Study on the drivers of Over-indebtedness of Microfinance Borrowers in India:

An In-depth Investigation of Saturated Areas

Under the aegis of

Poorest States Inclusive Growth (PSIG) Programme

Research Partner

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Disclaimer:

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3 ACRONYMS

AP	Andhra Pradesh
CGAP	Consultative Group to Assist the Poor
DFID	Department for International Development
FGDs	Focus Group Discussions
KA	Karnataka
MFI	Microfinance Institution
MP	Madhya Pradesh
OID	Over-indebtedness
SRO	Self-Regulatory Organization
SIDBI	Small Industry Development Bank of India
UP	Uttar Pradesh

4 EXECUTIVE SUMMARY

In the past few years, India has become a predominant player in the microfinance sector in the sub-continent. Phenomenal growth has been recorded by microfinance in India in recent years. The gross loan portfolio registered 35 per cent growth rate, while the number of clients rose by 20 per cent during 2013-2014.[1] Despite such a rapid growth however, there have been incidences of over-indebtedness (OID) that are being reported in various parts of the country. This study adopted a two-layered perspective on OID - namely subjective and objective –collecting quantitative, as well as qualitative data on loans, savings, assets, financial literacy and self-reported stress levels associated with repayments to understand the problem of OID. The study aimed to provide a comprehensive understanding of the problem of over-indebtedness in the selected areas of Allahabad (Uttar Pradesh), Indore (Madhya Pradesh) and Mysore (Karnataka). The varied scales of analysis used in the three districts identified which have the largest proportion of "borrowers servicing more than three MFI loans", provided an opportunity for thorough assessment of where the problem of OID lies.

The descriptive and econometric analysis sections of the report discuss in detail the factors that were associated with OID in our study. Multiple borrowings, high debt-service burden, discrepancy between stated purpose and actual usage of loans, inflexibility in repayment schedules as perceived by the respondents, and pipeline loaning were some of the major factors linked to their indebtedness levels. The fundamental problem lay in the debt-income ratio of over-indebted household, which resulted in high levels of repayment anxiety and often pushed borrowers to resort to cross-borrowing. This trend was found to be more prevalent among low and unstable income groups, particularly households that relied on agricultural and wage-based occupations.

In such a scenario, we argue it is not more access to finance but rather a more focused, customized access to credit needs of the individual borrower that would enable households to improve their financial situation or progress out of poverty.

The last chapter of the report on implications and conclusions provide for a more nuanced understanding of the drivers of over-indebtedness, and recommendations based on results for interventions to solve problems of over-indebtedness in the sector. The interventions encompass three areas:

1Inclusive Finance Report 2015

(i**) Responsible and sustainable lending practices** which involve creating more relevant and robust screening systems for loan disbursement to raise portfolio quality apart from having adequate operational infrastructure in place to support clients (branch and employee to client ratio). We also recommend MFIs to provide flexibility in repayment schedules based on occupational / income profiles, and investment returns on loans taken for productive purposes. Additionally, MFIs should provide diverse financial products like emergency loans, home improvement loans, savings products, health insurance etc. based on area specific needs. Policy makers at the apex level and industry investors can earmark soft and concessionaire funds to support MFIs engagement in commercialization of new products and services that meets the needs of specific customer segments. Such diversification of products based on area-specific needs of clients identified through market research and such studies is needed to reduce the number of OID clients, and risks around defaulting due to use of loans for unstated purposes. A horizontal expansion as such would not only enable the sector to contribute towards the drive to sustainable financial inclusion but also add to the sustainability of the loans being offered and reducing risks of delinquency. Additionally, linking the loan amount disbursed during the initial and subsequent loan cycles to differentiated income brackets of MFI customers is also key to having a sustainable credit system. This linkage would potentially allow for the loan amount requirements of clients being met for livelihood finance at a given point, and thereby reduce the reliance on multiple sources of loans which was a popular trend in the study.

(ii) Ensuring transparency in information sharing about credit activities of clients by greater sharing on client debt levels and credit history by all financial institutions. While this has been encouraged, this practice at present is not followed by all and therefore creates gaps in the credit information available about the client. Credit bureaus can play a crucial role in enhancing transparency in the bank-client relationship that is needed to ensure sound credit decisions and avoid client over-indebtedness. Secondly, further improve existing credit reports (methods can be devised to incorporate loan officer's qualitative findings into scoring model which would help detect trends in credit behavior and group composition). Thirdly, the credit bureau can share regional analytical memos on a monthly or quarterly basis with MFIs, from the data it accumulates. This would help in understanding the regional credit situations within the country and help in bridging the gaps of inadequate credit information within the industry. Lastly, the two industry self-regulatory organizations (SROs)—Sa-Dhan and Microfinance Institutions Network (MFIN) need to consistently review and update the code of conduct to be followed by MFIs based on present ground level realities, as showcased by such studies. Following of this code of conduct can be incentivized to ensure its popular uptake within the industry.

(iii) **Financial education and legal counseling of clients:** Various studies have established the importance of informal borrowing among the rural population in India. We therefore suggest conducting financial literacy drives that create awareness about sustainable borrowing practices, apart from providing financial services that address the most common reasons for clients for relying on informal lending (accessibility, flexibility in use as well as repayment and quick turn-around of loan disbursal). The literacy drives can additionally make clients aware of these customer rights and the legal implications of defaulting.

5 STUDY INTRODUCTION

5.1 CONTEXT

In spite of a large network of the institutional credit system, formal credit has not been able to adequately penetrate the informal rural financial markets and the non-institutional sources continue to play a dominant role in purveying the credit needs of the people residing in rural areas. Thus, important challenge facing the banking sector is to extend financial services to all sections of society.

Microfinance sector in India has shown significant growth over the past few years. Until 2014, Microfinance Institutions in India issued 12.7 million loans worth Rs. 1508.61 billion.[2] Reports emanating from the field have however highlighted that this sector is nearing saturation. Rapidly expanded and often under-regulated microfinance services have in some cases led to a paradigm shift of the poor having too much access instead of too little access to finance.[3] This has also been compounded by the growth of sources other than microfinance institutions (MFIs) which has resulted in borrowers undertaking too much debt.

Given the difficulties in tracking the cash flows and actual debt burden of a household, MFIs unaware of other sources of borrowing could potentially offer products to people who may struggle but pay off the loans to maintain a good credit history but maybe at the risk of being over-indebted and could lead default in future. On the provider side, this can put the institutional stability and sustainability of the industry at serious risk, with implications that can cause long term damages. On the borrower side, easily available loans could lead to a situation where borrowers continuously struggle with repayment and experience unacceptable sacrifices related to their debt. These unacceptable sacrifices are often in the form of loss of assets, livelihoods and worsening living conditions. The economic, psychological and sociological consequences of over-indebtedness are extensive and can potentially cascading. [4]

The nationwide growth of this sector was impacted severely by the Andhra Pradesh (AP) Crisis of 2010.[5] While data suggests that MFIs have picked up again after the 2010 crisis, this year has seen new incidents of over-indebtedness surface in regions of Madhya Pradesh, Karnataka and Uttar Pradesh (UP) which have been associated with pipeline loans (taking loans using their KYC for others and ending up with multiple loans), spending entire or more than the recommended spending limit of the loan on consumption purposes rather than income generation etc.[6]

Some reports[7] have argued that these incidents are a cause of worry for they point to deeper problems within the system. According to Inclusive Finance India Report 2015, while MFIs grew to Rs. 390 billion in FY2015 from Rs. 240 billion in FY 2014, this growth wasn't accompanied with concurrent growth in the number of MFI branches, employees and clients. This could mean that the

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2Access Development Services, 'State of the sector report', 2014 http://www.accessdev.org/downloads/SOS_Report_2014.pdf

3 This trajectory has been observed in several other countries (e.g. Ghana, Kosovo) Schicks, 2013

5 Back in 2010, Andhra Pradesh was highly penetrated by both MFIs and SHGs giving rise to multiple borrowing. Some of the causes identified for multiple borrowings include clients poaching and loan pushing on the MFIs side, and loan recycling on the clients' side5. A CGAP (Consultative Group to Assist the Poor) study indicated that the average household debt in AP was Rs. 65,000 compared to the national average of Rs. 7,700. Andhra Pradesh witnessed a series of suicide episodes, which were attributed to the alleged abusive practices of MFIs such as charging high interest rates, adopting coercive collection practices etc.

6Access development services, 'State of the sector report', 2015. http://indiamicrofinance.com/wp-content/uploads/2015/09/inclusive-finance-report-2015.pdf

7 http://www.livemint.com/Opinion/Gn7z2lGvfvwgoyjxByRHpO/Murmurs-of-a-fresh-crisis-in-the-microfinance-sector.html

infrastructure, employees and clients of MFIs are being stretched beyond capacity. This fast growth of microfinance services without sufficient infrastructural support, it is argued, runs the risk of multiple borrowing by clients, without proper checks and governance of these borrowings. On the other hand, some reports such as a recent one by IFMR Capital[8] argues that new reports of over-indebtedness are sporadic events and detailed analysis of data from credit bureaus does not indicate towards overheating of the system. This however could be because there are gaps in reporting to credit bureaus[9] - some spurious localized lenders are aping MFIs without being supervised by RBI, SHG lending is not reported, some NGO-MFIs with large portfolios may not be subscribing to credit bureaus, and there are unregulated cooperatives and chit funds apart from loans taken from the informal sector.

While over-indebtedness is a pressing and urgent challenge for the microfinance sector, the truth is that we know little about it and no industry level publication on multiple borrowing and other factors contributing to OID in India exists. The aim of this study is therefore to gain a better understanding of the drivers of over-indebtedness amongst borrowers in selected areas that are approaching saturation in India. While it will not be able to answer all our questions, we feel that it offers important insights from the client side and the factors that drove them to over-indebtedness.

It is within this context of a previous microfinance crisis, new field reports on multiple borrowings and over-indebtedness of microfinance clients in certain pockets, lack of consensus on such events that ACCESS ASSIST in partnership with IFMR LEAD conducted a study investigating the relationship between borrowings, microfinance sector and indebtedness levels of its clients.

5.2 OBJECTIVES

This focuses on the **drivers of over-indebtedness** in the selected areas, in order to gain a better understanding of client over-indebtedness in the microfinance sector and the extent to which different factors, especially multiple borrowing can lead to OID. Specifically, the study explores:

- Understanding the level and nature of over-indebtedness (OID) of MFI clients and their household from all sources (formal and informal) in the selected areas

8 http://www.ifmr.co.in/blog/2016/01/22/microfinance-through-a-data-lens/

9 See ACCESS-ASSIST report on MFI lending practices and CGAP occasion paper on micro credit for more details on this https://www.cgap.org/sites/default/files/CGAP-Occasional-Paper-Too-Much-Microcredit-A-Survey-of-the-Evidence-on-Overindebtedness-Sep-2011.pdf

- Identify the factors responsible for this over-indebtedness and study how they correlate with each other in different thresholds of OID
- Investigate the linkages, if any, between multiple borrowings and cases of Over-indebted clients
- Map out any struggles faced by the clients in repayment of loans
- Suggest remedial measures, if necessary, to microfinance institutions and credit bureaus in order to avoid the sector from being hit by another crisis.

5.3 MEASURES OF INDEBTEDNESS AND OVER-INDEBTEDNESS

Being indebted, through formal or informal channels, these days is normal consumer behaviour and a certain level of debt is inevitable for most households. For a number of reasons for some households however, the level of debt can become unsustainable. This unsustainability lies in the household's high risk of default. In other words, households that have a high likelihood of defaulting are over-indebted.

Given that this study is about drivers of over-indebtedness, it is imperative to further define what we mean by over-indebtedness for the purpose of this study. A number of indicators and benchmarks have been suggested by recent research on over-indebtedness across various countries. Building on such existing research on OID that have been carried out in Kosovo, Cambodia and Ghana,[10] this study uses two different measurements of over-indebtedness: *an objective one and a subjective one*:

a) From an **objective definition**, an over-indebted microfinance borrower is identified using the following index and threshold quotient.

i) **Net indebtedness Index*: (Indebtedness Index 1)**

$$\frac{\text{Monthly instalments on all business and household debt}}{\text{Monthly net income}}$$

(Total revenue from all sources, excluding debt expenses)

*(This index provides a rough approximation of OID, since data is hard to obtain and relies largely on the respondents' answers)

10 Schicks, J. (2014). Over-indebtedness in Microfinance–an empirical analysis of related factors on the borrower level. World development, 54, 301-324.
Liv, D. (2013). Study on the drivers of over-indebtedness of microfinance borrowers in Cambodia: An in-depth investigation of saturated areas. Cambodia Institute of Development.
Spannuth, S., & Pytkowska, J. (2011). Indebtedness of Microcredit Clients in Kosovo. EFSE. Stamp, Stuart.(2009)."A Policy Framework for Addressing Over-indebtedness". Combat Poverty Agency, Dublin, Ireland.

Further, the indebtedness level of borrowers for this study has been **divided in four classifications**, depending on the index value. This is important, in order to look at and understand OID in a more nuanced way.

1. *Not over-indebted (index of indebtedness <0.40*): household borrowers who spend less than 40% of monthly net incomes, or profit after taxes in case of enterprises, on the payment of monthly credit installments.

2. *At risk (index of indebtedness = 0.40 - 0.75):* household borrowers who spend 50% to 75% of monthly net incomes or profit in the payment of monthly credit installments.

3. *At critical phase (index of indebtedness = 0.75 - 1.0):* household borrowers who spend 75% to 100% of net monthly income or profit in the payment of monthly credit installments.

4. *Insolvent (index of indebtedness > 1.0):* household borrowers who spend all monthly net incomes or profit in the payment of monthly credit installments; monthly installments exceed the value of their net incomes.

ii) **And/or if there is a delay in repayment obligations[11] for more than 3 times in a row (Indebtedness Index 2)**

b) The other part of assessing OID was through **<u>subjective measures</u>,** wherein OID is understood through the client's description of the loan repayments as a **"heavy burden" on the household.** This has been incorporated in the study by framing questions around loan repayment stress and burden felt by the household, need for additional loans, and preferences around acquiring and paying off loans.

