compared to other own account workers. Being employed in the formal sector does not show any significant effects for trusting a foreign bank. Among the personal characteristics, individuals who can be considered as risk-averse are less likely to trust a foreign bank. The marginal effects, however, are very small.

Difference in Consumer Trust between Domestic and Foreign Banks

Table 5.3 reports the estimation results of multinomial regressions where the dependent variable denotes the trust difference between foreign and private banks. The first outcome of the dependent variable takes on the value one if the respondent trusts an Indian private bank more than a foreign bank (column (1)), it takes on the value 2 if trust in both foreign and private bank is equal (column (2)), and takes on the value 3 if an individual trusts a foreign bank more than an Indian private bank (column (3)).

The *prevalence of banks* does not seem to be very important for trusting one financial institution more than the other. An increase in the number of foreign banks relatively to private banks increases the probability to trust a foreign bank by 4.1 percentage points. The effect, however, is only significant at the 10 percent level.

Almost all explanatory variables denoting *financial relationships* are important for trusting a foreign bank more than a private bank, only the possession of a bank account at an Indian private bank increases the probability by 7.7 percentage points to trust an Indian private bank more than a foreign bank. It is negatively related to trust both equally and also negative on the probability to trust a foreign bank more than an Indian private bank. The effect is reversed and larger for having a bank account at a foreign bank. Having a bank account at a foreign bank is related to a 17 percentage points higher probability to trust a foreign bank with money and decreases the probability by 29 percentage points to trust a foreign bank and an Indian private bank equally.

Having a credit card increases the probability to trust a foreign bank more than an Indian private bank with money by 2.3 percentage points, whereas it does not show a significant effect the other way round. The use of a Kisan card as well as the use of an ATM card increases the probability to trust a foreign bank more than an Indian private bank. On the other hand, individuals who possess a Kisan card have a 5 percentage points lower probability to trust an Indian private bank more than a foreign bank.

These results are very interesting because individuals who are more sophisticated in the use of financial instruments in general seem to be more likely to trust a foreign bank more than an Indian private banks.

A higher *education* level increases the probability to trust a foreign bank more than an Indian private bank. For instance, having a technical diploma increases the probability to trust a foreign bank more than an Indian private bank by 7 percentage points, whereas it decreases the probability to trust an Indian private bank more than a foreign bank by 5.2 percentage points. Having a professional degree is even related to a 11 percentage points higher probability to trust a foreign bank more than an Indian private bank. Being able to speak, read, or write English, on the other hand, lowers the probability to trust a foreign bank more than an Indian private bank by 1.4 percentage points whereas this effect is not significant for the remaining two categories.

Individuals who are using *information sources* like the radio or TV every day are more likely to trust a private bank more than a foreign bank with their money. The effect is not significant for the remaining two categories. On the other hand individuals who use the Internet and read the newspaper every day have a 1.3 percentage points higher probability to trust a foreign bank more than a domestic private bank. Not using the Internet and the newspaper at all increases the probability to trust both equally by 6 percentage points. Hence, the use of information sources seems to be very important for trusting domestic private as well as foreign financial institutions.

The *occupational status* of a respondent shows only a significant effect for being self-employed. This indicates that those who are self-employed are more likely to trust a foreign bank than a domestic private bank with their money. Among the *personal characteristics* risk attitude seems to be relevant as well. Individuals who can be considered as being risk-averse are less likely to trust a domestic private bank more than a foreign bank with their money.

5.6. Discussion and Conclusion

In many emerging economies, retail banking is a growing sector and also foreign banks start to compete with domestic banks in the host market. A lack of customer trust in domestic banks or in foreign banks might impose disadvantages for the respective financial institutions. Hence, customer trust in banks is a relevant issue that has to be considered. There are many studies that investigate the role of trust on financial market participation or the importance of trust for making an investment decision under risk (Guiso et al., 2008; La Porta et al., 1997). However, knowledge about customer trust in banks and potential differences between trust in foreign banks and trust in domestic banks has not been empirically examined as yet.

In this paper, we compare consumer trust in domestic banks with trust in foreign banks and empirically investigate the determinants that might explain the difference between consumer trust in domestic banks and trust in foreign banks. In particular we try to answer the questions: *Do consumers have more in confidence in domestic banks or do they have more confidence in foreign banks,* and *which factors may explain differences between trust in domestic banks and trust in foreign banks?*

Our results show that a difference in customer trust between foreign and domestic banks exists. Individuals in India are on average less likely to trust a foreign bank than a domestic private bank with their money. Foreign banks which compete with private domestic banks in the host market, might therefore be faced with higher efforts and costs for establish customer trust compared to domestic private banks. This is a relevant issue which complements the liability of foreignness literature by showing that a low level of customer trust - as a potential relational hazard - exists for foreign banks in emerging economies. Foreign banks might then need to put more effort in establishing customer trust which is related to higher costs that do not occur a domestic private bank. The current liability of foreignness literature rather focuses on disadvantages for foreign banks operating in an emerging economy that are related to additional costs resulting from obstacles inhibiting market entry (Ataullah and Le, 2004; Gormley, 2010).

Our empirical results show, for instance, that a higher education level decreases the probability to trust a domestic bank with money but increases the probability to trust a foreign bank. Individuals with a higher educational degree might be more often involved in financial relationships than others and therefore they might be better informed about financial services provided by different financial institutions. Consumers of financial services might also be better informed about the practices of a foreign bank and therefore better able to compare them to their domestic counterparts. Existing studies provide empirical evidence that better

educated individuals are able to assess and value the institutional quality, and are therefore more likely to trust political institutions in countries with a lower level of corruption than less educated individuals (Hakhverdian and Mayne, 2012). In India, the corruption level is still very high, and better educated individuals might be aware of potential issues of legal unconformity in which domestic private banks might be involved. A possible explanation for our results might be the weak institutional and legislative framework and poor investor protection which is a common issue in many emerging economies. At the same time, corruption is often prevalent and domestic private financial institutions might be more prone to behave in a way that is not conform to domestic guidelines. Foreign banks e.g. who have their headquarters in developed countries might act more reliable in emerging markets because reputational damage would also hit them strongly in their country of origin. Therefore foreign financial institutions might appear more reliable to potential customers.

Moreover, our results show that regional determinants e.g. the number of bank branches of foreign banks, might be more important for establishing customer trust in foreign banks. For instance, our results indicate that consumer trust in foreign banks is higher in states where the share of foreign banks to domestic private banks is relatively high. Whereas the number of foreign banks relatively to the number of Indian private banks seems to be relevant for trusting foreign banks, it does not show a significant effect for trusting domestic banks. Therefore, consumers of financial services, who live in a region where the number of foreign banks is high, might be more familiar and knowledgeable with these institutions. Government regulations that inhibit the spread of foreign banks might hence induce competitive disadvantages for foreign banks compared to domestic banks which are not regulated in the same extend and allowed to open their bank branches mostly unrestricted.

Our results further indicate that financial decisions made *ex-ante* e.g. having a credit card or an ATM card is positively related to trust a foreign bank more than a domestic bank. Hence, a customer of financial services with a certain level of financial sophistication is more likely to trust a foreign bank more than a domestic bank. Financial information can also be provided via radio, Internet, TV or the newspaper. Not using these information sources at all decreases the probability to trust a domestic bank as well as a foreign bank with money. This result suggests that a lack of information leads to an indifferent behavior towards foreign and domestic banks. Another variable which is linked to a lower probability to trust a domestic private bank more than a foreign bank is risk attitude. Individuals who can be considered as being risk averse are significantly less likely to trust a domestic bank more than a foreign bank. Whereas being risk averse increases the probability to trust foreign as well as domestic banks equally.

All in all, our results show that a difference in customer trust between domestic banks and foreign banks exist and that individuals who are better informed about financial matters are less likely to trust a domestic private bank and more likely to trust a foreign bank with their money. Furthermore, our results point to the relevance of prior experience with financial matters and that these experiences result in a preference to trust a foreign bank more than a domestic bank with money.

These results detect important means for foreign banks operating abroad and provide relevant insights for authorities in the host country. A better understanding of the determinants of whether to trust a domestic private bank more than a foreign bank, or vice versa, might contribute to reduce the competitive disadvantage for foreign banks operating in the host market.

Future research should consider the corruption level per state in India because there is a lack of research with respect to the level of corruption in emerging economies and trust in banks. While there are numerous studies investigating the effect of corruption on economic outcomes there are no analyses on the relationship of corruption, trust and banking at the individual level. For instance, the difference in consumer trust in foreign and private banks can be investigated at the state level in India by taking into account the level of corruption of the respective state.