5.4 SCOPE OF THE STUDY

The study was conducted in selected districts of Madhya Pradesh, Karnataka and Uttar Pradesh; regions where many cases of client distress owing to microfinance over-indebtedness have been reported. The study investigates indebtedness, cases of multiple borrowings and its inter-linkages with microfinance from a two-layered perspective using quantitative, as well as qualitative data from primary and secondary sources.

11 From all sources of loans (formal and informal)

5.4.1 THE CLIENT LEVEL STUDY COVERED THE FOLLOWING ASPECTS IN DETAIL:

- **Identifying and mapping nature of borrowings and savings**: Primary data was used to collect information on client's household socio-economic status, mapping and identifying all sources of loans in the household (from both formal and informal sources) covering quantum of loans, sources, loan duration, interest rates, stated purpose of loan and actual loan utilization, preference for kind of loans for different purpose etc.
- **Identifying and collecting information on repayment pressure and stress associated with it**: Data on nuances such as repayment behavior, missing installments or defaults, pressures of repayment and its correlation with multiple loans, impact of repayment tenure (weekly/monthly), awareness regarding credit bureaus, reporting of existing loans to loan officers, relevance of joint liability for clients, and loan recovery practices of lenders was collected though surveys.
- **Collecting information on financial literacy levels, and socio-economic status of household**: The survey also collected data on consumption levels of household (to triangulate data with net income)[12], economic activities, education, and other socio-economic markers, apart from financial literacy levels, and decisions made around reporting loans to credit bureaus, preference of one over another lending institution etc. to further understand the profile of OID borrowers.

This client level data collected through the study has been complemented with a provider-level study conducted by ACCESS-ASSIST on MFI practices and field level information of MFI that impact client indebtedness. These include level of training of loan officers, credit bureau acceptance/rejection rates, level of target-setting, field staff incentive policy and staff turnover; systems for loan appraisal and repayment capacity assessment; loan utilization checks; absenteeism and delayed collections and incidences of poaching of clients - all of which will provide pointers to build-up of multiple lending and over-indebtedness.

5.5 SELECTION AND SAMPLING METHODOLOGY

It is believed that over-indebtedness in the Indian context can be linked to the increase in the number of players competing within and servicing the same (often) saturated market space. To understand over-indebtedness, it is important to gauge the scale of multiple borrowing and cross-borrowing from different financial institutions in such saturated markets.

12 See appendix 9.1.1

The study focuses on the three states of Uttar Pradesh, Karnataka and Madhya Pradesh where cases of over-indebtedness have been reported. Within these, the study accordingly focuses on households in districts which have the largest proportion of "borrowers servicing more than three MFI loans" – Allahabad, Uttar Pradesh; Indore, Madhya Pradesh; and Mysore, Karnataka (Table 1). The same methodology has been followed to select taluks in each of the above districts along with high presence of rural population. The taluks narrowed on based on the criteria, in the districts of Allahabad, Indore and Mysore are Tirumakudal-Narsipur - which has 132 villages - in Mysore district (KA), Handia – which has 625 villages – in Allahabad district, UP and Sawer – which has 126 villages – in Indore district, MP (Figure 1). This has been done with the aim of having saturated market areas as the study sites. The sample size for the study was 1955 respondents (around 650 in each state) who were interviewed using a questionnaire-survey. Six focus group discussions were also conducted for the study (two in each state). The only criterion for selection of a household into the sample was having at least one outstanding MFI loan. All participants of the FGDs were different from those who participated in the survey, and had at least one outstanding MFI loan in their name.

Figure 5.1: Study Locations

	Total Unique Borrowers		Active Borrowers		New Borrowers		Active Loans		Portfolio Outstanding		Borrowers Servicing 3+ Loans	
Karnataka	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15
Bangalore	11.31%	11.84%	16.33%	17.42%	17.10%	17.99%	15.50%	15.40%	19.40%	17.90%	10.21%	9.37%
Mysore	6.08%	6.22%	7.67%	8.03%	8.12%	8.42%	9.00%	9.20%	7.80%	8.40%	11.53%	11.14%
Belgaum	9.21%	9.11%	5.97%	7.58%	8.58%	7.64%	8.00%	7.50%	7.60%	7.10%	8.10%	7.28%
Tumkur	6.26%	6.18%	4.42%	6.04%	4.88%	5.46%	6.80%	6.60%	5.00%	4.90%	8.44%	7.63%

Uttar Pradesh	Total Unique Borrowers		Active Borrowers		New Borrowers		Active Loans		Portfolio Outstanding		Borrowers Servicing 3+ Loans	
	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15
Saharanpur	6.74%	6.61%	6.31%	6.23%	6.36%	5.58%	6.70%	6.90%	6.60%	6.90%	7.71%	8.31%
Ghaziabad	5.33%	5.37%	5.37%	5.56%	6.06%	6.22%	5.80%	5.90%	6.90%	6.90%	9.66%	8.61%
Allahabad	5.92%	5.87%	5.43%	5.55%	5.82%	5.81%	5.80%	5.90%	5.10%	5.30%	8.24%	8.99%
Varanasi	5.88%	5.77%	6.13%	5.78%	5.68%	4.88%	6.50%	5.90%	5.60%	4.70%	8.76%	7.85%

Madhya Pradesh	Total Unique Borrowers		Active Borrowers		New Borrowers		Active Loans		Portfolio Outstanding		Borrowers Servicing 3+ Loans	
	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15	Dec-14	Jun-15
Indore	9.51%	9.79%	9.82%	10.48%	11.09%	11.07%	10.80%	11.10%	10.90%	10.70%	12.94%	13.99%
Sagar	6.47%	6.65%	8.02%	7.96%	8.41%	7.73%	8.80%	8.40%	8.60%	7.90%	10.70%	10.22%
Hoshangaba	5.31%	5.18%	5.01%	4.73%	4.56%	4.08%	5.30%	4.90%	6.20%	5.90%	7.12%	5.81%
Jabalpur	7.24%	7.09%	6.47%	6.61%	5.77%	6.23%	6.90%	7%	5.50%	5.80%	7.61%	7.87%

Table 5.1: District selection for the study (Based on credit bureau data, 2016)

5.6 LIMITATIONS

While the study has tried to be systematic and comprehensive in its approach, there are limitations to the study that need to be mentioned.

5.6.1 LIMITATIONS IN METHODOLOGY AND SCOPE OF THE STUDY:

Lack of prior research on the topic and limitation of methodology adopted: The sample selection method adopted for the study is based on market penetration data acquired from the credit bureau. However, due to the absence of credit bureau data at a village level, it was not possible for us to identify and pick saturated areas at the village level. Further, we focused on the percentage borrowers servicing 3 or more active loans from MFI institutions, with the aim to identify areas with high incidence of multiple lending and possible situation of over-indebtedness. Despite the approach adopted, the sample acquired for the study could not have guaranteed representing a large segment of over-indebted population.

Additionally, the lack of additional reliable secondary data, or studies on conditions of indebtedness in the sample states, further limits the scope of the study and creates a significant obstacle in finding overarching trends in debt patterns of households or drawing comparisons with findings from other studies.

Self-reported data: Many aspects of the study instruments, both the surveys as well as the focus group discussions, contain data that cannot be independently verified. These data points have been taken at face-value of what people have said. The self-reported data therefore is prone to several potential sources of bias like that of *selective memory*, wherein respondents may not have remembered experiences or events that occurred at some point in the past, *telescoping* and recalling events from a different time from when they actually took place, or *attribution,* where the respondent attributes positive events and outcomes to one's own agency but attributing negative events and outcomes to external forces etc. The data on OID was therefore collected through different mediums, like survey-questionnaires, focus group discussions and involves cross referencing with data on OID to be acquired from the credit bureau at a later stage.

The study in specific could not collect adequate data on financial literacy to make any assessment of the financial literacy levels of the respondents or the correlation of the variable to over-indebtedness.

Additionally, the data collected on stress and anxiety faced by the respondents in relation to repayments is based on their own subjective assessment of stress and “burden felt” when it came to making loan repayments. Likewise, the data on respondents loans (both from formal and informal institutions) are based on the information given to us only by the respondents. Being self-reported in nature, the data could be incomplete where the respondent may have chosen to leave out giving us information on some loans over the others. For example, most respondents in our survey only reported loans from formal institutions (as compared to loans from informal sources).

Correlation does not imply causality. In this study, our analyses look at the correlation of key factors and over-indebtedness. Correlation of two factors means that they tend to occur together, and does not necessarily mean causation. However, in order to know causality, it is necessary to first confirm the correlation. Therefore, this study is an important first step to understanding what causes over-indebtedness of microfinance borrowers. The term “driver” in this study is not used to imply causality in the scientific sense but rather focuses on a relationship between variables.

5.7 UP AHEAD

The sections that follow (descriptive analysis and econometric analysis) discuss and lay out evidence for potential drivers of over-indebtedness, as identified by our study data. Section 6 presents the empirical data that describes the characteristics of our study sample. Section 7 provides unprecedented insight into the drivers of over-indebtedness. Based on our discussion in section 6

and 7, section 8 of this report offers a conclusion and develops recommendations to address the problems of over-indebtedness.

6 DESCRIPTIVE ANALYSIS

This descriptive analysis section provides an overview of the characteristics of our study sample. This is aimed to not only provide descriptive statistics of the respondents but also to look at possible factors that may or may not be associated with the respondent's struggle to repay loans. Such factors will then be tested more rigorously in the following section on econometric analysis.

Based on the two OID measures (Indebtedness index-1 and Indebtedness Index-2) adopted for the study (see section 5.3), we develop a binary index that denotes whether a household is over-indebted by either of the two indices. More specifically, we consider a household to be over-indebted if:

a) it is at risk of becoming over-indebted, critically over-indebted or insolvent based on indebtedness index I, or
b) it is over-indebted by indebtedness index II

Based on the binary index, more than 20 per cent of the sample population was identified as over-indebted: 21 per cent in Uttar Pradesh, 22 per cent in Uttar Pradesh and 25 per cent in Karnataka (see table below).

Table 5.1: Distribution of Over-indebted households across districts

	Allahabad	Indore	Mysore	Total
Not Over-indebted	513 (79%)	458 (78%)	499 (75%)	1470 (77%)
Over-indebted	133 (21%)	133 (22%)	163 (25%)	429 (23%)
Total	646	591	662	1899

6.1 DEMOGRAPHICS

Our sample consisted of 1955[13] respondents across the three districts of Allahabad, Indore and Mysore. Since MFI loans are mostly taken under the name of the woman of the household, 96% of our respondents were women and 18% of the surveyed households had a female as the household head. The median age of the sample was 37 years with 90% of the respondents being between ages 24 and 53 years. The median household size was 5 with 90% of the household consisting of 2 to 8 members. 65% of

13 Data was collected on 2116 respondents but 161 respondents did not report any information on outstanding loans and had to be dropped from the analysis.

the households had one adult female and 25% have two adult females. In terms of religion, 94% of our sample consisted of Hindus. Muslims compose the remaining 6%. 93% of the households belong to the SC/ST/OBC group and 87% households possess a ration card. The table below provides a summary of the demographic characteristics of our sample.

Table 6.1: Demographic Characteristics of the Sample

Variable		District			Total
		Allahabad	Indore	Mysore	
Average Age		37 years	35 years	38 years	37 years
Religion	Hindu	93.6%	91.5%	97.3%	94.2%
	Muslim	6.4%	8.5%	2.5%	5.7%
	Christian	0	0	0.2%	0.05%
Caste	SC	83.2%	50%	32%	55%
	ST	2.9%	9.3%	38.3%	17.2%
	OBC	12.3%	23.5%	25.3%	20.4%
	General	1.5%	17.2%	4%	7.4%
Ration Card	BPL	24.7%	55.8%	98%	60%
	APL	45.4%	18.8%	1%	21.6%
	Antyodaya	7.3%	2.7%	0.3%	3.4%
	Annapurna	0.5%	5.8%	0.2%	2%
	None	22%	16.9%	0.4%	13%

6.2 ECONOMIC CHARCTERISTICS

Almost 50% of our sample engaged in non-agricultural wage labour as the main source of household income. The next most prevalent sources of income were cultivation and agricultural wage labour with approximately 13% of the sample falling in each category. The table below shows the largest source of household income across the three states.

Table 6.2: Main sources of livelihood

Largest source of Income	Allahabad Freq. (%)	Indore Freq. (%)	Mysore Freq. (%)	Total Freq. (%)
Cultivation	23 (3.5%)	79 (12.7%)	149 (22.0%)	251 (12.8%)

Agricultural wage labor	46 (7.0%)	56 (9.0%)	166 (24.5%)	268 (13.7%)
Non-agricultural wage labor	473 (72.1%)	338 (54.3%)	139 (20.5%)	950 (48.6%)
Artisan/independent work	19 (2.9%)	25 (4.0%)	52 (7.7%)	96 (4.9%)
Trade	55 (8.4%)	63 (10.1%)	72 (10.6%)	190 (9.7%)
Salaried employee	33 (5.0%)	47 (7.6%)	94 (13.9%)	174 (8.9%)
Other[14]	7 (1.1%)	14 (2.3%)	5 (0.7%)	26 (1.3%)
District Total	656 (100%)	622 (100%)	677 (100%)	1955 (100%)

The median income of the study sample was Rs. 7000 per month and ranged between Rs. 1,500 to Rs. 60,000 per month[15]. Agricultural and wage-based occupations yield significantly lower incomes as compared to other occupations but consumption levels were not found to be proportionally lower. This means that households that engaged in agricultural or wage-based occupations had a high consumption to income ratio. In comparison to salaried employees, the consumption to income ratio of these three occupation categories was found to be 30-50% higher. The graph below provides the monthly income and monthly consumption expenditure figures[16] of households across the above listed occupations[17].