Finally we have to acknowledge that this study has the following limitations. First, we cannot fully rule out endogeneity issues resulting from prior investment experiences of those respondents who possess a bank account either at a foreign or a domestic private bank. Although these financial experiences are made ex-ante and the respondent was asked about his level of trust in the corresponding financial institution during the time the survey was made, endogeneity might still be an issue. Second, our empirical analyses are based on cross-sectional data which does not allow us to investigate the variation in consumer trust over time. Hence, our results do not provide inferences which can be considered as being causal.

Table 5.1.: Trust in Private Banks

	I definitely trust	I might trust	I might not trust	I definitely not trust
Prevalence of Banks				
FIPBORatio	0.0336	0.0177	-0.0002	-0.0511
	(0.0230)	(0.0121)	(0.00033)	(0.0350)
Fiancial Relationships				
AccIPB	0.0851***	0.0329***	-0.0093***	-0.109***
	(0.0124)	(0.0033)	(0.0024)	(0.0133)
AccFB	-0.0013	-0.0006	4.03e-0	0.0019
	(0.0494)	(0.0263)	(4.94e-0)	(0.0757)
Credit card	0.0421***	0.0190***	-0.0027*	-0.0584***
	(0.0134)	(0.0051)	(0.0015)	(0.0170)
Kisan card	-0.0358***	-0.0216***	-0.0022	0.0596***
	(0.0109)	(0.0074)	(0.0015)	(0.0199)
ATM card	0.0545***	0.0241***	-0.0039***	-0.0747***
	(0.0089)	(0.0032)	(0.0012)	(0.0110)
Savings	0.0003**	0.0002**	-1.91e-0	-0.0005**
	(0.0001)	(8.52e-0)	(2.72e-0)	(0.0002)
Education				
Literate no schooling	-0.0065	-0.0035	-3.89e-0	0.0102
	(0.0149)	(0.0082)	(0.0002)	(0.0234)
Less than primary	-0.0298***	-0.0175**	-0.0014	0.0487***
	(0.0106)	(0.0068)	(0.0011)	(0.0185)
Primary school	-0.0317***	-0.0185***	-0.0013	0.0516***
	(0.0086)	(0.0055)	(0.0008)	(0.0150)
Middle school	-0.0347***	-0.0199***	-0.0013*	0.0559***
	(0.0083)	(0.0052)	(0.0007)	(0.0143)
High school	-0.0207**	-0.0114**	-0.0003	0.0324**
	(0.0091)	(0.0052)	(0.0004)	(0.0148)
Higher secondary	-0.0160	-0.0088	-0.0003	0.0251
	(0.0104)	(0.0060)	(0.0004)	(0.0168)
Technical diploma	-0.0296**	-0.0174*	-0.0014	0.0485**
	(0.0139)	(0.0091)	(0.0015)	(0.0246)
Graduate	-0.0293***	-0.0167***	-0.0010	0.0470***
	(0.0101)	(0.0062)	(0.0008)	(0.0171)
Professional degree	-0.0330**	-0.0197**	-0.0018	0.0545**
	(0.0136)	(0.0091)	(0.0017)	(0.0245)
Post graduate	-0.0370***	-0.0223***	-0.0023	0.0617***
	(0.0124)	(0.0085)	(0.0018)	(0.0227)
English	0.0163***	0.0086***	-3.42e-0	-0.0249***
	(0.0055)	(0.0029)	(0.0001)	(0.0085)
Information Sources				
Daily use of radio and TV	0.0163***	0.0088***	0.0001	-0.0254***
	(0.0055)	(0.0031)	(0.0001)	(0.0088)
No use of radio and TV	-0.0179**	-0.0099**	-0.0004	0.0283**
	(0.0084)	(0.0049)	(0.0004)	(0.0138)
Daily use of newspaper and Internet	0.0131**	0.0069**	-5.30e-0	-0.0200**
	(0.0054)	(0.0028)	(9.69e-0)	(0.0082)
No use of newspaper and Internet	-0.0351***	-0.0198***	-0.0009**	0.0559***
	(0.0063)	(0.0038)	(0.0004)	(0.0105)
Occupation				
White collar	0.0087*	0.0046*	-9.28e-0	-0.0133*
	(0.0050)	(0.0026)	(0.0001)	(0.0076)
Self employed	8.38e-0	4.41e-0	-4.61e-0	-0.0001
	(0.0061)	(0.0032)	(3.43e-0)	(0.0093)
Personal Characteristics				
Risk Attitude	-0.0286***	-0.0150***	0.0001	0.0435***
	(0.0029)	(0.0015)	(0.0002)	(0.0044)
Age	0.0001	7.26e-0	-7.44e-0	-0.0002
	(0.0002)	(9.49e-0)	(1.40e-0)	(0.0003)
Gender	0.0090	0.0048	-4.89e-0	-0.0138
	(0.0068)	(0.0036)	(7.57e-0)	(0.0103)

Table 5.1 reports the marginal effects at means after ordered probit regressions for trust in Indian private banks. The dependent variable has four possible outcomes which are denoted with (1) Yes, I would definitely trust this bank with my money, (2) I might trust it with my money. (3) Given a choice, I would rather not trust it with my money and (4) I would definitely not trust it with my money. The total number of observation is 19,405. Robust standard errors are given in parentheses. ***, **, * denote significance at the 1%, 5%, 10% level.

Table 5.2.: Trust in Foreign Banks

	I definitely trust	I might trust	I might not trust	I definitely not trust
Prevalence of Banks				
FIPBORatio	0.0798***	0.0625***	0.0306***	-0.173***
	(0.0173)	(0.0136)	(0.0067)	(0.0375)
Financial Relationships				
AccIPB	0.0091	0.0069	0.0031	-0.0192
	(0.0078)	(0.0057)	(0.0025)	(0.0162)
AccFB	0.0912*	0.0519**	0.0113***	-0.154**
	(0.0547)	(0.0218)	(0.0032)	(0.0733)
Credit card	0.0323***	0.0226***	0.0088***	-0.0638***
	(0.0104)	(0.0065)	(0.0019)	(0.0188)
Kisan card	-0.0063	-0.0050	-0.0026	0.0139
	(0.0091)	(0.0074)	(0.0039)	(0.0205)
ATM card	0.0498***	0.0336***	0.0121***	-0.0954***
	(0.0072)	(0.0042)	(0.0010)	(0.0123)
Savings	0.0004***	0.0003***	0.0002***	-0.0009***
	(0.0001)	(9.24e-05)	(4.54e-05)	(0.0002)
Education				
Literate no schooling	0.0086	0.0065	0.0030	-0.0183
	(0.0124)	(0.0091)	(0.0039)	(0.0255)
Less than primary	-0.0111	-0.0091	-0.0047	0.0250
	(0.0085)	(0.0072)	(0.0040)	(0.0198)
Primary school	-0.0116*	-0.0094	-0.0049	0.0260
	(0.0069)	(0.0058)	(0.0032)	(0.0160)
Middle school	-0.0067	-0.0053	-0.0026	0.0147
	(0.0068)	(0.0055)	(0.0028)	(0.0153)
High school	-0.0044	-0.0035	-0.0017	0.0096
	(0.0073)	(0.0058)	(0.0029)	(0.0160)
Higher secondary	0.0125	0.0094	0.0043	-0.0263
	(0.0088)	(0.0064)	(0.0027)	(0.0181)
Technical diploma	0.0190	0.0139	0.0059*	-0.0389
	(0.0133)	(0.0091)	(0.0033)	(0.0257)
Graduate	0.0099	0.0076	0.0035	-0.0210
	(0.0088)	(0.0065)	(0.0028)	(0.0183)
Professional degree	0.0184	0.0135	0.00583*	-0.0377
	(0.0132)	(0.0090)	(0.0033)	(0.0256)
Post graduate	-0.0011	-0.0008	-0.0004	0.0023
	(0.0109)	(0.0086)	(0.0043)	(0.0238)
English	0.0068	0.0054	0.0026	-0.0148
	(0.0042)	(0.0033)	(0.0016)	(0.0091)
Information Sources				
Daily use of radio and TV	0.0071*	0.0056	0.0028	-0.0155
	(0.0043)	(0.0034)	(0.0018)	(0.0095)
No use of radio and TV	-0.0177***	-0.0147***	-0.0079**	0.0403***
	(0.0062)	(0.0054)	(0.0032)	(0.0149)
Daily use of newspaper and Internet	0.0189***	0.0149***	0.0073***	-0.0411***
	(0.0041)	(0.0032)	(0.0016)	(0.0088)
No use of newspaper and Internet	-0.0252***	-0.0207***	-0.0111***	0.0570***
	(0.0047)	(0.0041)	(0.0024)	(0.0112)
Occupation				
White collar	0.0044	0.0034	0.0017	-0.0096
	(0.0038)	(0.0029)	(0.0014)	(0.0082)
Self employed	0.0087*	0.0066*	0.0031*	-0.0185*
	(0.0048)	(0.0036)	(0.0016)	(0.0100)
Personal Characteristics				
Risk Attitude	-0.0166***	-0.0130***	-0.0064***	0.0360***
	(0.0022)	(0.0017)	(0.0008)	(0.0047)
Age	0.0001	0.0001	5.06e-05	-0.0003
	(0.0001)	(0.0001)	(5.25e-05)	(0.0003)
Gender	-0.0097*	-0.0076*	-0.0037*	0.0210*
	(0.0052)	(0.0041)	(0.0020)	(0.0113)

Table 5.2 reports the marginal effects at means after ordered probit regressions for trust in foreign banks. The dependent variable has four possible outcomes which are denoted with (1) Yes, I would definitely trust this bank with my money, (2) I might trust it with my money. (3) Given a choice I would rather not trust it with my money and (4) I would definitely not trust it with my money. The total number of observation is 19,405. Robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

Table 5.3.: Trust Difference: Foreign and Private Banks

	(1)	(2)	(3)
Prevalence of Banks			
FIPBORatio	-0.0328	-0.0082	0.0411*
	(0.0389)	(0.0414)	(0.0243)
Financial Relationships			
AccIPB	0.0773***	-0.0559***	-0.0214**
	(0.0172)	(0.0178)	(0.0092)
AccFB	0.118	-0.287***	0.169**
	(0.0903)	(0.0867)	(0.0775)
Credit card	0.0205	-0.0434**	0.0229*
	(0.0202)	(0.0215)	(0.0127)
Kisan card	-0.0490**	0.0180	0.0310**
	(0.0195)	(0.0219)	(0.0145)
ATM card	-0.0077	-0.0061	0.0139*
	(0.0127)	(0.0138)	(0.0082)
Savings	-5.37e-05	-3.48e-05	8.85e-05
	(0.0003)	(0.0003)	(0.0001)
Education			
Literate no schooling	0.0036	-0.0076	0.0041
	(0.0252)	(0.0275)	(0.0193)
Less than primary	-0.0431**	0.0338	0.0094
	(0.0181)	(0.0207)	(0.0150)
Primary school	-0.0375**	0.0505***	-0.0130
	(0.0149)	(0.0166)	(0.0110)
Middle school	-0.0437***	0.0341**	0.0096
	(0.0143)	(0.0162)	(0.0117)
High school	-0.0250	0.0121	0.0130
	(0.0154)	(0.0172)	(0.0122)
Higher secondary	-0.0296*	-0.0074	0.0371**
	(0.0172)	(0.0199)	(0.0157)
Technical diploma	-0.0524**	-0.0167	0.0691***
	(0.0235)	(0.0289)	(0.0249)
Graduate	-0.0370**	-0.0258	0.0628***
	(0.0173)	(0.0204)	(0.0173)
Professional degree	-0.0259	-0.0820***	0.108***
	(0.0248)	(0.0297)	(0.0277)
Post graduate	-0.0317	-0.0136	0.0454**
	(0.0224)	(0.0263)	(0.0213)
English	0.0008	0.0135	-0.0144**
	(0.0093)	(0.0099)	(0.0062)
Information Sources			
Daily use of radio and TV	0.0173*	-0.0087	-0.0086
	(0.0094)	(0.0103)	(0.0065)
No use of radio and TV	-0.0028	0.0253	-0.0224**
	(0.0148)	(0.0157)	(0.0090)
Daily use of newspaper and Internet	-0.0168*	0.0037	0.0132**
	(0.0089)	(0.0096)	(0.0059)
No use of newspaper and Internet	-0.0450***	0.0608***	-0.0158**
	(0.0108)	(0.0118)	(0.0074)
Occupation			
White collar	0.0108	-0.0072	-0.0036
	(0.0083)	(0.0089)	(0.0054)
Self employed	-0.0187*	0.0068	0.0118*
	(0.0100)	(0.0109)	(0.0068)
Personal Characteristics			
Risk Attitude	-0.0176***	0.0162***	0.0014
	(0.0047)	(0.0051)	(0.0031)
Age	0.0004	-0.0004	7.05e-0
	(0.0003)	(0.0003)	(0.0002)
Gender	0.0277**	-0.0240**	-0.0037
	(0.0110)	(0.0120)	(0.0075)
Observations	5,961	12,402	2,153
Predicted Pr	0.291	0.607	0.101
Actual Pr	0.291	0.604	0.100

Table 5.3 reports the marginal effects at means after multinomial logit regression on the probability to trust a domestic private bank more than a foreign bank with money (1), to trust a domestic private bank and a foreign bank similarly, and to trust a foreign bank more than a domestic private bank (3). Predicted probabilities are reported on the base of outcome (2). Robust standard errors are given in parentheses. ***, **, * denote significant at the 1, 5, 10 percent level.

6. Conclusions

This concluding section makes an overall resumé of the single outcomes of this thesis, reveals their importance for financial market policies today, and gives implications aiming at improving financial market participation of households in India. We focus on relevant topics of the Indian financial market studied throughout this thesis. For each topic we discuss our findings, ideas for future research, and policy implications. In other words: We try to give answers to the question - *"What can we learn from India for financial market development in a much broader sense, and which way future research has to go?"*

6.1. Summary

The development of financial markets in emerging economies, has received much attention in the past years because financial development is considered to be related to economic growth and the reduction of poverty and inequality. In particular developing economies like India, where the demand for financial services is still low, offer an adequate framework for investigating financial market development focusing on household demand for financial products. Households are important consumers of financial services, and a low level of financial market participation might not only hamper financial market development in general, but may also lead to economic drawbacks for individuals who are not using formal financial services (Demirgüc-Kunt and Klapper, 2012). While financial products like group savings, are for instance, targeted to low income individuals as well as to backward caste people in India, this thesis shows that a high fraction of individuals belonging to a backward caste are often not aware of these financial products. However, reasons why some individuals make use of formal financial services while others do not are still insufficiently studied as yet. This thesis, sheds light on different determinants of financial market participation of individuals in India. In doing so, relevant and so far less considered topics like financial literacy and trust in financial institutions are investigated.

Chapter 2 provides an overview of the Indian financial market and gives some insights into selected topics of supply and demand for financial services. This

chapter provides, for instance, information about why some individuals use a bank account and why others do not. Moreover, this chapter shows recent outcomes of financial inclusion policies undertaken by the Indian government, and reveals problems that might be important in the context of financial market development in India.

Chapter 3 empirically investigates the relevance of social interaction and caste affiliation for the individuals' awareness of financial instruments and investment behavior of households in India. The empirical results, which are based on a large scale survey of savings patterns of Indians, suggest that a positive relationship between financial literacy and social interaction exists. In particular, individuals who are affiliated to backward castes have a lower probability of being aware of various financial instruments. In contrast, the results provide only weak empirical evidence for a direct effect of caste affiliation and social interaction on investment behavior.

Chapter 4 analyzes the relationship between individual trust in financial institutions and individual access to these institutions. Our results indicate that individuals who report that they do not have access to certain financial institutions within a commutable distance of one day are less likely to trust these institutions with their money. The results provide further evidence that differences in trust can be explained to some extent by differences in individual access.

Chapter 5 empirically investigates differences in consumer trust in foreign and domestic banks in the customer retail banking sector. The results suggest that people in India are less likely to trust foreign banks with their money than private domestic banks. This result holds even if we control for a large number of relevant factors that might affect customer trust in financial institutions. The results are reversed if an individual has a higher level of education. Better educated Indians, tend to have more confidence in foreign banks than in Indian private banks. Our results show further, that in Indian states where the ratio of foreign banks to domestic private banks is relatively high, customer trust in foreign banks is higher than in domestic private banks.

6.2. Implications for Public Policies and Future Research

A better understanding of how to increase financial market participation among individuals in developing countries has become a major element in financial inclusion policies and economic research. It is therefore important to know how policies can improve their programs in order to increase financial market participation among

the population, and thereby promote the development of their financial market. The outcomes of this thesis are referred to India, but topics like financial literacy and social interaction, as well as the relevance of financial access for trusting financial institutions might be important to investigate in other developing countries as well.