14 Note: The "Other" category includes drivers, milkmen, and service-oriented businesses(tailors, barbers, etc.).

15 The monthly income figures apply to the survey period, i.e. June-July 2016

16 See Appendix 9.1.1 for the list of questions asked to calculate consumption expenditure. For data on income, the respondent was directly asked to provide the net monthly household income.

17 We have excluded the "other" category from this graph because of the negligible number of households in this category as well as the lack of comparability among occupations falling in this category.

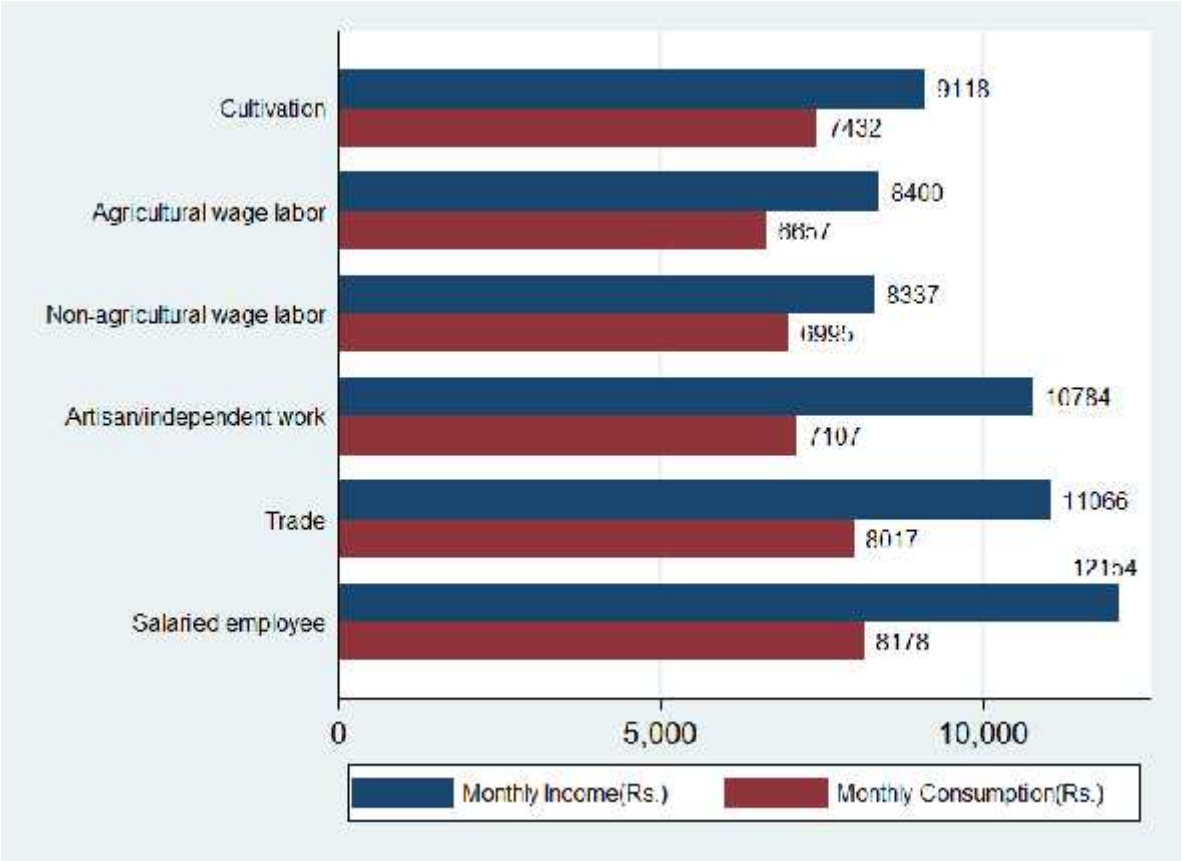


Figure 6.1: Income and consumption expenses by main household occupation

6.2.1 PROGRESS OUT OF POVERTY INDEX (PPI)

The Progress out of Poverty Index (PPI) is an objective client poverty assessment tool developed by the Grameen Foundation[18]. It estimates the likelihood of an individual falling below the poverty line. The index is based on a series of ten simple questions on household's characteristics and asset ownership (see appendix 9.1.5 for the list of questions). Responses to these questions are scored to compute the likelihood that the household is living below the poverty line – or above by only a narrow margin. Since our sample is based in rural areas, we use the RBI Rural Poverty Line[19] to estimate the likelihood of poverty using the PPI score card developed for India[20]. In our sample, we find a high concentration of households toward the right end of poverty likelihood, i.e. a high probability of being below the poverty line.

18 http://www.progressoutofpoverty.org/about-ppi

19 RBI defines an independent Poverty line for rural and urban areas within each state based on the MRP Consumption Expenditure(see Table 9.2) . Link: https://www.rbi.org.in/scripts/PublicationsView.aspx?id=16603

20 http://www.progressoutofpoverty.org/country/india

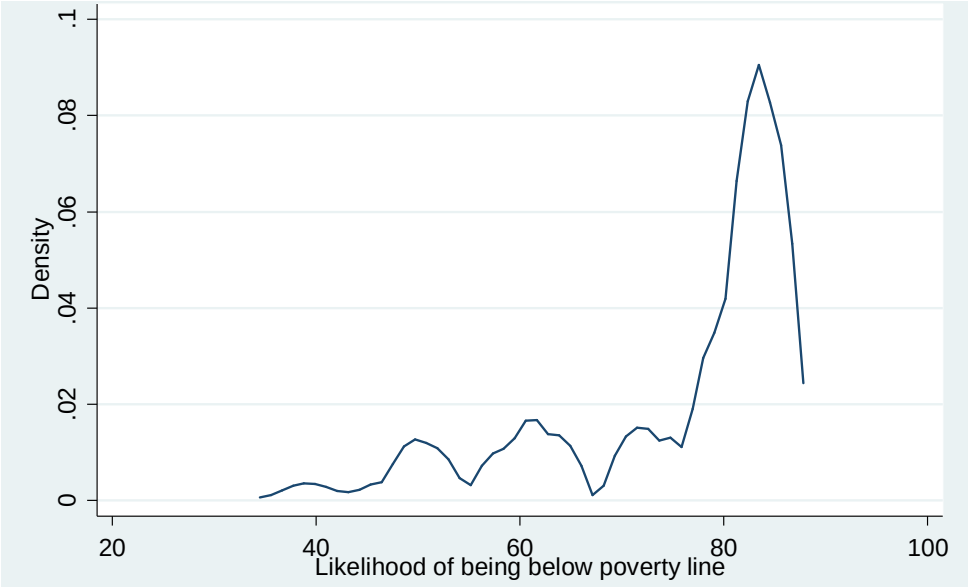


Figure 6.2: Kernel Density Plot of Poverty Likelihood (based on PPI Score)

6.2.2 SAVINGS

Our survey collected data on saving trends[21] among households in our sample. We specifically asked households for the level of liquid savings (cash and bank) and illiquid savings (land, livestock, gold and investment in local shops/relatives' businesses) over three years (2013-2015). The level of liquid savings was found to be very low at an average of Rs. 5,500 with a quarter of the respondents reporting 0 savings. The level of liquid savings was highest in Indore at approximately Rs. 10,000 on average. It was lowest in Allahabad at Rs. 3,200. This difference across districts was partly due to the difference in the livelihood composition within them. Wage laborers tended to have the lowest levels of liquid as well as illiquid savings. Allahabad having a high proportion of wage laborers (see Table 6.2) had a low average saving level. Under illiquid savings again, 42% of the households reported zero savings and there was a wide variation in the saving levels of the remaining sample partially because of different occupational investment requirements[22].

6.3 BORROWING TRENDS AND CHARACTERISTICS

21 We chose not to analyze savings in detail because the data was not considered highly reliable. Several respondents were not open to sharing information on saving levels. See appendix 9.1.4 for the detailed savings roster

22 For instance, agricultural households had large land holdings.

6.3.1 DISTRIBUTION OF OVER-INDEBTED RESPONDENTS BY DISTRICT

The following table shows the distribution of our sample across indebtedness levels (as defined by Indebtedness Index 1) in detail. Close to 15% of the households had a monthly loan service burden that amounted to 40-70% of the monthly household income and close to 8% of the households had loan service burden of more than 70% of the household income. While the concentration of clients who were at the risk of being over-indebted did not vary significantly by district, those who were critically over-indebted or considered insolvent by our study parameters were most prevalent in Mysore (10.7%) followed by Indore (7.3%).

Table 6.3: Distribution of Sample by Indebtedness Index-I

District	Not over-indebted	At Risk	Critical	Insolvent	Total
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Allahabad	497	98	10	25	630
	(78.9%)	(15.6%)	(1.6%)	(4.0%)	(100.0%)
Indore	474	89	18	26	607
	(78.1%)	(14.7%)	(3.0%)	(4.3%)	(100.0%)
Mysore	499	92	28	43	662
	(75.4%)	(13.9%)	(4.2%)	(6.5%)	(100.0%)
Total	1470	279	56	94	1899
	(77.4%)	(14.7%)	(2.9%)	(4.9%)	(100.0%)

The first indebtedness index serves as an indicator of whether a household is facing or will face difficulty in meeting debt repayment obligations. Indebtedness index 2 is based on actual regularity in making repayments. Under this index a household is considered over-indebted only if it has missed 3 subsequent repayments in the past. The table below provides the distribution of the sample across indebtedness index 2.

Table 6.4: Distribution of Sample by Indebtedness Index-II

District	Not OID	OID	Total
	Freq. (%)	Freq. (%)	Freq. (%)
Allahabad	584	71	655
	(89.2%)	(10.8%)	(100.0%)
Indore	610	10	620

	(98.4%)	(1.6%)	(100.0%)
Mysore	670	7	677
	(99.0%)	(1.0%)	(100.0%)
Total	1864	88	1952
	(95.5%)	(4.5%)	(100.0%)

For the purpose of our analysis, we will rely primarily on the first index because it reveals a more comprehensive and pre-emptive picture of over-indebtedness. For the econometric analysis, we use a binary version of over-indebtedness for ease of analysis and interpretation. As described in the introduction of section 6, under the binary index, we consider a household to be over-indebted if:

c) it is at risk of becoming over-indebted, critically over-indebted or insolvent based on indebtedness index I, or

d) it is over-indebted by indebtedness index II

6.3.2 SUMMARY OF BORROWING CHARACTERISTICS

In recent times the microfinance sector in India, has been witnessing an increased incidence of *multiple borrowing*[23] by clients[24]. Our data validates this existence of multiple borrowing among the respondents, with clients borrowing simultaneously from multiple loan sources – including microfinance organizations. Although most respondents had sourced their loans from MFIs, between 2 – 6 per cent of loans in the study locations were sourced from other institutions including private banks, SHGs (Self-Help group) and informal money lenders.

According to the data, most borrowings of the respondents were from formal lending institutions, of which more than 95 percent in all three states were from MFIs only[25]. The aggregated study data showed that, more than 27 per cent of respondents had two or more loans: 22 per cent of respondents had 2 loans, 4 per cent of respondents had 3 loans, and 1 per cent of respondents had 4 or more number of loans.

23 The practice of taking loans from different sources within the same period of time by an individual borrower

24 http://www.cgap.org/events/understanding-multiple-borrowing-and-avoiding-over-indebtedness-among-clients

25 As mentioned earlier, this figure is likely to be biased because a majority of informal lending goes unreported. This came forth during the qualitative surveys.

There was some difference in the borrowing characteristics of our sample across districts with Indore having the highest levels of borrowing. The average size of household borrowings was highest in Indore at Rs. 37,600 followed by Rs. 29,600 in Mysore and Rs. 28,300 in Allahabad. 47% of the sample households from Indore had more than one loan. This figure was 24% in Allahabad and 14% in Mysore. The average number of loans was 1.6, 1.3 and 1.1 respectively. The monthly repayment burden across the three districts ranged from Rs. 1,600 to Rs. 2,500 and the average duration of loans was approximately 2 years.

Table 6.5: Summary of borrowing characteristics by district

District	Average Loan Portfolio Size[26]	Average Number of Loans	Outstanding Amount	Monthly Repayment Amount	Average loan duration (months)
Allahabad	28,397	1.3	13,381	1,617	21.9
Indore	37,684	1.6	9,330	2,528	21.6
Mysore	29,613	1.1	16,361	1,923	23.4
Total	31,769	1.3	13,117	2,014	22.3

Borrowing practices were found to be particularly unsustainable among poorer households. Similar findings have been reported by study on micro credit conducted by IFMR Finance Foundation, where borrowers with unaffordable debt reported not just higher and more frequent borrowings, but also reliance on new borrowings to meet household expenses.[27] The table below provides a glimpse of borrowing characteristics across groups belonging to different income quintiles. The overall average value of the outstanding loan portfolio was Rs. 31,769 with an average of 1.3 loans per household. The value of the loan portfolio does not vary significantly across income quintiles in comparison to income levels. Not surprisingly, over-indebted clients were found to be concentrated among bottom quintiles. Close to 70% of households in the poorest income quintiles were over-indebted (at risk of over-indebtedness or worse), and as many as 26% and 18% of households in the 2nd and 3rd poorest quintiles were over-indebted respectively.

26 This refers to the total amount sanctioned on the currently outstanding loan accounts

27 For more details refer to, "When is Microcredit Unsustainable?", guidelines using primary evidence from low-income households in India, 2016. IFMR Finance Foundation.