Implication for Public Policies

In India, caste customs are still prevalent and may therefore affect the economic as well as the financial decisions of individuals. Improving financial literacy of backward castes tend to be an important mean to improve their savings decision and, in turn, the standard of living of backward castes since they might have a lower financial knowledge than individuals belonging to other castes. Therefore, financial literacy education of backward castes may not only have a positive direct effect on the financial literacy of individuals participating in government programs but may also generate positive externalities because of word-of-mouth learning. In order to increase the effectiveness of financial literacy programs, differences between different social groups should be taken into account. Moreover, policies should consider that the determinants of financial literacy and determinants of investment behavior, although they complement one another, might be different. Policy programs aiming at increasing the participation of private households in financial markets could therefore combine financial literacy education with policy measures creating investment incentives since they complement one another.

Furthermore, a large physical distance that an individual cannot overcome e.g. within a commutable distance of one day might also hinder the investment decision indirectly. The availability of financial access in India seems to be very important in order to enhance customer trust in a particular financial institution. Public policies could offer means to bridge physical distances. Although, the Indian government implemented mobile banking to overcome difficulties for individuals in reaching a bank branch, the usage of this tool is still very low (Demirgüc-Kunt and Klapper, 2012). Therefore it might be important for policy makers as well as for financial institutions to consider the relevance of physical access to a financial institution for promoting customer trust in financial instittions. Moreover, financial inclusion programs can be linked with policies creating investment incentives because the willingness to trust a financial institution with money can be considered as a prestage of investment.

However, the individual level of trust in a particular financial institution is also related to other determinants e.g. the level of education of the individual or the number of bank branches in the state where the individual lives. A lack of consumer trust in foreign banks may constitute an important disadvantage for foreign banks operating in a host market. Domestic authorities should take into account that

foreign banks may be very important for their domestic customers. In particular, foreign banks may serve the needs of the growing middle class which often holds economic relationships abroad.

All in all, the thesis shows, that in order incentivize the investment decision of individuals in India, and to motivate participation in the formal financial market three major issues may be important. First, the creation of awareness of financial products and their characteristics is very relevant as well as the education of consumers on using financial tools e.g. ATM-cards, or mobile banking. Second, socioeconomic characteristics of individuals should be considered when implementing policy programs on the usage of financial products. Third, improving attitudes of individuals about formal financial institutions, and their trust in them, may be an important mean to convert savings into formal investments. However, making consumers understand their rights and responsibilities as clients of financial services is a key element that public policies should also consider.

Future Research and Limitations

Whereas in developed countries knowledge of financial literacy measures are becoming more sophisticated, in developing economies the measurement of financial literacy is not very clear cut. Further research on financial literacy in developing economies is therefore required. Future research could focus particularly on how to measure financial literacy in more detail, which ways of financial knowledge distribution work best and how they can be directly linked to investments or savings. Furthermore, the usage of longitudinal data would be suited to investigate the relationships considered in this thesis over a longer time period.

With respect to trust, the literature is clear about it's economic importance for the investment decision. However, trust is a complex issue and the informative value of surveys is still limited. Future research might go other ways to measure the determinants of trust in the financial context, such as revised trust games - as recently shown by Sapienza et al. (2013), or experimental analyses. Randomized control trials in developing economies can be an important way helping to understand trust in economic decisions of individuals.

In sum, this thesis provides insights in so far less considered topics of demand for financial services and investments in a developing country named India. Although, the National Data Survey on Savings Patterns of Indians (NDSSP).[25], comprises unique and very detailed information there are still limitations that should be mentioned. A potential concern with respect to the empirical analyses are the

[25]In order to check whether the NDSSP is representative, we compared selected items of our sample with official statistics obtained from the Reserve Bank of India. Since results did not differ much the NDSSP dataset seems to be representative at the Indian state-level.

following. First, our analyses are based on cross sectional data and therefore do not allow us to investigate the analyzed relationships over time. A second concern are omitted variables. In order to avoid omitted variable biases, we make use of a substantial number of control variables in the econometric analyses. Thirdly, potential problems arising from reverse causality are considered and discussed in the corresponding chapters. Since most of the relations that we study are not causal, our policy implications should be considered carefully.

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The National Data Survey on Savings Patterns of Indians (NDSSP)

NATIONAL DATA SURVEY ON SAVINGS PATTERNS OF INDIANS – 2004/05
Workforce Survey Schedule

☐☐☐ Listed/contact household sl. no.

☐☐ Selected household sl. no. Schedule Number: ☐☐☐☐☐☐☐☐☐

I am employed by ORG-MARG, India's largest market research firm, and I am part of a team of 600 people conducting a nation-wide survey on savings habits of all Indians. The information we need to collect from you as a citizen of this country is of critical importance and will form the basis of many policies to be framed by government of India in the future.

Confidentiality: I solemnly promise that all of the information provided by you will be strictly confidential and your personal details will not be recorded anywhere during the interview.

INTERVIEW DETAILS

DATE OF INTERVIEW	
	DAY MONTH
STARTING TIME OF INTERVIEW	
	Hrs Mts
ENDING TIME OF INTERVIEW	
	Hrs Mts
NAME OF THE INTERVIEWER	
BACK CHECKED BY	
DATE	

SUPERVISOR/EDITOR DETAIL

	SUPERVISOR (to be filled by interviewer)	FIELD EDITOR (to be filled by editor)
NAME		
DATE		

Before starting work in the Enumeration Area, the interviewer must fill the first column (name of supervisor of the team).

HOUSEHOLD IDENTIFICATION

1.1 Name of the State_____ ☐☐

1.2 Name of the District_____ ☐☐

1.3 Typology of PSU: Urban 1 Rural 2

1.4 Name of the town/village_____

1.5 PSU number: ☐☐

1.6 Household number ☐☐

1.7 Household address_____

PIN CODE ☐☐☐☐☐☐

SECTION 2.0: DEMOGRAPHIC PROFILE OF FAMILY

FOR QUESTIONS 2.1 TO 2.7, WRITE THE ANSWERS INSIDE THE TABLE GIVEN IN THE FOLLOWING PAGE (MATRIX A)

Take down background information of all household members who are sharing same kitchen and staying in this house (including those who are temporarily away. Exclude family members who are not staying in this house for a period of last 6 months before the survey but include relations who are staying in the household for at least last six months).

2.1 Relationship with head of household

Self/HoHH	01	Mother in-law	06	Son/son in law	11	Brother's/sister's grandchildren	16
Spouse	02	Uncle	07	Daughter/daughter in law	12	Cousin brother	17
Father	03	Aunt	08	Nephew	13	Cousin sister	18
Mother	04	Brother/brother in law	09	Niece	14	Live-in domestic help	19
Father in-law	05	Sister/sister in law	10	Own grandchildren	15	Others	20

2.2 Gender of the family member Male 1 Female 2

2.3 What is the age of this family member in completed years? ☐☐ Years

2.4 If this family member is no longer studying, please indicate what was his/her last level of education achieved. If this family member is presently studying, indicate at what level he/she is studying at present.

Illiterate……..01	Higher Secondary/ Intermediate…… 07
Literate but without formal schooling…..…02	Technical Education/ Diploma……..08
Less than primary…..…… ….03	Graduate……..09
Primary school……..……..04	Professional Degree……10
Middle school……...…..……05	Post Graduate and above……11
High school /Matriculate...……06	Others……12

2.5 What is the marital status of this family member?

Currently married	1	Divorced	4
Never married	2	Separated/deserted	5
Widow/widower	3		

2.6 What are the primary and secondary occupations of this family member?

Subsistence farmer……..…… .01	Owner of small-scale manufacturing unit (SSI)…….……...15
Other traditional farmer/ cultivator……..…….. .02	Owner of medium to large-scale manufacturing unit……...16
Organised farmer practising mechanized farming…..……..…03	Self employed Professionals……17
Animal husbandry/ dairy……04	Other self employed workers……18
Agricultural labourers……..……..05	Home based workers……...19
Skilled wage labourers……..……..…06	Retired and earning pension……20
Semi/ unskilled wage labourers……...……07	Not earning unemployed……..……21
Salaried employee (private sector with <10 employees)……..08	Not earning student……..……22
Salaried employee (private sector with 10-19 employees)……..09	Not earning retired…..……..……23
Salaried employee (private sector with ≥20 employees)……10	Unpaid family worker…..……..……..24
Salaried employee (Central Government)……...11	Children below 6 years……25
Salaried employee (State Government)……12	Housewife……26
Owner of trading/retail business from fixed premises……..13	Others……...27
Owner of trading/retail business without fixed premises……..14	

2.7 Is there any cash income from this/these occupation(s)? (Considering both primary and secondary occupations)
Yes 1 No 2