Table 6.6: Summary of Borrowing Characteristics by Income Quintiles

Income Quintile	Income Range	Consumption Expenditure	Number of Outstanding Loans	Value of Loan Portfolio	% Over-indebted
Bottom 20%	200-4,600	6,319	1.3	30,929	69.5%
20-40th Percentile	5,000-6,000	6,848	1.2	28,701	25.6%
40-60th Percentile	6,000-9,000	7,096	1.3	31,336	18%
60-80th Percentile	9,000-12,000	7,789	1.4	32,713	7.5%
80-100th Percentile	12,000-70,000	8,242	1.4	35,216	4.1%
Total	200-70,000	7,253	1.3	31,768	25%

6.3.3 BORROWING PROFILES ACROSS INDEBTEDNESS THRESHOLDS

If we look at some of the borrowing indicators discussed above across indebtedness thresholds defined by indebtedness index I, we observe a very stark difference. To begin with, respondents with higher debt burdens progressively had a larger number of loans (see Figure 6.3)

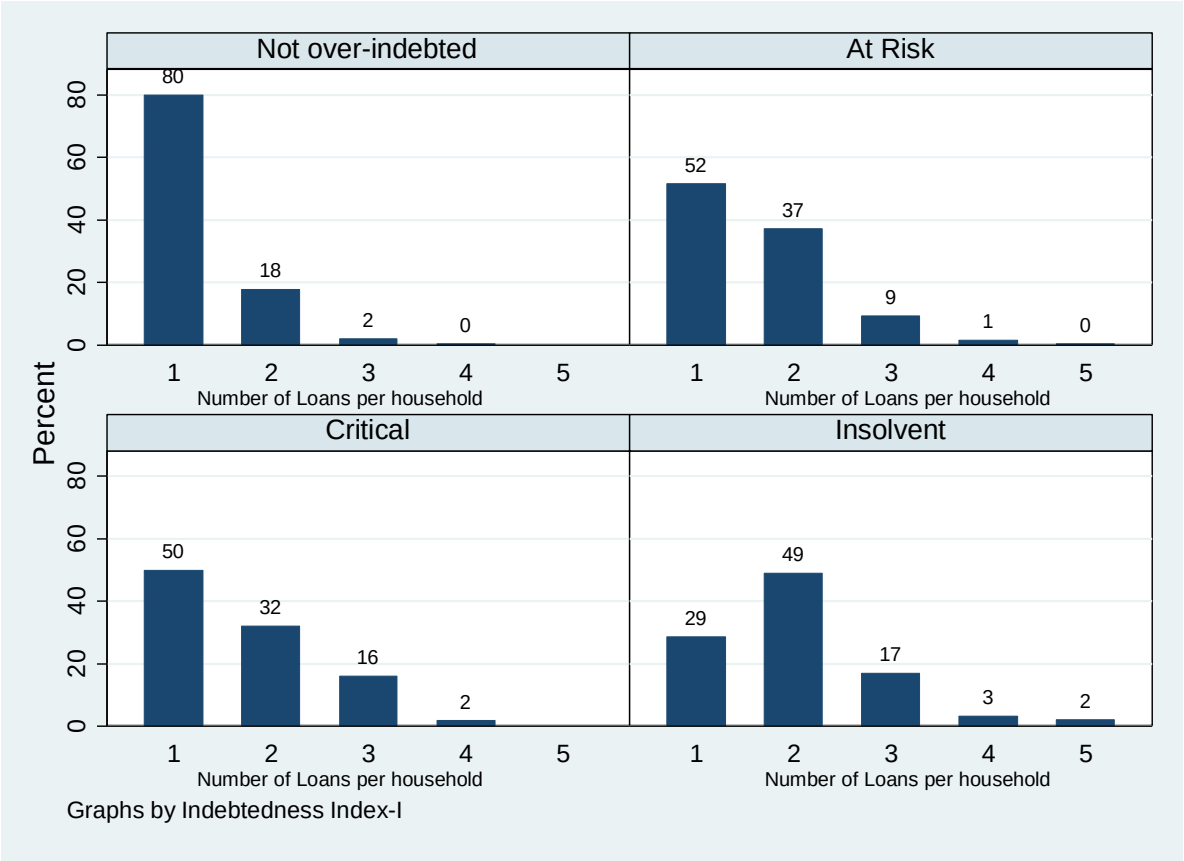


Figure 6.3: Number of Borrowings in different OID thresholds (in %)

The average size of the current loan portfolio of our sample ranges from approximately Rs. 29,000 to Rs. 47,000 across indebtedness thresholds. More specifically, while households that were not over-indebted had an average borrowing of approximately Rs.29,000, households at risk of becoming over-indebted or those that were critically over-indebted had an average borrowing size of around Rs. 40,000 and insolvent household had a significantly higher average borrowing size of Rs. 47,000. Over 40% of this loan amount was currently outstanding for our sample. As expected, the monthly repayment obligations were progressively higher at higher levels of indebtedness, with at risk, critically over-indebted and insolvent households paying an average of approximately Rs. 2,600, Rs. 3,100 and Rs. 5,500 per month respectively to service their debt. 80% of the loans reported by our sample had a tenure of 2 years, 15% a tenure of 1 year and the remaining had tenures of 18 months or 3 years. The average loan tenure did not vary significantly across the four indebtedness thresholds.

Table 6.7 provides summary statistics on loan amounts, tenure and repayment burden.

Table 6.7: Loan Burden and Repayment Anxiety

Indebtedness Index-I	Average Loan Portfolio Size	Outstanding Amount	Outstanding Amount(% of Total Loan Size)	Monthly Repayment Amount	Average loan duration (months)
Not-OID	29,125	11,641	41%	1,642	22.4
At Risk	39,249	17,688	45%	2,612	21.8
Critical	40,321	15,883	40%	3,126	22.3
Insolvent	47,436	21,378	49%	5.499	21.9
Total	31,769	13,117	42%	2,014	22.3

6.3.4 REPAYMENT FREQUENCY

Most households took loans with monthly repayment schedules. This was trues across occupations with primary loans of over 40% of households on a monthly repayment schedule. However, weekly repayment schedules were quite common as well with over 30% households reporting a repayment frequency of one week. The lack of difference in repayment schedules of loans for households engaged in different occupations is noteworthy, especially given the difference of income cycles and stability between them.

Table 6.8: Repayment schedules across main household occupations

Largest source of Income	Weekly	Bi-monthly	Monthly	Once in 3 months/Flexible	Total
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Cultivation	88	44	119	0	251
	(35.1)	(17.5)	(47.4)	(0.0)	(100.0)
Agricultural wage labor	95	60	113	0	268
	(35.4)	(22.4)	(42.2)	(0.0)	(100.0)
Non-agricultural wage labor	269	275	388	2	934
	(28.8)	(29.4)	(41.5)	(0.2)	(100.0)
Artisan/independent work	42	14	39	0	95
	(44.2)	(14.7)	(41.1)	(0.0)	(100.0)
Trade	54	37	95	3	189
	(28.6)	(19.6)	(50.3)	(1.6)	(100.0)
Salaried employee	70	29	73	0	172
	(40.7)	(16.9)	(42.4)	(0.0)	(100.0)
Total	618	459	827	5	1909
	(32.4)	(24.0)	(43.3)	(0.3)	(100.0)

6.3.5 OTHER BORROWING CHARACTERISTICS

More than half of our sample borrowers sourced their loan repayment installments through income generated from non-agricultural or business related occupations, over 30% sourced repayment through savings and the rest through informal and formal borrowings (see Figure 6.4). Not surprisingly, insolvent respondents tended to depend more on borrowings[28] for repayment than other indebtedness categories. Another noteworthy aspect is the more frequent use of agricultural income for loan servicing

28 Cross-borrowing is discussed in more detail in the next section.

among over-indebted households. This is related to the higher incidence of over-indebtedness among agricultural households, discussed in more detail in the next section.

Figure 6.4: Repayment mechanisms [29]among different OID thresholds (in %)

Over-indebted respondents preferred the recovery practices of government and cooperative banks significantly more than those who were not over-indebted. OID clients were also significantly more likely to have reported knowing someone who has been subject to debt collection coercion on the part of an MFI[30](see Figure 6.5). Our qualitative data reveals that government and cooperative banks were preferred over other institutions in recovery practices due to the flexibility they offered when it came to making repayments of loan installments. Participants of the focus group discussions across all states also stated fearing the use of coercive methods being adopted by MFIs in recovering loan amounts.

29 The above mechanisms of repayment represent the main source of funds to make repayments. In general, households might have used more than one source of funds to finance loan servicing requirements.

30 Note: While more OID respondents reported knowing someone who was subject to MFI coercion than non-OID respondents, an equal proportion of OID and non-OID respondents reported having been subject to MFI coercion themselves.

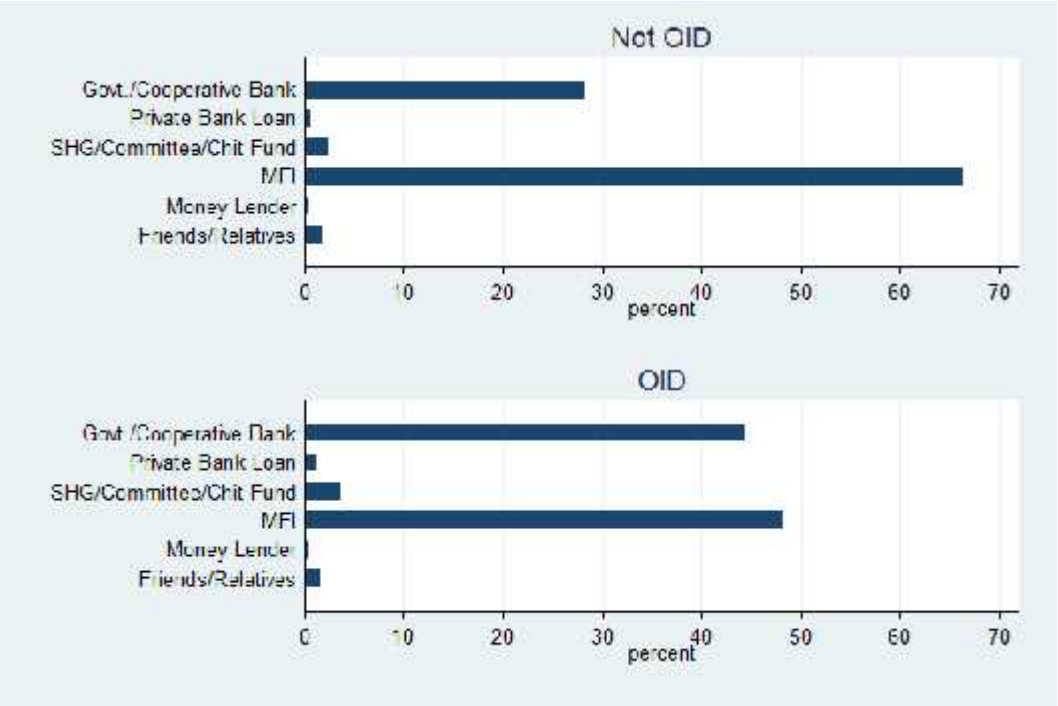


Figure 6.5: Preference over Loan sources based on recovery practices among different OID and Non-OID clients (in %)

6.4 LOAN REPORTING AND REPAYMENT ANXIETY

In terms of loan reporting, more than 75 per cent of the respondents in the study stated reporting all their existing loans to loan officers when attempting to acquire new loans. The section of those who did not report all their existing loans to loan officers during attempts to acquire new loans was the highest in UP, at 33 per cent followed by Karnataka at 22 per cent and MP at 11 per cent. The most common reasons cited by the household for not disclosing all current loans were fear of being refused more loans, and fear of existing loans getting cancelled (see appendix 9.1.5 for the list of questions on reporting practice).

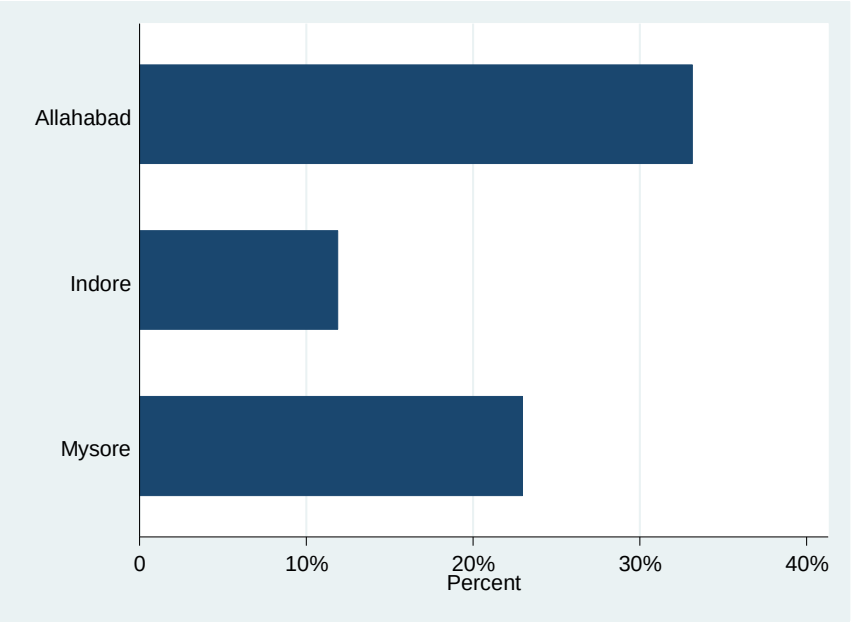


Figure 6.6: Percentage of households that do not report all current loans while applying for a new loan by district (%)

Notwithstanding the difficulties that some borrowers have faced in making loan payments, especially multiple loan payments (Table 6.9), most respondents felt that the loan uptake had ultimately been more beneficial than not having a loan at all. Borrowers overall seemed to believe that their incomes improved because of taking loans. Our FGDs shed more light on this, wherein most participants felt that the loan amount from MFIs provided huge relief in meeting their financial needs, ranging from financing businesses to smoothening consumption. Participants, who stated primarily using some loans for non-productive purposes, claimed that it allowed for other loan amounts to get used solely for productive purposes.

Our survey also collected data on self-reported levels of stress caused due to repayment obligations. Respondents were asked to rate their stress level on a scale of 10, 10 representing the highest level of stress and 1 the lowest. More than 30 per cent of the respondents in all three states reported feeling anxious on the higher end of a scale, when it came to making loan repayments (see Table 6.9). Repayment anxiety was found to be highest among respondents who were at risk of over-indebtedness and those who were insolvent.

Table 6.9: Report repayment-induced stress levels[31]

Self-reported stress levels due to repayment anxiety	Not-OID	OID
1-3	21.7%	12.4%
4-6	55.5%	55.5%
7-9	19.8%	20.6%
10	3%	11.5%

The most common coping strategy adopted by the respondents to meet their loan repayment obligations on time, and to meet monthly expenses was to cut back on spending (more than 35 percent) followed by taking money out of savings, borrowing food or money from relatives and working extra to earn more money. Other sacrifices, made by fewer borrowers, included postponing paying of bills, or taking loans from informal money lenders. OID households resorted more often to borrowing than other groups.

There was a high level of tolerance for making sacrifices to repay loans that existed among the borrowers based on qualitative assessments of the focus group discussions in all three states. Nevertheless, the survey findings do reveal that despite the high level of tolerance, more than quarter of the borrowers, admitted to having struggled to make repayments over the past 12 months. Among OID households, 40% reported not having confidence in being able to meet debt obligations a few days before the repayment date. This struggle to repay faced by OID clients specially is an early warning sign that needs to be taken into account in order to understand possible over-indebtedness. In addition, OID household were more likely to have observed MFI coercion imposed upon other households[32]. Instances of loan rejection were rare among both OID and not-OID households.

The table below summarizes some basic signals of stress recorded in our survey.

Table 6.10: Other Stress Signals

Stress Signals	Not-OID	OID
Had confidence being able to repay a few days before repayment date	78%	61%
Faced Loan rejection	3%	4%

31 These are self-reported figures and should be read with caution but should be comparable across the above listed groups given the large sample size.

32 This question was thought to be sensitive and was intentionally asked in a third-person format to reduce reporting bias.

Know someone who has been subject to coercive repayment collection by MFIs	3.5%	9%
Find it difficult to manage repayment for multiple loans	60.5%	68.2%

6.5 FINANCIAL LITERACY

In order to measure the levels of financial literacy among our respondents, we asked them a series of questions on basic financial practices. Unfortunately, this section could not be made comprehensive, and the data on the same is very limited for conducting any thorough analysis. To briefly mention however, we did not find a large difference in the financial literacy scores of respondents across districts as well as indebtedness levels.

Among the four financial literacy questions asked, respondents fared much better on interest-related questions than on questions related to the credit bureau. Over 90% were able to answer the first question on interest rates but around 30% were unable to answer the second question which required calculation of interest amount using a percentage figure. Only 9% of the respondents had heard of the credit bureau and among them only 6% understood its role.

7 ECONOMETRIC ANALYSIS

The following section analyses the characteristics of over-indebted households which have been briefly discussed above in a more comprehensive and in-depth manner.

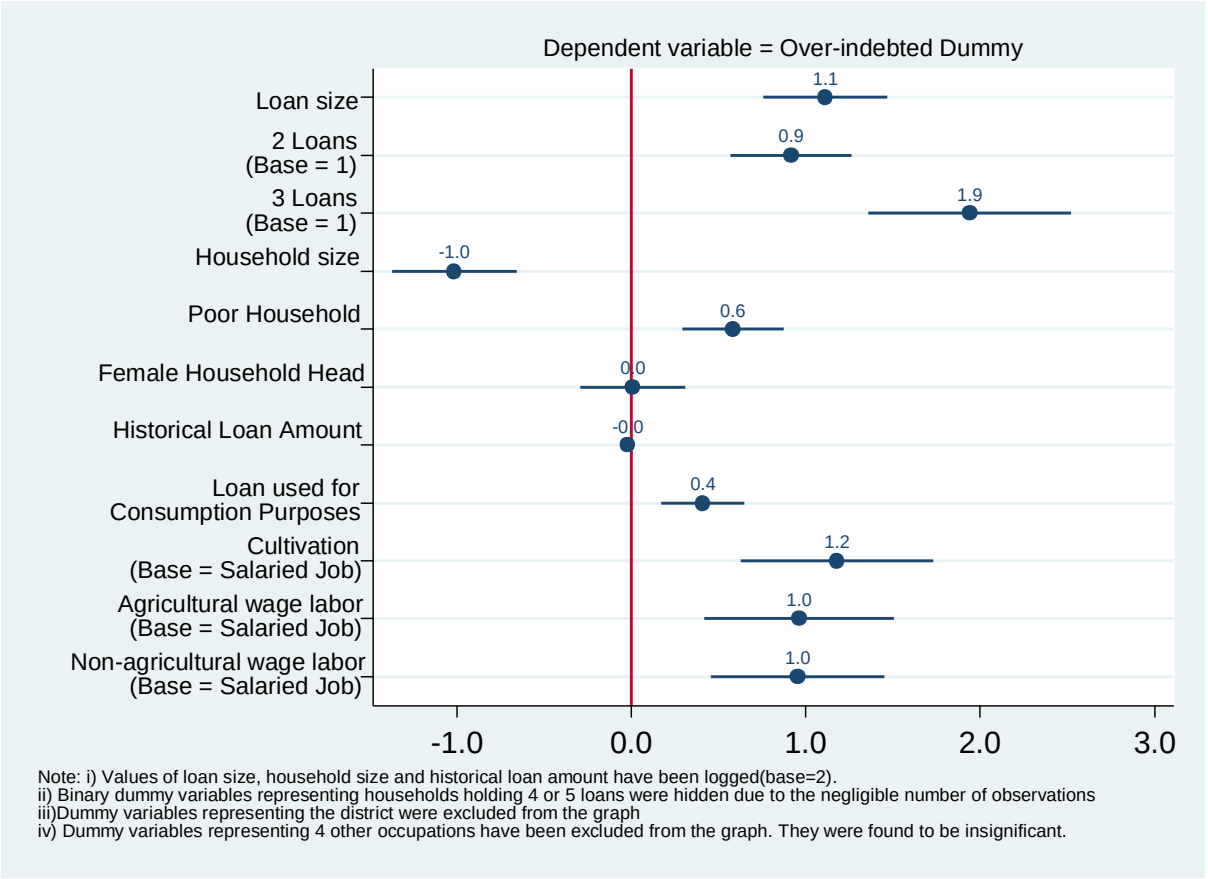
ECONOMETRIC MODEL

We employ a multivariate analysis[33] which allows for identify factors that are significantly correlated to over-indebtedness. The graph[34] below provides the percentage effect of some household characteristics on the likelihood of being at the risk of over-indebtedness. The circle marker represents the estimated coefficient corresponding to the variable listed on the left and the line represents the 95% confidence interval of this estimate. If the circle marker along with the 95% confidence interval is to the right of the zero–line, it means that the variable listed on the left is significantly positively correlated with the likelihood of being over-indebted. For example, having 3 loans exposes households to a very high likelihood of being over-indebted. Similarly, if the marker is to the left, it means that the variable significantly reduces the likelihood of being over-indebted. The actual effect size in percentage terms can be obtained by manipulating the estimate provided in the graph[35].

33 A multivariate analysis allows us to isolate the effect of each individual factor while controlling for other factors which might have an influence on our variable of interest, over-indebtedness. This method is preferred over a bivariate correlation analysis because, without accounting for the level of other variables, the magnitude of this relation might be biased.

34 Figure 9.14 in the appendix 9.1.8 provides a comparison of the coefficient estimates when the binary variable of interest (under graph ref) is segregated into two categories – i) household is at risk of being over-indebted; ii) household is critically over-indebted or insolvent.

35 The regression results are based on a multivariate logistic regression model. Interpreting the coefficients of the logistic regression with log-transformed(base = e) and dummy predictor variables requires some transformation. The coefficient of the log-transformed variables can be interpreted as follows – increasing the predictor variable by 172% results in a (exp(B)-1)% change in the probability of being over-indebted. So an increase of 1% in the predictor variable increases the likelihood of being over-indebted by (exp(B)-1)/172 %. For dummy variables such as whether the loan was used for consumption purposes, the B coefficient should be transformed as (exp(B)-1) This transformation is the percentage change in the likelihood of being over-indebted as the dummy variable switches from 0 to 1.



Note: i) Values of loan size, household size and historical loan amount have been logged(base=2).
ii) Binary dummy variables representing households holding 4 or 5 loans were hidden due to the negligible number of observations
iii)Dummy variables representing the district were excluded from the graph
iv) Dummy variables representing 4 other occupations have been excluded from the graph. They were found to be insignificant.

Figure 7.1: Multivariate coefficient plot showing the size of effect of OID drivers on the likelihood of being over-indebted

Based on the above analysis, the following factors are found to be significant drivers leading households into over-indebtedness (each factor has been discussed individually based on results of the regression model above: Figure 7.1):

7.1.1 SIZE OF CURRENT LOAN PORTFOLIO

Larger loan size significantly increased the likelihood of over-indebtedness. More specifically, increasing size of the loan portfolio by 1% increased the likelihood of being over-indebted by 1.18%[36]. The following graph plots the relationship between the estimated levels of monthly loan service burden to monthly

income ratio. We observe that this ratio increased consistently with the size of the loan portfolio[37] starting from a loan size as low as Rs.13,000[38].

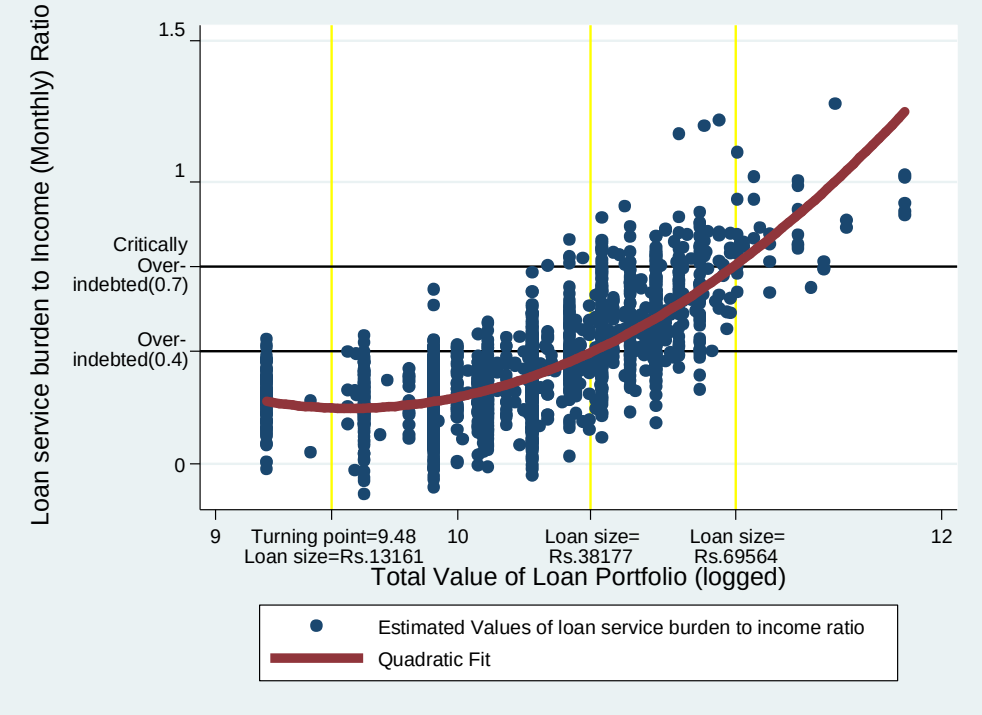


Figure 7.2: Quadratic relationship between estimated values of loan service burden to income ration and value of loan portfolio

7.1.2 NUMBER OF LOANS TAKEN

Multiple borrowings were found to be significantly correlated with indebtedness. This could be the consequence of the difficulty in managing and planning for multiple loan cycles, as well as the increase in the monthly repayment burden. As per our model, taking on a second loan increases the likelihood of being over-indebted by 150% and taking 3 loans (as opposed to 1) increases it by as much as 576%[39]. In table ref, we observe that 17%, 42% and 64% of household with 1, 2 and 3 loans respectively were found to be over-indebted.

Table Figure 7.3: Number of outstanding loan accounts by district

37 The estimates of the loan service burden to income ration are calculated based on a multivariate regression consisting of all the predictor variables listed in Figure 7.1.

38 As mentioned in the previous section, 'size of loan portfolio' refers to the total amount sanctioned on the currently outstanding loan accounts

39 Note: This figure should be read with caution because, while the estimate is based on a multivariate regression analysis that controls for other significant factors, only 5% of our sample that took more than 3 loans.

Number of Loans	Not indebted	Over-indebted	Total
	Freq. (%)	Freq. (%)	Freq. (%)
1	1182	240	1422
	(83.1)	(16.9)	(100.0)
2	255	181	436
	(58.5)	(41.5)	(100.0)
3	29	52	81
	(35.8)	(64.2)	(100.0)
4	5	8	13
	(38.5)	(61.5)	(100.0)
5	0	3	3
	(0.0)	(100.0)	(100.0)
Total	1471	484	1955
	(75.2)	(24.8)	(100.0)

7.1.3 HOUSEHOLD SIZE

Our regression analysis reveals that smaller households were significantly more prone to being over-indebted. This could partially be as a result of diversification of income sources when there are more members in the household. The table below also reveals that the average size of the loan portfolio for bigger households differed from that of smaller households by a proportion smaller than that of household income.