2.0 MATRIX A: DEMOGRAPHIC PROFILE OFHOUSEHOLD (Start filling up with the details of Head of the Household)

Index No.	2.1 Relation with HoH	2.2 Gender	2.3 Age	2.4 Education level	2.5 Marital Status	2.6 Type of Occupation		2.7 Receiving any cash income from your occupation
						Primary occupation (Single Response)	Secondary occupation (Multiple Response Possible)	
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								

INSTRUCTION:

1. **Eligible respondent in a household is any member earning cash income who is currently working for a living. This will include all those in formal as well as informal sectors but must exclude those whose incomes are derived from other than paid work, e.g. income from remittances, rentals, government sponsored social security schemes, or from interest earned from inherited wealth. Foreign nationals will not be eligible respondents.**

2. **All current earning members who are working for a living are now to be considered separately from the rest of the family members and serialized as 1,2,3… starting with the eldest (use the table below). You are then to randomly select any one of them using the KISH grid provided at the back of the questionnaire. Please circle the selected respondent index number in the demographic table as well as write it in the boxes provided below.**

3. **All subsequent questions are to be asked about the selected respondent only.**

Index number of earner								
Serial number	1	2	3	4	5	6	7	8

Index no. of chosen respondent

SECTION 3.0: SOCIAL SECURITY COVERAGE IN THE ORGANISED SECTOR

THIS SECTION IS TO BE ASKED ONLY IF THE SELECTED RESPONDENT'S PRIMARY OCCUPATION IS SALARIED EMPLOYEE IN GOVERNMENT OR IN A FIRM / ORGANISATION WITH 10 OR MORE EMPLOYEES (if codes 09, 10, 11 or 12 in Q2.6). OTHERWISE, GO STRAIGHT TO SECTION 4.0.

FOR QUESTIONS 3.1 TO 3.7, WRITE THE ANSWERS INSIDE THE TABLE GIVEN IN THE FOLLOWING PAGE (MATRIX B).
Please note the questions in this section are all prompted. (Read out the codes)

3.1 Which of these retirement schemes are you currently covered under?
Scheme list is provided in the table. Just code on coverage using 1 or 2 as indicated below.

Yes 1 No 2

3.2 Under each scheme you are covered, in your opinion, what benefits are you entitled to? **(Multiple response possible)**

Monthly old age pension	01	Lump sum on leaving the job before you retire	06
Monthly disability pension	02	Lump sum to family on death	07
Family pension for wife	03	Loan/withdrawals	08
Family pension for children	04	Tax benefits	09
Lump sum at retirement	05	Don't know	99

3.3 For each scheme you are covered under, in your opinion, how are your benefits determined? **(Multiple response possible)**

% of salary	1	Contributions + interest	3
Years of service	2	Don't know	9

3.4 Under each scheme you are covered, in your opinion, who makes payment to your account? **(Multiple response possible)**

Self	1
Government	2
Employer	3
Don't know	9

3.5 Have you ever withdrawn funds/taken loan from provident fund **(this will include EPF, GPF and CPF)**?

Yes, once	1	Yes, more than twice	3
Yes, twice	2	Never/not applicable	4

3.6 Under each scheme you are covered under, are you confident these benefits alone will be enough to support you and your family in retirement?

Yes 1 No 2 Don't know/not sure 3

3.7 Do you know who is responsible for managing your PF / pension /gratuity scheme?

EPFO	1	Your employer	3	Insurance company	5
Government	2	Post office	4	Bank	6
				Don't know	9

MATRIX B: SOCIAL SECURITY COVERED IN THE FORMAL SECTOR (Read out questions from previous page and write the answers in this table)

	3.1 Whether covered	3.2 Entitled benefits	3.3 Determination of benefits	3.4 Who makes payment?	3.5 Withdrawal from PF	3.6 Adequacy of benefits	3.7 Managing of PF/Pension
Employees Provident Fund	☐		☐☐☐	☐☐☐	☐	☐	☐
Employees Pension Scheme	☐		☐☐☐	☐☐☐	☐	☐	☐
Government Pension Scheme	☐		☐☐☐	☐☐☐	☐	☐	☐
Government Provident Fund	☐		☐☐☐	☐☐☐	☐	☐	☐
Gratuity Scheme	☐		☐☐☐	☐☐☐	☐	☐	☐
Contributory Provident Fund	☐		☐☐☐	☐☐☐	☐	☐	☐

3.8 At present, are you also doing any of the following? **(Multiple response possible)**

Contributing additionally to your PF	1
Having other savings schemes	2
None	3

	FUND / SCHEME (Only respond if coded 1 in Q.3.1)					
Views on scheme delivery	**Employees Provident Fund**	**Employees Pension Scheme**	**Government Pension Scheme**	**Government Provident Fund**	**Gratuity Scheme**	**Contributory Provident Fund**
3.9 How confident are you that you will indeed get the due benefits?	☐	☐	☐	☐	☐	☐
3.10 How satisfied are you about the degree to which you are kept informed about your pension/PF/ gratuity account?	☐	☐	☐	☐	☐	☐
3.11 How satisfied are you with the way your requests have been addressed?	☐	☐	☐	☐	☐	☐
3.12 How satisfied are you with the complaint redressal system?	☐	☐	☐	☐	☐	☐
3.13 What is your overall satisfaction level with your present pension/PF/gratuity scheme?	☐	☐	☐	☐	☐	☐

Code for Degree of Confidence/satisfaction

Extremely confident/satisfied	1
Somewhat confident/satisfied	2
Not much confident/satisfied	3
Not at all confident/satisfied	4
Don't know / Can't say	5
Not applicable	6

SECTION 4.0: SOCIO ECONOMIC PROFILE OF THE ELIGIBLE RESPONDENT (Ask to all respondents)

JOB DESCRIPTION

No.	Questions and filters	Coding Category	Codes
4.1	Social category of respondent	SC /ST Others	1 2
4.2	Please provide a detailed description of your job?		

TO BE FILLED UP BY EDITOR ONLY
Please fill up the occupational code based on occupational description provided in Q4.2 with respect to census and NSSO code as per codebook provided to you

Code for employment status	Occupational coding as per Census	Occupational coding as per NSSO

MORTALITY

4.3 Is your father alive today?
Yes 1 No 2 (Skip to Q.4.5)

4.4 If yes, how old is he? **(Please write '000' if the respondent cannot recall or don't know)**
Age ☐☐☐ (Skip to 4.6)

4.5 If No, can you recall at what age he expired? **(Please write '000' if the respondent cannot recall or don't know)**
Age ☐☐☐

4.6 Is your mother alive today?

Yes 1 No 2 (Skip to Q.4.8)

4.7 If yes, how old is she? **(Please write '000' if the respondent cannot recall or don't know)**
Age ☐☐☐

4.8 If No, can you recall at what age she expired? **(Please write '000' if the respondent cannot recall or don't know)**
Age ☐☐☐

ASSET OWNERSHIP of Household

No.	Questions and filters	Coding Category	Codes
4.9	Do you expect to have a house where you can live after retirement from work without paying rent and without any outstanding mortgage payment?	Yes No Not sure	1 2 3
4.10	Ownership of land other than homestead land (Write "00" if not Owned)	Total Land (acres) ☐☐☐☐☐ If local unit, please convert it into acres). Use one box for decimal if required	

LANGUAGE PROFICIENCY

4.11	Can you speak, read and write the following languages? Yes 1 No 2	**Language**	**Speak**	**Read**	**Write**
		Local language of the state where currently working			
		Hindi			
		English			

EXPOSURE TO MASS MEDIA

No.	Questions and filters	Coding Category	Codes
4.12	During the last 1month how often have you listened to the radio?	Every day At least once a week Less than once a week Did not listen to radio in last 4 weeks	1 2 3 4
4.13	During the last 1month how often have you watched television?	Every day At least once a week Less than once a week Did not watch television in last 4 weeks	1 2 3 4
4.14	During the last 1month how often have you read newspaper?	Every day 2-3 times a week At least once a week Less than once a week Did not read a newspaper in last one month Not applicable because can't read/see	1 2 3 4 5 6
4.15	During the last one-month, how often have you used the internet/e-mail?	Every day 2-3 times a week At least once a week Less than once a week Did not use the internet/e-mail in last one month Never heard of internet/e-mail	1 2 3 4 5 6

If primary occupation code of respondent is 08, 09, 10, 11or 12 in Q.2.6, then skip to Q.5.4)

SECTION 5.0: EARNING CYCLE

This section is to be filled up for all respondents other than salaried employees (codes other than 08, 09, 10, 11 or 12 in Q2.6). If engaged in agriculture as well as other activities other than salaried employment, fill out both the tables given below. If respondents are more comfortable relating to local nomenclature of months, please convert and fill in the appropriate boxes. (The occupation being considered in both cases is primary occupation)

CULTIVATORS/FARMERS (earning from farming activities)

5.1 In which months you receive a cash income from your farming activities? (Code: Yes 1 No 2)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

FOR ALL OTHER RESPONDENTS OTHER THAN FARMERS

5.2 During the past 12 months, how many months were there when you did not have a full month's earnings? (**Indicate '00' if you always had a full month's earnings throughout the year**)

5.3 If coded anything other than '00' or '12', can you please indicate in which months you had less than a full month's earnings?