Table 7.1: Economic and borrowing characteristics by size of household

Household size	**Freq.**	**Average monthly income**	**Average monthly consumption**	**Average number of loans**	**Average size of loan portfolio**
1-2 members	108	6,110	4,470	1.2	28,000
		(5,000)	(4,140)	(1)	(25,000)
3-4 members	785	9,040	6,720	1.2	30,830
		(7,000)	(6,250)	(1)	(27,000)
5-6 members	774	9,330	7,760	1.4	32,570
		(8,000)	7,230)	(1)	(30,000)
7-8 members	217	9,780	7,910	1.4	33,710
		(8,000)	(7,370)	(1)	(30,000)
9 or more members	71	12,310	9,900	1.5	33,240
		(10,000)	(9,210)	(1)	(30,000)
Total	1,955	9,200	7,250	1.3	31,770

	(7,000)	(6,700)	(1)	(30,000)

Note: Median values provided in brackets

7.1.4 POVERTY

For the purpose of our econometric analysis, we transform PPI into a binary variable. We define a household as poor within the context of our sample if it belongs to the bottom 25% bracket in terms of its PPI score. The median monthly income level of these households is Rs. 7,000. We find that these households are 80%[40] more likely to be over-indebted. This result points to the fact many poor households in our sample have taken unsustainable amounts of loan which drove them into a debt trap. Table Figure 7.4 reveals that despite belonging to a lower income bracket, the borrowing patterns of these households are not very different in terms of both the number of loans taken as well as the size of the loan portfolio.

Table Figure 7.4: Comparison of borrowing characteristics of the poorest households with other

PPI Score Bracket	Average Monthly Income	% of households with more than 1 loan	Average Value of Loan Portfolio
Bottom 25%	10,737 (10,000)	26%	33,276 (30,000)
Rest of the Households	8,645 (7,000)	28%	31,230 (30,000)

Note: the figures inside brackets are median values

7.1.5 USING THE LOAN FOR CONSUMPTION OR NON-PRODUCTIVE PURPOSES

Loans taken by households could be employed for either productive or non-productive purposes[41]. Our survey asks the respondents what purpose they had taken each loan for as well as how the loan amount

40 (e0.6-1) * 100

41 See appendix 9.1.6 for details on the distribution of loans across different purposes.

was actually spent. Our regression results suggest that having used a loan for consumption/non-productive purposes[42] increases the likelihood of being over-indebted by 50%[43].

Envisaged Purpose of Loan versus Actual Use Pattern

Households in our sample reported often using loans for purposes different from the one which they had envisaged. Figure 9.2 in the appendix 9.1.6 shows the distribution of borrowings across different purposes for which loans were intended to be used, as well as purposes for which loans were actually used having received it. Over-indebted respondents in our sample were more likely to both take loans for unproductive purposes as well as use them for these purposes. It is also noteworthy that, a significant number of loans (over 20%) that were initially designated for a productive purpose were later used for unproductive activities. Again, over-indebted households were more likely to do this.

Table 7.2: Pattern of usage of loans

Indebtedness	% of loans designated for productive purposes	% of loans used for productive purposes	% of Loans designated for productive purposes which were ultimately used for unproductive purposes
Not-OID	69%	55%	13%
OID	62%	47%	23%
Overall	67%	53%	15%

Furthermore, shifting loans from a productive designated purpose to an unproductive use significantly increased the likelihood of being over-indebted. We also find that taking loans for unproductive purposes increases the likelihood of being over-indebted by an equal amount as using a loan initially designated for a productive use towards a consumption purpose. See Table 9.5 in the appendix 9.1.7 for detailed results.

7.1.6 AGRICULTURE-RELATED AND WAGE-BASED OCCUPATIONS

Among our sample, households whose main source of livelihood is cultivation or wage labor in agricultural or non-agricultural avenues are significantly more prone to over-indebtedness. One of the

42 Productive purposes consist of expenses that are income generating. This includes – starting a new business, buying agricultural machinery/inputs, improving existing business, land purchase, buying stock for trade and investments in tailoring, grocery shop, dairy farm, garment and petty shop businesses. Unproductive purposes include non-income generating expenses such as repaying debt, health, marriage, funeral, festivals, home improvement/repair, jewelry purchase and education and household consumption.

43 (exp(0.404)-1) * 100

likely reasons for this was the high ratio of monthly consumption expenditure to monthly income. This implied a low level of surplus income left among these households to service loan repayments. Table 7.3 shows the discrepancy in income levels and loan service burdens across different occupations which predispose these occupations to be more prone to over-indebtedness.

Table 7.3: Discrepancy in repayment obligations and income surplus by main household occupation

Primary Source of Income	Freq.	Average Monthly Income	Average Monthly Consumption Expenditure	Average monthly loan service amount	% Over-indebted
Cultivation	251	9,097 (8,000)	7,428 (6,925)	2,327 (1,630)	28%
Agricultural Wage Labor	268	8,401 (7,000)	6,666 (6,270)	1,835 (1,475)	28%
Non-agricultural wage labor	950	8,335 (6,000)	6,994 (6,433)	1,909 (1,500)	25%
Artisan/Independent Work	96	10,784 (10,000)	7,107 (7,115)	1,948 (1,610)	15%
Trade	190	11,066 (9,000)	8,017 (7,350)	2,190 (1,740)	22%
Salaried Employee	174	12,154 (10,000)	8,178 (7,604)	2,145 (1,640)	15%

Note: Median figures are provided in brackets

We observe that agriculture and wage-based occupations have higher or nearly equal monthly repayment obligations whereas their incomes are significantly lower than other occupations. In addition, the surplus income available after taking care of consumption expenses is as low as Rs. 1,300 among non-agricultural wage laborers, Rs. 1, 700 among cultivators and agricultural wage laborers. It is not surprising that the concentration of over-indebted households is significantly higher among these occupations, with 25% OID household among cultivators, and 28% and 25% OID households among agricultural and non-agricultural wage laborers respectively. Note that for cultivators, the high rate of over-indebtedness persists despite the high rate of investment of loans in livestock and business (see appendix 9.1.99.1.9).

7.1.7 CROSS-BORROWING

Cross-borrowing refers to taking on additional debt to service existing debt obligations. As one would expect, over-indebted household were found to engage in this practice more often than others. More specifically, over 20% of over-indebted households reported that they have taken new loans to pay off existing debt at least once whereas only 6.5% households who are in a safe debt range reported having done so[44].

A similar trend is observed in Figure 6.4 where we see that over-indebted households are more likely to use borrowings as a source to make repayments on loans.

Table 7.4: Incidence of Cross-Borrowing

	Did not practice cross-borrowing Freq. (%)	Practiced cross-borrowing Freq. (%)	Total Freq. (%)
Not indebted	1375	96	1471
	(93.5)	(6.5)	(100.0)
Over-indebted	379	104	483
	(78.5)	(21.5)	(100.0)
Total	1754	200	1954
	(89.8)	(10.2)	(100.0)

To summarize, a combination of low and unstable incomes, multiple borrowings, large borrowing size, unproductive employment of loans and the practice of cross-borrowing seem to push households towards over-indebtedness. Understandably, the fundamental problem is the discrepancy between the level of borrowing and income levels, i.e. loans often seem to impose a monthly repayment burden that in incompatible with the household income surplus. This results in high levels of repayment anxiety and

44 Question asked: "Have you ever borrowed from one lender to pay back another lender? 1) Yes, 2) No, 3) Don't Know, 4) Refuse to Answer"

often pushes borrowers to resort to cross-borrowing. This trend was found to be more prevalent among low and unstable income groups[45], particularly households that relied on agricultural and wage-based occupations. It appears that because of the low levels of surplus (monthly income minus monthly consumption), these households are also more likely to borrow for consumption purposes or are sometimes forced to use borrowed money for consumption purposes which has negative implications on debt sustainability. Multiple borrowings emerge as particularly caustic in the situation of low levels of surplus, adding to the immediate debt burden. It appears that despite RBI's two-loan limit, several households (5% in our sample) are able to withdraw 3 or more MFI loans, which makes them particularly vulnerable to over-indebtedness. Furthermore, our qualitative study and data on repayment mechanisms indicate that a lot of informal lending did not get reported in our surveys (this has been mentioned clearly in the study limitations section of the report). Some focus group participants believed that this lack of data by survey respondents could be due to fear: fear of their existing loan amounts from formal institutions getting impacted adversely. The following section discusses some of the nuances and policy recommendations emerging from the above analysis.

45 Close to 10% among cultivators and agricultural wage laborers and as high as 13% among non-agricultural wage labourers

8 IMPLICATIONS AND RECOMMENDATIONS

Endangering both MFI sustainability and the social impact of microfinance, over-indebtedness is currently one of the most important challenges in microfinance. Customer protection efforts are one of the industry's top priorities. Nevertheless, over-indebtedness, especially from the customers' perspective, remains highly under researched to date. This study probed into the potential drivers of over-indebtedness through a comprehensive quantitative and qualitative analysis of primary data collected over a period of two months, across 3 states in India. The above analysis of the data reveals a few important factors that were significantly correlated with over-indebtedness among our sample, the implications of which shall be discussed in this section.

It is often assumed that getting access to credit could either act as an enabler in getting a client out of poverty or at the least improving her economic situation. However, as the above data on loans held by the respondents demonstrate, getting access to loans was not an issue for most respondents. Yet, instead of improving the financial situation of the client, greater access to credit was seen to be directly related to the incidence of over-indebtedness among borrower households.

Multiple borrowing: Although greater access to credit in our study was seen to be directly related to over-indebtedness levels of the respondent household, there are nuances to this finding. Multiple borrowing is a common feature in the borrowing systems of not just the poor but even the well-off in today's world and therefore its linkage with over-indebtedness should not be read into casually. A more nuanced analysis of this data shows, from the clients' perspective, that cross-borrowing can take place due to many reasons ranging from limited inadequate loan sizes of MFIs (since loan amount is based on loan cycle) for cash flow smoothing to limited capacity of MFIs to lend for 'productive' purposes. From the lender's perspective, multiple borrowing maybe a result of the inability to calculate the debt capacity of clients due to foreseeable (relying on client's self-reported income figure for debt assessment) and unforeseeable reasons (limited knowledge on the number of outstanding loans held by the client from formal and informal sources).

Loan size: From a provider level, a weakness of many group-lending models is that of limited cash flow analysis. Hence, the debt service burden is not compared with net disposable income and the risk of over-indebting a client is not appropriately addressed. A study by ACCESS-ASSIST on MFI practices states 68 per cent of MFIs relied on the client's self-reported cash-flow analysis and discussions with family

members, and only 15% MFIs reported using supporting document like bank passbook, business details etc. to analyze the client's income levels.[46]

Larger loan size, especially with poorer households considerably increased the likelihood of being over-indebted according to our data, as has been discussed in the previous section. From the clients' perspective, our FGDs revealed that many clients were aware of the loan sizes being large - large enough for them to at times doubt their ability to service the repayment of the loan amount. Yet some of the common reasons cited for the loan uptake were - dire need for consumption smoothing, repayment of other existing high interest loans or borrowing to meet requirements of an emergency, health, marriage or construction of house.

Poverty and loan use: Our analysis from the previous section also suggests that poorer households are more likely to be OID. However, the problem with being poor is not just that income is low, but also that it tends to be unstable and vulnerable to disruption. Borrowing to deal with adverse economic shocks, use of loans for non-productive purposes, and borrowing to cope with repayments on existing loans significantly increases the likelihood of being over-indebted. From the provider perspective, ACCESS-ASSIST study shows that while 80% of MFIs interviewed confirmed having an organizational policy in place to check on the loan utilization by clients, verification of loan usage happens only at the time of first installment collection or within one month to 45 days of loan disbursement. This makes it hard to assess the purpose for which the loans are actually used, apart from how much of the amount actually gets used for productive purpose. From the clients' perspective, borrowers with different economic and occupational backgrounds and difference in uses cases for loans give rise to different repayment hurdles and warrant different responses to repayment difficulties. These diversities in economic situation, including varied time-period of income flow, are not taken into account by MFIs. 75% of the MFI staff interviewed claimed that the institution does not even allow for pre-payment of loan installments.

These nuances have important implications for the development of measures against over-indebtedness. Recommendations for key groups of industry stakeholders have been developed based on the findings of the study and observations made above. Three main areas for policy recommendation in which actions can improve the current situation and prevent the deepening of indebtedness are: (i)

46ACCESS-ASSIST, Lending and repayment practices in the MFI sector (2016)

responsible and sustainable lending practices (ii) transparency and information sharing about credit activities and (iii) financial education and legal counseling of clients.

(i) **Responsible and sustainable lending practices**:

- *Strengthen cash-flow analysis and account for adverse shocks when assessing loan uptake capacity of client prior to loan disbursement*: Our study points towards the need to have standard robust methodologies in place to assess the cash-flow of client that rely on more than just self-reported income data. This could include bank record analysis, or business site field-visits on part of the loan procurement officer. Additionally, such assessments of loan capacity for the client should also take into account frequently common adverse health or economic shocks and other emergencies. IFMR-Lead is in the process of conducting a research study on proving better cash flow analysis application tools to the MFI sector, which can be incorporated in loan application forms. This would help capture more accurately the income-loan assessments for households and appropriate credit eligibility amount. The objectives of this study would include identifying and developing easy ways to assess appropriate size of loan amount for a household prior to loan disbursement using multiple techniques from income assessment (from all sources), variations in occupation, repayment capacity of the household to the impact of external factors on the cash flow of households.

- *Adequate infrastructure to support clients:* The problems of indebtedness are exacerbated by high growth rates of MFIs that are not supported by adequate operating infrastructure (for instance: overstretched client employee ratio) [47], whereby the staff and the branches are unable to sustain giving adequate attention to the usage of loans, repayment abilities etc. for such large number of loan accounts. There needs to be a reassessment and readjustment of the MFI branches/employee to client ratio to ensure each client is being given due attention.

- *Flexibility in repayment schedule based on occupational / income profiles*: As established by the data, the cash flow and income generation of clients is diverse and highly dependent on the occupation of the client. Attempts should therefore be made to provide for a repayment schedule that is best suited for the client's income pattern. The typical weekly and bi-monthly

47Many reports, such as the series on problems that beset microfinance point towards overstretching of the lending infrastructure. http://www.livemint.com/Opinion/Gn7z2lGvfvwgoyjxByRHpO/Murmurs-of-a-fresh-crisis-in-the-microfinance-sector.html
http://thewire.in/26562/fault-lines-microfinance-industry/

installment schedule of microfinance may be too inflexible given the volatility of cash flows of micro-borrowers. At a low level of income, a client may not have sustainable option to repay a loan installment in 'bad week/weeks'. Similarly, irregular income surplus based on occupation (for example generation of income surplus for clients in agricultural sector during produce season) needs to be taken into account while setting repayment schedules for potential client prior to loan disbursement. IFMR-Lead is presently conducting a study where repayment schedules are being aligned with business cash-flows to allow for better investments and provide flexibility in bad months to smoothen consumption. This study product with flexibility in repayment allows for making repayment in good months to stock inventory and make profits. The uptake choice between this flexible repayment product and a standard monthly repayment product lies with the customer enrolled in the study. Currently, the uptake of the flexible product is at 27 per cent.

- *Flexibility in repayment schedule based on investment returns:* MFIs should also attempt to harmonize the repayment schedule of the client with the occurrence of investment returns on the loans taken for productive purposes. IFMR LEAD's 2009 study on the effect of repayment flexibility on loan defaults shows that delaying the onset of repayments by a few months can provide a much needed boost to enterprise growth and thereby reduce the chances of default.[48]

- *Diversification of financial products offered*: Multiple borrowing, as suggested by data above, takes place to meet the client's diverse needs. Clients often used multiple loans for meeting emergency expenses, health needs, receiving inadequate loans for business from another loan (since the loans are based on loan cycles rather than cash flow) etc. There is a need to design products that respond to these diverse needs. Our data points towards a dominant prevalence of such diversified needs among borrower households. This is especially true for the use of loan amounts meant for productive purposes being used for emergency purposes, health reasons or for consumption smoothening.

  Designing and offering products such as emergency loans, health insurance, consumption boost loans that carefully cater to such needs of borrower households and attempt to match actual use of loans on the client end is imperative. A study conducted by UKAid last year points to the lack of enthusiasm on part of the MFIs to invest in R&D, market surveys and product

48 Does Microfinance Repayment Flexibility Affect Entrepreneurial Behavior and Loan Default? October 2009-Erica Field, Rohini Pande & John Papp

development.[49] Policy makers at the apex level and industry investors can earmark soft and concessionaire funds to support MFIs engagement in commercialization of new products and services that meets the needs of specific customer segment. Such diversification of products based on area-specific needs of clients identified through market research and such studies is needed to reduce the number of OID clients, and risks around defaulting due to use of loans for unstated purposes. A horizontal expansion as such would not only enable the sector to contribute towards the drive to sustainable financial inclusion but also add to the sustainability of the loans being offered and reducing risks of delinquency.

- *Reconsidering universal borrowing limits in loan cycles*: In its monetary policy announcement last year, the central bank raised the total indebtedness of a borrower to Rs1 lakh in rural areas, raising the limits for lending by microfinance institutions (MFIs). Yet the limit of loan disbursements during loan cycles is the same for all clients with varying incomes. In the first disbursement cycle of the loan, MFIs can give up to Rs.60,000 out of the total loan amount. In subsequent cycles, the companies can now disburse up to Rs.100,000. Overall the study results show there is a standardized approach in lending averages in loan cycle periods even across diverse income brackets. Such caps on lending might be restrictive to households that might have a genuine need and ability to repay higher loan amounts. The loan amount disbursed should be in relation to the aspirations of the clients depending on their income.

  While the study also shows the prevalence of multiple borrowing among clients, many borrowing even just within the 2 loan limit prescribed by RBI were seen as being over-indebted. Insufficient loan amount for investing in their productive venture was stated as the reason for this multiple borrowing. Linking the loan amount disbursed during the initial and subsequent loan cycles to differentiated income brackets of MFI customers would potentially allow for the loan amount requirements of clients being met for livelihood finance at a given point, and thereby reduce the reliance on multiple sources of loans.

(ii) **Transparency and information sharing about credit activities**: All financial institutions including MFIs should provide full information on credit disbursements and repayment performance of all its clients in a timely manner to the credit bureau. By sharing information on borrowers, their debt levels and their

49 http://sidbi.in/sites/default/files/psig/j%20(vi).pdf

credit history, MFIs are in a position to reduce the risk of unpaid debt and therefore minimize the chances of losses relating to non-repayment of loans. While this has been encouraged, the practice at present is not followed by all and creates gaps in the credit information available about the client. Credit bureaus can also play a crucial role to enhance transparency in the bank-client relationship that is needed to ensure sound credit decisions and avoid client over-indebtedness. There should be attempts made to further improve the credit report of a client. For example, methods should be devised to incorporate loan officer's qualitative findings into scoring model which would help detect trends in credit behavior and group composition. The credit bureau can also share regional analytical memos on a monthly or quarterly basis with MFIs, from the data accumulated. This would help in understanding the regional credit situations within the country and help in bridging the gaps of inadequate credit information within the industry. Lastly, the two industry self-regulatory organizations (SROs)—Sa-Dhan and Microfinance Institutions Network (MFIN) need to consistently review and update the code of conduct to be followed by MFIs based on present ground level realities, as showcased by such studies. Following of this code of conduct can be incentivized to ensure its popular uptake within the industry.

(iii) **Financial education and legal counseling of clients:** Various studies have established the importance of informal borrowing among the rural population in India. Therefore, even with transparent information sharing at the provider level of formal credit activities, there would be absence of significant data on informal borrowing among clients. While it is hard to track informal borrowings of clients, conducting financial literacy drives that create awareness about sustainable borrowing practices, apart from providing financial services that address the most common needs of clients relying on informal lending (accessibility, flexibility in use as well as repayment and quick turn-around of loan disbursal), could potentially decrease the reliance of clients on informal sources of lending.

Additionally, the revised code of conduct released by the two SROs in relation to customer rights ascertain terms and conditions and current status of the loan and avail necessary documents and receipts, which are in line with the RBI's Right to Transparency, Fair and Honest Dealing. There are also customer rights outlined to access a grievance redressal mechanism with the help of designated staff, receive acknowledgment and a response to grievance within a prescribed time limit, and appeal to a higher internal level or an external redressal mechanism (the nodal office of the RBI) if desired, which are in line with the RBI's Right to Grievance Redress and Compensation. The literacy drives can additionally make clients aware of these customer rights and the legal implications of defaulting.

Summary of Recommendations:

1) **Robust methodologies to assess cash-flow**: Creating more relevant and robust screening systems for loan disbursement to raise portfolio quality.	**2) Infrastructural Support**: Having adequate operational infrastructure in place to support clients (Branch and employee to client ratio).
3) **Repayment Flexibility**: Provide for flexibility in repayment schedules based on occupational / income profiles, client's income pattern and occurrence of investment returns.	**4) Diversification**: MFIs to provide diverse financial products like emergency loans, home improvement loans, savings products, health insurance etc. based on area specific needs.
5) **Incentive effect**: Policy makers at the apex level and industry investors can earmark soft and concessionaire funds to support MFIs engagement in commercialization of new products and services that meets the needs of specific customer segment.	**6) Reconsidering universal borrowing limits in loan cycles***:* Linking the loan amount disbursed during initial and subsequent loan cycles to differentiated income brackets of MFI customers.
7) **Improving credit reports***:* Further improve the credit report of a client. For example, methods should be devised to incorporate loan officer's qualitative findings into scoring model which would help detect trends in credit behavior and group composition.	**8) Greater credit data sharing:** The credit bureau can share regional analytical memos on a monthly or quarterly basis with MFIs, from the data accumulated. Apart from encouraging the practice of sharing client debt levels from all financial institutions. This is at present is not followed by all, creating gaps in the credit information available about the client.
9) Revising code of conduct: SROs need to consistently review and update the code of conduct to be followed by MFIs based on present ground level realities, as showcased by such studies.	**10) Incentive effect:** Following of the code of conduct can be incentivized to ensure its popular uptake within the industry.
11) Attempts to decrease reliance on informal lending: Conducting financial literacy drives that create awareness about sustainable borrowing practices, and providing financial services that address the most common needs for clients to rely on informal lending (accessibility, flexibility in use as well as repayment and quick turn-around of loan disbursal).	**12) Legal counseling:** The literacy drives can additionally make clients aware of these customer rights and the legal implications of defaulting.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9 APPENDIX

9.1.1 ANNEXURE 1: INCOME-CONSUMPTION TRAINGULATION

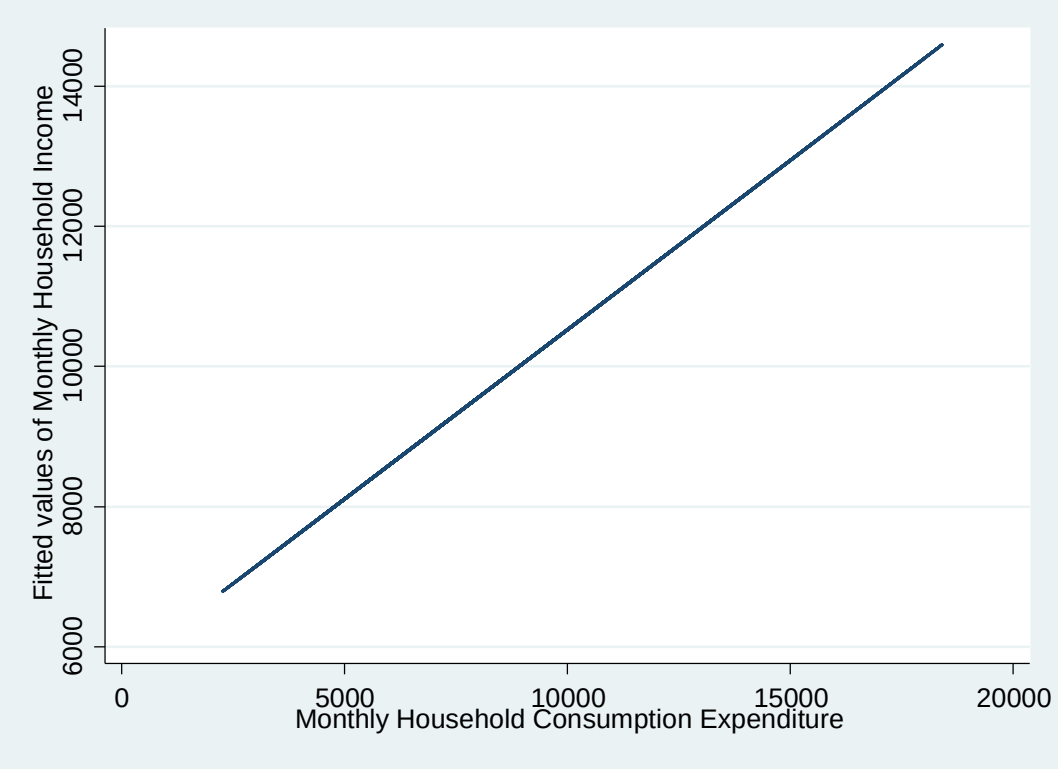

Figure 12: Relationship between monthly household income and monthly consumption expenditure

Note: The above figure provides the estimated values of monthly household income figures based on the regression coefficient (0.5) of a bivariate regression of household income on consumption expenditure.

9.1.2 ANNEXURE 2: CONSUMPTION ROSTER

The consumption roster collected data for consumption expenses in three parts based on the differential frequency of expenses:

I. 7 day consumption period
   a. Fresh fruits and vegetables
   b. Dry fruits
   c. Dairy Products
   d. Eggs
   e. Sugar
   f. Other Expenses

II. 30 day consumption period
   a. Cereal and cereal products
   b. Pulses and pulse products
   c. Edible oil
   d. Fish/chicken/other meat
   e. Condiments (Salt, spices, etc.)
   f. Processed food
   g. Temptation goods (*bidi*, liquor, pan, tea, tobacco, etc.)
   h. Cooking fuel
   i. Toiletries (soap, detergent, etc.)
   j. Mobile/Landline
   k. Entertainment (newspapers, magazines, movie)
   l. Electricity charges
   m. Lottery ticket/Gambling
   n. Rent for the house or any household item
   o. Rent for the shop or other assets used for income generation
   p. Salary pad to a servant or maid or an employee
   q. Travel for work, to meet relatives or for entertainment purposes
   r. Other expenses

III. 365 days consumption period
   a. Education:

i. School and private tuition fee
ii. Books, geometry set, library charges, stationary charges, school transport fees, uniform, etc.

b. Festival, ceremonies and religious events and expenditure
    i. Weddings and festivals
    ii. Funeral
c. Expenditure on clothing and footwear
d. Medical expenses – medication, doctor's fee, hospitalization, travel, etc.
e. Legal expenses
f. Repair/improvement of house
g. Other expenses

9.1.3 ANNEXURE 3: PROGRESS OUT OF POVERTY INDEX (PPI) ROSTER

Serial No.	Question	Response	Score
1	How many household members are there?	A. 8 or more	0
		B. 7	4
		C. 6	7
		D. 5	11
		E. 4	19
		F. 3	26
		G. 2	34
		H. 1	41
2	What is the general education level of the female head/spouse?	A. Primary or below, or not literate	0
		B. Middle	3
		C. Secondary or higher	5
		D. No female head/spouse	5
3	Does the household possess a refrigerator?	A. No	0
		B. Yes	11
4	Does the household possess a stove/gas burner?	A. No	0
		B. Yes	2
5	Does the household possess a pressure cooker/ pressure pan?	A. No	0
		B. Yes	4
6	Does the household possess a television?	A. No	0
		B. Yes	5
7	Does the household possess an electric fan?	A. No	0
		B. Yes	3
8	Does the household possess an *Almirah*/dressing table?	A. No	0
		B. Yes	4
9	Does the household possess a chair, stool, bench or table?	A. No	0
		B. Yes	6
10	Does the household possess a motorcycle, scooter, motor car or jeep?	A. No	0
		B. Yes	19