Oct	Sep	Aug	Jul	Jun	May	Apr	Mar	Feb	Jan	Dec	Nov
10	9	8	7	6	5	4	3	2	1	12	11

CHANGES IN OCCUPATIONAL/WORK PROFILE (If any)

No.	Questions and filters	Coding Category	Codes
5.4	How many times have you changed your primary occupation in last 5 years?	Put '00' in case of no occupational change and skip to Q.5.7	☐☐
5.5	If 'yes,' what was the last primary occupation prior to your present one?	(Use code from Q2.6) ☐☐	
5.6	What were the various reasons for the change in your primary occupation (s)? (**Multiple answers possible**)	Not enough work available for sustained income For better earning opportunity Retrenchments Business failed Repeated draughts/natural calamities Lost my land due to mortgage Had not started working at that time Changed place of residence Others, specify	1 2 3 4 5 6 7 8 9
5.7	What do you expect your primary occupation to be 5 years from now?	(Use code from Q2.6) ☐☐ Not sure 99	

MIGRATION PROFILE

No.	Questions and filters	Coding Category	Codes
5.8	Are you presently living with your family?	Yes No	1 2 **(go to 6.1)**
5.9	Do you frequently live apart from your family for work purposes?	Yes No	1 2 **(go to 6.1)**
5.10	How many days in a year do you have to be apart from your family for work purposes?	☐☐☐	

SECTION 6.0: EXPENDITURE PATTERN OF THE RESPONDENT

(Allow respondent to contact the concerned household member to provide the details on the given heads of expenditure). Please note that these items are expenditures that the respondent is committed to do on a regular basis and is not a list of his/her entire annual expenses.

Please note that separate tables have been provided for urban and rural respondents. Fill up accordingly. Please note THAT WE ARE NOT CAPTURING ENTIRE HOUSEHOLD EXPENDITURE. What we are capturing here is personal expenses of the respondent and persons financially dependent on the respondent.

In the case of a respondent residing in a joint or extended family household where the respondent is required to contribute a fixed amount towards the cost of shared household expenses, enter the amount of the lump sum concerned plus amounts in relation to any items listed for which the respondent has personal responsibility and pays for in addition to contributing lump sum to family expenses (e.g. a child's education expenses, or the utility bills).

6.1 Could you please recall and let me know about your expenditure on the following committed or compulsory items during the past 12 months? (**PLEASE FEEL FREE TO REPORT EXPENSES ON A WEEKLY, MONTHLY, HALF YEARLY OR ANNUAL BASIS AS PER YOUR CONVENIENCE**)

No.	Coding categories	Amount Spend (Rs)			
		Weekly	Monthly	Half yearly	Annually
	IF RESPONDENT BELONGS TO AN URBAN HOUSEHOLD				
1	Food and grocery				
2	Real estate cost (rent, mortgage repayment, society charges, house tax)				
3	Education expenses				
4	Transportation and other costs associated with cost of going to work				
5	Clothing and footwear				
6	Utility charges (electricity, telephone, gas, kerosene)				
7	Medical expenses				
8	Payments for committed savings/investment/insurance schemes				
9	Expenditure for running your business (wherever applicable)				
10	Transfer of fund to family members				
11	Repayment of loans (excluding repayment for items listed above)				
12	**If the respondent is not directly responsible for some or all of the individual items of expenditure listed because the respondent contributes a lump sum to family expenses, record the value of the lump sum here**				
				Annual total	
	IF RESPONDENT BELONGS TO A RURAL HOUSEHOLD				
		Weekly	**Monthly**	**Half yearly**	**Annually**
1	Food and grocery				
2	Real estate cost (rent, mortgage repayment, society charges, house tax)				
3	Education expenses				
4	Transportation and other costs associated with cost of going to work				
5	Clothing and footwear				
6	Utility charges (electricity, telephone, gas, kerosene, fuel wood)				
7	Medical Expenses				
8	Payments for committed savings/investment/insurance schemes				
9	Expenditure for running your business (wherever applicable)				
10	Transfer of fund to family members				
11	Land preparation and other cultivation cost (fertilizers, labour payment for preparation of land, sowing and harvesting, kerosene for generator set, rentals for generator set or pump, seeds, water charges, etc.)				
12	Animal husbandry (expenditure on fodder, concentrates, veterinary services, medicines, including transport costs)				
13	Storage, packaging and marketing of produce, including transport				
14	Repayment of loans (excluding repayment for items listed above)				
15	**If the respondent is not directly responsible for some or all of the individual items of expenditure listed because the respondent contributes a lump sum to family expenses, record the value of the lump sum here**				
					Annual total

7.0: RESPONDENT'S INCOME

Income is a critical parameter in our survey. In income surveys, it is well known that some respondents will knowingly understate income for a variety of reasons. To guard against understatement, please attempt to obtain as accurate a figure as possible by asking the respondent two things:

a. **Consider all sources of individual earnings from work during the last 12 months prior to this survey**
b. **Discuss with them the total expenditure that has been worked out in the previous question so that they are committed not to under-quote income. Argue that their income has to be at least the same, if not more than their actual expenditure unless they have taken out loans to supplement their income for consumption purposes. Note that the respondent has provided details of loan repayments in Q. 6.1 and this can be used to crosscheck.**

No.	Questions and filters	Coding Category	
7.1	What have been your total earnings from work during the last 12 months? (For business and agriculture, we are interested at revenue turnover, not profit or net income). If income is consolidated for the entire household (e.g. agriculture income), please report only your share	From primary occupation	
		From secondary occupation(s)	
		Total Earnings	

Other sources of Income	7.2 Annual income of household from other sources (Rs.) Write '00' if no income from this source	7.3 How much of this money is directly under your control to spend as you like)? None 1 About 25% 2 About 50% 3 About 75% 4 All of it 5	7.4 Value of the money under respondent's control (Multiply the figures given in 7.2 with the percentage indicated in 7.3 and divide by 100)
Remittances			
Rents			
Interest			
Any Other (specify)			
Total			

At this juncture, add the total income of the respondent with the additional income from other sources (Q7.5). Show the respondent what his/her total income now looks like.

7.5 Total annual income of the respondent (i.e. Q.7.1+Q.7.4) Rs.

Now, in front of the respondent, bring the expenditure figure as calculated under Q6.1 and subtract that figure from the total income figure as calculated under Q7.5, as follows:

Income (Q7.5) **- Expenditure (Q6.1)**

=Rs.

Do not ask Q7.6 if the above figure is in negative.

7.6 With this amount you have left as a balance, you are probably spending some of it on different other/residual expenses (other than your compulsory expenses in Q6.1). Can you now please consider very carefully and let me know that if you really tried, what proportion of this balance amount (which is really in your hand to control) you can save as cash.

Rs. | | | | | | |

SECTION 8.0: SAVINGS PATTERN (CONSIDERING ONLY ELIGIBLE RESPONDENT'S SAVINGS)

SAVINGS PATTERN

No.	Questions and filters	Coding Category	Codes
8.1	Who is generally involved in taking decisions about savings and investments in your household? (Multiple response possible)	Self Spouse Parent Siblings Others There is no savings at all (probe in detail to make sure)	1 2 3 4 5 8 **Skip to 8.25**
8.2	Purpose of saving? (Multiple response possible)	To meet the education requirements of my children For marriage of my children Old age security Buying real estate, construction, repair and renovations Buying consumer durables Meeting social/religious obligations (marriage, birth, festivals) For starting/expanding a business venture Safeguard against income uncertainty For the security of my family For sudden medical emergencies No specific purpose in mind as of now Any other	01 02 03 04 05 06 07 08 09 10 11 99
8.3	Did you consult anybody outside your household before taking savings decisions? (Multiple response possible)	No Camps organized by private companies/ government Friends/ Peer group Union leader/Community leader Agents Religious institutions Banks Self Help Groups / NGOs Relative Adult education centre/school teacher Colleague at work Employer Chartered accountant/tax lawyer/investment advisor Others (specify)	01 02 03 04 05 06 07 08 09 10 11 12 13 99

INSTRUCTION: IF RESPONDENT IS NOT READY TO PROVIDE HIS SAVINGS AND INVESTMENT DETAILS AT ALL, THEN TERMINATE THE INTERVIEW AND REPLACE THE HOUSEHOLD

8.4 In which of the following instruments do you presently have savings? (Multiple response possible) {**If not saving in any of these instruments, go to Q8.12**}

Savings account	1	Public Provident Fund	4
Fixed deposit	2	National Savings Certificate	5
Recurring deposit	3	Kisan Vikas Patra	6

FOR QUESTIONS 8.5, 8.6 AND 8.7, WRITE THE ANSWERS INSIDE THE TABLE GIVEN IN THE BOTTOM AND FOLLOWING PAGE (MATRIX C).

8.5 How much of money did you put into this form of **savings** during the last 12 months?

8.6 What is the total accumulated amount/value of this savings/investment as of today?

8.7 What is the main reason you are making this savings?

Investment plan	1
It if for a known expenditure	2
Conscious retirement plan	3
Part of it will go to retirement savings	4
Not decided yet	5

MATRIX C: SAVINGS IN BANKS

	Post Office			Nationalised/private/Cooperative/Rural Bank					
				Name: ☐ Name: ☐ Name: ☐			Name: ☐ Name: ☐ Name: ☐		
Banks	8.5 Amount saved	8.6 Current balance	8.7 Purpose	8.5 Amount saved	8.6 Current balance	8.7 Purpose	8.5 Amount saved	8.6 Current balance	8.7 Purpose
Savings account			☐			☐			☐
Fixed/term deposits			☐			☐			☐
Recurring deposits			☐			☐			☐
PPF			☐			☐			☐

NB: Postcode the nature of the bank on the basis of list provided to supervisor. This is to be done only during field scrutiny.

MATRIX C: SAVINGS IN BANKS

	8.5 Amount saved	8.6 Collective maturity value of all certificates that you presently have	8.7 Purpose
National Savings Certificate			
Kisan Vikas Patra			

If respondent is saving in NSC, answer Q8.8 or 8.9. If respondent is saving in KVP, answer 8.10 or 8.11. If none of these are currently the respondent' savings instruments, go straight to Q8.12

8.8 If you presently have more than one **National Savings Certificate**, please indicate the following:

The year in which you shall be receiving the first payment from any one of these Certificates

The year in which you shall receive your last payment from any one of these Certificates

8.9 If you presently have only one National Savings Certificate, please indicate the year of maturity

8.10 If you presently have more than one **Kisan Vikas Patra**, please indicate to me the following:

The year in which you shall be receiving the first payment from any one of these Certificates

The year in which you shall receive your last payment from any one of these Certificates

8.11 If you presently have only one Kisan Vikas Patra, please indicate the year of maturity

FOR QUESTIONS 8.12 TO 8.17, WRITE THE ANSWERS INSIDE THE TABLE GIVEN IN THE FOLLOWING PAGE (MATRIX D).

8.12 Are you aware of such an instrument of investment?

Yes 1 No 2 **(If not aware of any of the instruments, go to Q8.18)**

8.13 How frequently have you invested in such an instrument over the past 12 months?

Never invested in such an instrument 99
Invested, but not within last 12 months 88
☐☐ times during last 12 months

8.14 Reasons for investing/saving in this instrument **(Multiple Response Possible) (Take maximum three responses)**

Financial security----------01	Easy access/availability----------06	Traditional----------12
Better return----------02	Easy withdrawal----------07	Agent convinced me----------13
Liquidity----------03	Simple procedure----------08	Others have taken it----------14
No fear of theft or fraud---------- 04	Option of flexible contribution---------09	Was advised by peers/relations------15
No other choice----------05	Easy to understand/transparent------10	Tax benefit----------16
	Trust worthy----------11	Usual habit----------17

8.15 How satisfied are you with this investment decision?

Satisfied	1	Dissatisfied	4
Somewhat satisfied	2	Can't say	5
Somewhat dissatisfied	3		

8.16 What is the main reason you are making this savings?

Investment plan	1
It if for a known expenditure	2
Conscious retirement plan	3
Part of it will go to retirement savings	4
Not decided yet	5

8.17 What is the total accumulated amount/value of this savings/investment as of today?

MATRIX D: INVESTMENTS IN OTHER INSTRUMENTS

Other instruments	8.12 Awareness	8.13 Frequency of investment	8.14 Reason for preference	8.15 Level of satisfaction	8.16 Investment goal	8.17 Current accumulated value (Rs.)
Community based group savings						
Chit funds/ Committee / BC						
Bonds						
Mutual funds						
Shares						
State govt. schemes						

FOR QUESTIONS 8.18 TO 8.22, WRITE THE ANSWERS INSIDE THE TABLE IN THE FOLLOWING PAGE (MATRIX E).

8.18 Have you ever bought such scheme?

Yes 1 No 2 **(If never bought any of these schemes, go to Q8.25)**

8.19 What is the maturity or terminal value of this policy? (If you have more than one policy of this type, just add the terminal values of all your policies and give me an approximate total figure)

8.20 What is the sum for which you are insured (risk value)? (If you have more than one policy of this type, just add the insured values of all your policies and give me an approximate total figure)

8.21 Do you think your coverage (sum you are insured for) is adequate or would you ideally liked to have gone for a higher cover?

It's adequate 1
Ideally like to have gone for a higher cover 2
DK/CS 3

8.22 What is the main reason you are making this savings?

Investment plan 1
Conscious retirement plan 2
Part of it will go to retirement savings 3
Life/Health/accident coverage 4
Not decided yet 5

MATRIX E: INVESTMENTS IN INSURANCE

Insurance	8.18 Whether bought	8.19 Maturity value (Rs.)	8.20 Sum assured/coverage (Rs.)	8.21 Adequacy of coverage	8.22 Investment goal
Life insurance (endowment policy)					
Life insurance (non-endowment policy)					
Personal accident insurance					
Health insurance					
Non life/general insurance					

8.23 If you have **more than one life insurance** endowment policy, please indicate to me the following:

The year in which you shall be receiving the first payment from any one of your policies

The year in which you shall receive your last payment from any one of your policies

8.24 If you are a **single policyholder**, please indicate the year of maturity

If you or your family own any of the following assets (fully or jointly), please provide the following details:

	8.25 Owned by family Yes 1 No 2	8.26 Current market value (Rs.) (Leave blank if not owned)	8.27 Respondent's share of the property (%) (Write '000' if there is no share or if not applicable)	8.28 For property that is currently mortgaged, in what year will the entire loan be paid up? (Write '0000' if not applicable)
Agricultural land				
Owner occupied house				
Other real estates				

8.29 What is your overall degree of confidence with the following financial institutions and groups?

Institutions	Degree of Confidence (Circle Code)				
Nationalised banks	1	2	3	4	5
Regional Rural Bank	1	2	3	4	5
Indian Private Banks	1	2	3	4	5
Foreign Banks	1	2	3	4	5
Cooperative Bank	1	2	3	4	5
Post Office	1	2	3	4	5
Registered Cooperative Societies	1	2	3	4	5
LIC of India	1	2	3	4	5
Other Insurance companies	1	2	3	4	5
Mutual Funds	1	2	3	4	5
Self Help Groups	1	2	3	4	5
Chit Funds	1	2	3	4	5
Group leader/Union Leader	1	2	3	4	5
Employer	1	2	3	4	5
Local financer/money lender	1	2	3	4	5

Codes for degree of confidence

Yes, I would definitely trust them with my money	1
I might trust them with my money	2
Given a choice, I would not like to trust them with my money	3
I would definitely not trust them with my money	4
Don't know about this type of institution/can't say	5

9.0: DEBT SERVICING

No.	Questions and filters	Coding Category	Codes
9.1	Which of the following would be your first response for coping with a financial emergency?	Spend from buffer saving	1
		Take loan	2
		Dispose/mortgage off assets/distress selling	3
		Compromise on other committed expenses	4
		Family support	5
		Seek extra work	6
		Any other (Specify)	9

Sources of borrowing	9.2 Accessible within daily commutable distance Yes 1 No 2 DK 3	9.3 From whom have you taken any loan in the past 2 years?	9.4 Frequency of taking loans (last 2 years)? Write '00' if not taken and '99' if taken on a daily basis to meet business capital needs	9.5 Rate of interest (%) of the last loan taken (choose whichever is applicable) within past 2 years or currently running loan taken earlier			9.6 What is the current outstanding debt? (Rs)
				Per day	Per month	Per annum	
Money lender		01					
Private Financial institution		02					
Nationalised financial institution		03					