Based on the scores above, the likelihood of being below the poverty line (RBI Rural) was estimated by the look-up table below:

Table 9.1: Look-up table to convert PPI scores to poverty likelihood

PPI Score	Poverty Likelihood
0 – 4	86.0
5 – 9	86.0
10 - 14	85.2
15 - 19	84.4
20 - 24	84.4
25 - 29	84.4
30 - 34	84.4
35 - 39	83.7
40 - 44	80.5
45 - 49	78.0
50 - 54	71.9
55 - 59	63.2
60 - 64	58.6
65 - 69	50.9
70 - 74	46.9
75 - 79	40.1
80 - 84	38.1
85 - 89	36.3
90 - 94	36.3
95 - 100	36.3

Table 9.2: RBI Rural Poverty Line

Year	State/Union Territory	Rural		
		No. of Persons (Thousands)	% of Persons	Poverty line (Rs./month)
1	2	3	4	5
2004-05 (Based on MRP Consumption)	Andhra Pradesh	18,000	32.30	433.43
	Arunachal Pradesh	320	33.60	547.14
	Assam	8,940	36.40	478.00
	Bihar	45,100	55.70	433.43
	Chhattisgarh	9,780	55.10	398.92
	Goa	180	28.10	608.76
	Gujarat	12,850	39.10	501.58
	Haryana	3,880	24.80	529.42
	Himachal Pradesh	1,430	25.00	520.40
	Jammu & Kashmir	1,160	14.10	522.30
	Jharkhand	11,620	51.60	404.79
	Karnataka	13,470	37.50	417.84
	Kerala	4,220	20.20	537.31
	Madhya Pradesh	25,440	53.60	408.41
	Maharashtra	27,780	47.90	484.89
	Manipur	670	39.30	578.11

	Meghalaya	290	14.00	503.32
	Mizoram	110	23.00	639.27
	Nagaland	150	10.00	687.30
	Odisha	19,880	60.80	407.78
	Punjab	3,670	22.10	543.51
	Rajasthan	16,640	35.80	478.00
	Sikkim	150	31.80	531.50
	Tamil Nadu	13,440	37.50	441.69
	Tripura	1,190	44.50	450.49
	Uttar Pradesh	60,050	42.70	435.14
	Uttarakhand	2,310	35.10	486.24
	West Bengal	22,750	38.20	445.38
	Andaman & Nicobar Islands	10	4.10	.
	Chandigarh	20	34.70	.
	Dadra & Nagar Haveli	110	63.60	.
	Daman and Diu	.	2.60	.
	Delhi	110	15.60	541.39
	Lakshwadeep	.	0.40	.
	Puducherry	80	22.90	385.45
	All India	325,810	42.00	446.68

9.1.4 ANNEXURE 4: SAVINGS ROSTER

Table 9.3: Savings Roster

Type of Saving	Amount (Rs.)		
	2013	2014	2015
Cash at home			
Cash in bank			
Gold Jewelry			
Land			
Livestock			
Credit from local shops			
Money held with relatives and friends			

9.1.5 ANNEXURE 5: LOAN REPORTING PRACTICES QUESTIONS

1. While applying for MFI loans, do you report your existing loans to the loan officers?
    a. Yes
    b. No
2. If no, why not?
    a. Fear of being refused more loans
    b. Fear of being charged high interest rate
    c. Fear of cancelling existing loan
    d. Fear of being refused a top-up if requested, on the existing loan
    e. Don't know
    f. Refuse to answer

9.1.6 ANNEXURE 6: LOAN USAGE PATTERN

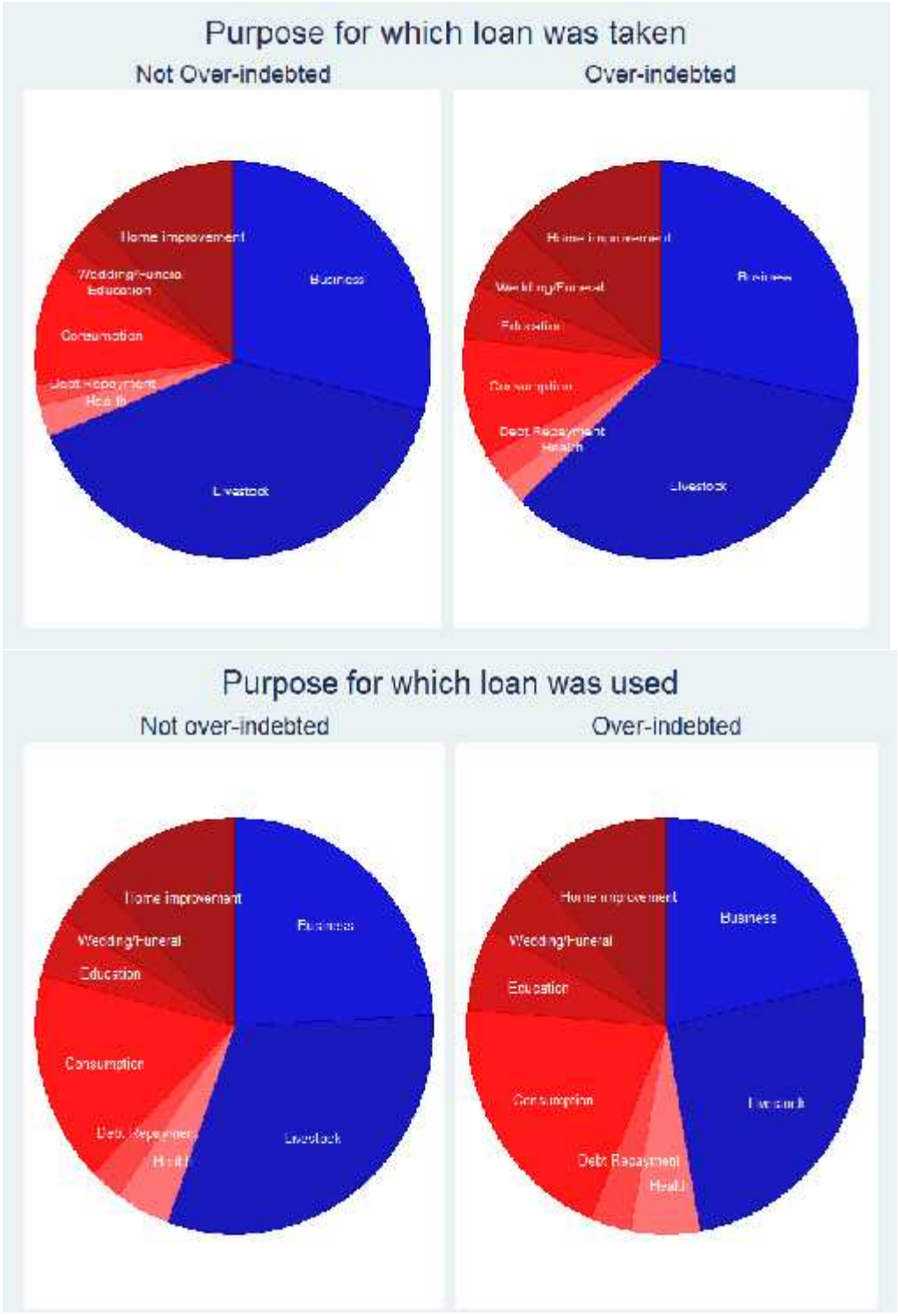

Figure 9.2: Stated Purpose of Loans versus Actual Usage

Table 9.4: Loan Use Pattern by Over-indebtedness

Loan Use[50]	Proportion of borrowers who used at least one loan for the purpose listed on the left (by over-indebtedness)	
	Not OID	OID
Business	28.8%	34.3%
Livestock	37.3%	41.7%
Health	5.3%	8.9%
Education	5.7%	10.3%
Events	4.6%	9.3%
Home improvement	14.9%	18.6%
Household Consumption	19.4%	32.2%
Debt Repayment	3.2%	5.4%

50 Note: We allowed respondents to provide multiple responses for the purpose for which they used their loan. This was done because the use of most loans is not limited to one purpose in these households.

9.1.7 ANNEXURE 7: EFFECT OF TAKING LOANS FOR UNPRODUCTIVE PURPOSES

Table 9.5: Logistic Regression Results - Effect of taking loans for unproductive purposes

Predictor variables	Over-indebted
At least one loan taken for consumption purpose	0.452***
	(3.79)
At least one loan designated for a productive purpose shifted to consumption expenditure	0.461**
	(3.13)
_cons	-1.422***
	(-18.22)
N	1955
Pseudo R^2	0.0198

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

9.1.8 ANNEXURE 8: COMPARISON OF DRIVERS OF DIFFERENT INDEBTEDNESS THRESHOLDS

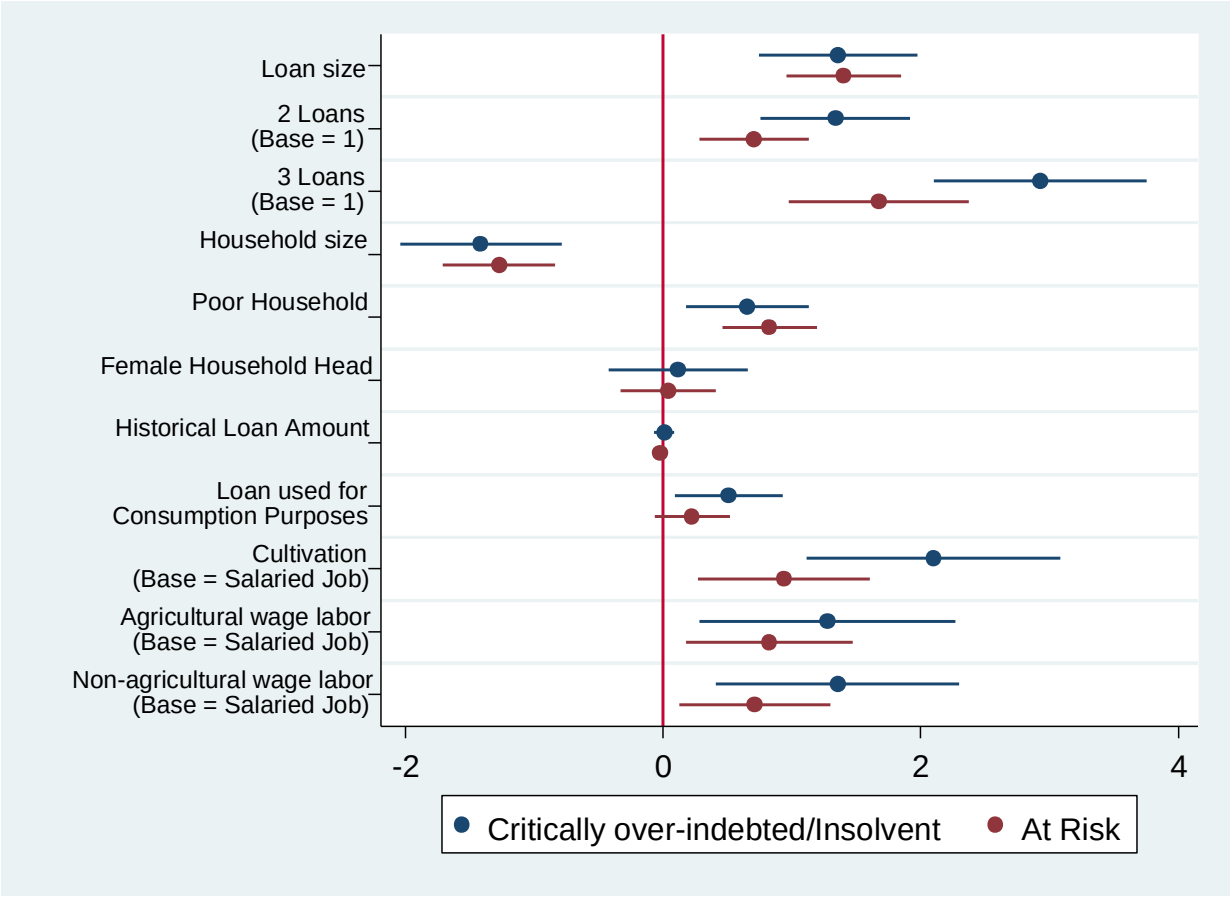

Figure 9.14: Multivariate coefficient plot showing the size of effect of OID drivers on the likelihood of being at risk of over-indebtedness or worse

9.1.9 ANNEXURE 9: LOAN USE PATTERN ACROSS OCCUPATIONS

Table 9.6: Loan Use Pattern by Occupation

Primary Source of Income	Freq.	Proportion of borrowers who invested at least one loan in business	Proportion of borrowers who invested at least one loan in livestock	Proportion of borrowers who used at least one loan for consumption purposes
Cultivation	251	52.2%	34.3%	37.1%
Agricultural Wage Labor	268	20.4%	32.7%	60.6%
Non-agricultural wage labor	950	21%	46.8%	47.2%
Artisan/Independent Work	96	44.8%	28.1%	41.7%
Trade	190	66.8%	19.5%	20%
Salaried Employee	174	14.9%	32.8%	63.8%

9.1.10 ANNEXURE 10: INCOME DRAWN FROM VARIOUS SOURCES

Table 9.7: Sources of Income by Over-indebtedness

	Not OID		OID	
	Mean Value of income drawn from source	Average % of income drawn from source	Mean Value of income drawn from source	Average % of income drawn from source
Agriculture	12,230	22.5%	9,050	24.4%
Livestock	6,010	16.4%	4,710	16.5%
Other Business	9,840	16.3%	7,070	14.6%
Pension	390	5.3%	360	2.7%
Government Grant	260	2.7%	580	2.8%
Remittance	1,580	3.8%	1,090	2.8%
Other	24,920	38.7%	17,300	42.9%