Sources of borrowing	9.2 Accessible within daily commutable distance Yes 1 No 2 DK 3	9.3 From whom have you taken any loan in the past 2 years?	9.4 Frequency of taking loans (last 2 years)? Write '00' if not taken and '99' if taken on a daily basis to meet business capital needs	9.5 Rate of interest (%) of the last loan taken (choose whichever is applicable) within past 2 years or currently running loan taken earlier			9.6 What is the current outstanding debt? (Rs)
				Per day	Per month	Per annum	
Cooperative bank		04					
Cooperative society		05					
Employer		06					
Trade union		07					
Loan under govt. prog.		08					
Relatives/ friends		09					
SHG		10					
Chit fund		11					
Other (specify) ___		12					

SECTION 10.0: PERCEPTION TOWARDS OLD AGE FINANCIAL SECURITY

No.	Questions and filters	Coding Category	Codes
10.1	Have you given any thought about preparing for retirement from work?	I am consciously preparing for retirement Not preparing but expecting to retire Neither preparing nor expecting to retire Have not thought about this at all	1 2 3 **Skip to 10.5** 4 **Skip to 10.5**
10.2	At what age do you think you will be withdrawing from the workforce?	☐☐ Years	
10.3	Reason for choice of age? (Multiple response possible)	Will have enough money by then Children will be settled, do no need to work further No liabilities (loans, daughter's marriage) It is the age limit for retirement Health would not permit to continue	1 2 3 4 5
10.4	How do you expect to take care of your expenses in your old age? (Multiple response possible)	Expect my children to take care of me I would have saved enough to support myself I expect my current pension plan to be adequate I expect to have enough disposable assets to sell off I expect the government will look after me Have my own house I'll think about it when I am closer to retirement Others Don't know	1 2 3 4 5 6 7 8 9
10.5	How confident are you that your children will take care of your financial needs in your old age?	They will They might They won't I do not need their assistance Don't have child	1 2 3 4 5

No.	Questions and filters	Coding Category	Codes
10.6	Who looks after your parents / were looking after your parents' financial and other needs during their old age? (Multiple response possible)	My earning siblings with whom they stay	1
		My non-earning siblings with whom they stay	2
		Their relatives in their home	3
		By me	4
		By me in my home	5
		They look/looked after themselves	6
		I do not know as I was too young when they died	7
		I was an orphan	8

SECTION 11.0: TESTING OF CONCEPT OF RISK VS. RETURN

11.1 We are now going to play a game. Suppose you have Rs.1000/- with you, which you want to invest. I am giving you three choices in which you can make this investment, as follows:

Choice 1	Choice 2	Choice 3
In this choice, after one year your Rs.1000 may grow up to Rs.2000, or you may lose some of the money and get back only Rs.500	In this choice, after one year your money may grow up to Rs.1200, or you may lose some of the money and get back Rs.800	In this choice, after one year your money will grow to Rs.1050, i.e. you do not lose your deposit at all.

Which among these options will be your investment choice? **YOU ONLY HAVE THESE THREE CHOICES** ☐
(Code 1, 2 or 3 in the given box)

SECTION 12.0: KNOWLEDGE, ATTITUDE AND CURRENT PRACTICES REGARDING FINANCIAL BEHAVIOUR

Please provide your responses to the following questions		Yes	No	Don't know what this is
12.1	Do you know what the current value of inflation is?	1	2	3
12.2	Does the government guarantee full deposits in a nationalised bank?	1	2	3
12.3	Is it easy to get unbiased financial advice?	1	2	3
12.4	Do you know the current value of all your investments/inheritance?	1	2	3
12.5	Do you have a Demat account?	1	2	3
12.6	Have you ever done an online financial transaction on your own account?	1	2	3
12.7	Do you have a credit card?	1	2	3
12.8	Do you have a Kisan Credit Card?	1	2	3
12.9	Do you have an ATM card?	1	2	3
12.10	Have you ever faced a financial fraud?	1	2	3

12.11 Which of the following do you believe are fundamentally safe investments/savings?

	Yes	No	Don't know		Yes	No	Don't know
House	1	2	3	Land	1	2	3
LIC Insurance policy	1	2	3	Equity/shares	1	2	3
Private insurance policy	1	2	3	Postal savings	1	2	3
Nationalised Bank deposits	1	2	3	Mutual funds	1	2	3
Private Bank deposits	1	2	3	Chit funds	1	2	3
Central government bonds	1	2	3	Company deposits	1	2	3
State government bonds	1	2	3	Gold	1	2	3
Corporate bonds	1	2	3				

12.12 During your working life, have you purchased gold as a form of saving or investment?

Yes 1 No 2 (**Skip to Q12.14)**

12.13 If yes, is it the major part of your total saving / investment?

Yes it is	1
No, it is almost the same as my other savings/investments	2
No, it is less than any other savings/investments	3

12.14 At this point, can you please give me some idea of total volume of gold you have inherited or received as gifts and how much you have bought yourself?

Inherited/received: ☐☐☐☐ Circle the reporting unit (Grams 1 Tolas 2)

Bought: ☐☐☐☐ Circle the reporting unit (Grams 1 Tolas 2)

Can't say / won't say (tick) ☐

SECTION 13.0: PERCEPTIONS TOWARDS THE CONCEPT OF A VOLUNTARY SAVINGS PLAN FOR OLD AGE

RESPONSE TOWARDS SCHEME DESIGN

I am now going to describe for you a number of features for a savings plan for old age and I would like you to give me your reaction to each feature in turn in terms of how attractive you find it.

No.	Questions and filters	Coding Category				
13.1	Please let us know what features of this plan you find more acceptable than others (Refer codes below)					
	You have to save for many years while you are working but you can choose how much you want to save each time you make a deposit	1	2	3	4	5
	Your deposits will be kept in an account in your own name	1	2	3	4	5
	You will be able to continue operating the same account even if you change your job or place of residence	1	2	3	4	5
	The government will protect you from fraud but will not guarantee an interest on your deposits.	1	2	3	4	5
	You will be offered some standard choices about where your savings will be invested and you will be given regular opportunity to change your choices	1	2	3	4	5
	You cannot withdraw your savings for any reason till your old age	1	2	3	4	5
	Part of the total money you have saved over the years will be paid to you as a lump sum when you retire and the balance will be paid to you as a regular monthly payment for the rest of your life	1	2	3	4	5
	Benefits will be paid to your family or nominee if you die either before or after retirement	1	2	3	4	5
	Any tax benefits are likely to be small	1	2	3	4	5
13.2	Would you be interested in investing in such a plan? (Refer codes below)	1	2	3	4	5

Codes for degree of acceptability (13.1):

Totally acceptable	1
Somewhat acceptable	2
Somewhat unacceptable	3
Totally unacceptable	4
Don't know/can't say	5

Codes for degree of interest (13.2):

Extremely interested	1
Somewhat interested	2
Not really interested	3
Not interested at all	4
Don't know/ cant say/already covered	5

14.0 MEMBERSHIP OF ORGANISATIONS

FOR QUESTIONS 14.1 TO 14.4, WRITE THE ANSWERS INSIDE THE TABLE GIVEN IN BOTTOM OF THIS PAGE (MATRIX F)

14.1 Are you a member of any of the following?

Yes 1 No 2 **(ask about the next institution)**

14.2 What benefits are you entitled to because of your membership? **(Multiple response possible)**

Credit……..01
Health benefits……02
Death benefits to family……03
Disability benefits……04
Old age pension……..05
Financial assistance in emergency..06
Assistance for income generation activity…07
Insurance……..08
Savings scheme……..09
Maternity assistance……..10
Education……..11
Others……12
None……..99

14.3 Do you pay any membership fees?

Yes, one time payment	1	Yes, bi- monthly	5
Yes, annual	2	Yes, monthly	6
Yes, half yearly	3	Yes, weekly	7
Yes, quarterly	4	No	8

14.4 Is yes (code 1 to 7 in Q14.3), how is the fee paid?

Deducted from pay	1	Collected from me	3
I pay it directly	2	Others	4

MATRIX F: MEMBERSHIP DETAILS

	14.1 Whether member	Name	14.2 Type of benefits	14.3 Membership fee	14.4 Mode of payment
Trade Union	☐		☐☐☐☐☐☐ ☐☐☐☐☐☐	☐	☐
Welfare Fund	☐		☐☐☐☐☐☐ ☐☐☐☐☐☐	☐	☐
Trade association	☐		☐☐☐☐☐☐ ☐☐☐☐☐☐	☐	☐
Cooperative society	☐		☐☐☐☐☐☐ ☐☐☐☐☐☐	☐	☐
Self Help Group	☐		☐☐☐☐☐☐ ☐☐☐☐☐☐		