Institute for Financial Management and Research

Centre for Micro Finance

Working Paper

September 2007

Competition and Multiple Borrowing in the Indian Microfinance Sector

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Acknowledgments

Thanks are due to Matthew Eblen, Intern, Centre for Microfinance (CMF) (meblen@ucsd.edu) for outstanding research assistance. I gratefully acknowledge the support from Douglas Johnson, CMF, (doug@ifmr.ac.in) for invaluable guidance and supervision of this study, and from Aparna Dasika, CMF (aparnad@ifmr.ac.in). CMF is grateful to ICICI Bank staff for providing the data and support that made this study possible.

The following practitioners and experts are gratefully acknowledged for sharing their views: Vijay Mahajan, Basix, R. Sowmithri, Sarvodaya Nano Finance Ltd, K. C. Mallick, BISWA, Anup Kumar Singh, Sonata, Sanjay Sinha, M-Cril, Resmi, Sa-dhan, Chandrasekar Ghosh, Bandhan, S. Kathiresan, KAS Foundation, Ajay Tankha, K. V. Rao, SKS, Brijmohan, C. S. Reddy, APMAS, Suresh K. Krishna, Vinatha Reddy, Grameen Koota, Chetna Singh, Mann Desh Mahila Sahkari Bank Ltd, R. Shelin Mary, Mahalir, Nabard Officials, P. Y. Singh, Community Development Society, H. C. Hassain, SMSS, V. Prabhudas, CreSA, Prabhu Ghate.

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Abstract: The Indian MFI sector has witnessed rapid growth in recent years leading to a sharp change in the competitive landscape. Competition has brought with it a number of positives, but it has led to concerns about unethical competitive practices, reckless lending by fast growing MFIs without suitable assessment of clients' credit absorption capacities and multiple memberships leading to over-indebtedness and defaults. In this analysis, the extent of multiple borrowing between MFI clients in a competitive state in India has been estimated. Multiple borrowers have been found to have equal or better repayment records than their single borrowing peers in the same villages. Repayment performance does not worsen in more competitive locations for most of the MFIs, suggesting good risk management, screening and monitoring by those MFIs. There is some evidence of collective behaviour in multiple borrowing. While these findings dilute the need for the formation of a credit bureau, such a bureau could be still be required as part of the sector's evolution in India and provide a sound analytical framework to introduce customized products in terms of features, rates and loan sizes and to better understand the key drivers of borrowers.

Section I - Introduction

In the past few years, Indian microfinance has seen unprecedented growth -- during 2005, leading Indian MFIs increased number of active borrowers by about 110%, from 3,288,000 to 6,798,000, (Sa-Dhan 2006) one of the fastest growth rates in the world. Loans outstanding almost doubled from Rs. 1095.1 to Rs. 2070.2 crore during 2006. In fact, five Indian MFIs ranked in the top twenty fastest growing MFIs in 2005 (Microfinance Information Exchange Report, 2006). This trend is reinforced by and further accelerates commercialization of the industry, which is in turn characterized by increased competition among MFIs for clients and a goal to seek profitability. A majority of the top twenty-five MFIs in the country consist of firms that are profit-oriented Non-Banking Financial Company (NBFC)-MFIs or those planning to become one.

Despite this growth, there is considerable unmet demand in India. According to World Bank (2006), only 9% of poor families in India have access to microfinance and of the projected credit requirement of USD 10909 million, only USD 1050 million is met by microfinance. Although demand is widespread, the geographic distribution of MFIs is not uniform. MFIs are clustered primarily in South India, with two-thirds of all MF clients being in Andhra Pradesh (AP), Tamil Nadu (TN) and Karnataka. Fast growing MFIs tend to expand to areas where there is already an incumbent. The reason for this strategy is to leverage training and screening of client by the incumbent MFI and general awareness of microfinance in the area. MFIs in India, by and large, do not distinguish themselves by geographic areas or by offering differentiating products to different client segments. The above trends have lead to competition for the same clients in many parts of the country including AP, Karnataka, Madhya Pradesh, West Bengal, Uttar Pradesh, Orissa, TN and Chattisgarh.

Competition has had beneficial effects on clients world-wide. MFIs improve their product lines to meet clients' demands; prices become lower; the quality of services provided improves; and overall, MFIs become more client-driven. In terms of governance, MFIs become more efficient and conscious of risk management. Interest rates are often made more transparent. Better governance complements commercialization of the MFIs. Banks and other private investors feel more comfortable investing in MFIs that have good governance. As a result, such MFIs enjoy continuous inflow of funds that makes further outreach of clients possible. Indian MFIs lead the way in access to commercial funds with a commercial funding ratio of about 75% (Microfinance Information Exchange Report, 2006).

On the other hand, there are negative aspects of competition as well. There are sector-wide concerns about unethical staff and client poaching, violation of the ‘code of conduct’ and reckless lending by fast growing MFIs leading to multiple borrowing. Furthermore, recent trends in commercialization have given rise to the apprehension that the social objectives of microfinance – to provide a means for poor to improve their livelihood through financial inclusion – is diluted by targeting richer clients to increase profits, the so-called ‘mission drift.’

This paper focuses on multiple borrowing – which is of critical importance to MFIs and the industry as a whole because it is an issue that inevitably arises in the evolution of microfinance in a country. There are many similarities between India and other more competitive and evolved MF sectors in the world. While intense competition and multiple borrowing are perceived to cause significant deterioration in repayment and dropouts in the sector in India and throughout the world, this stance is not consistently supported by rigorous evaluations (of which there exist only a few in the literature) using large datasets which suggest that the effects of competition and multiple borrowing are not as deleterious. Due to unavailability of primary data, the extent of multiple borrowing in India has been estimated through surveys which are constrained by small sample sizes and the dependence on self-reporting by the respondent.

This study seeks to address this lacuna in the literature by analyzing a new data set of over 500,000 client loan and repayment records from seven MFIs in one of the states in India[1] that is home to a highly competitive MF sector. The extent and effects of multiple borrowing and competition on repayment are quantified. This is supplemented by

[1] The name of the state is not mentioned to maintain anonymity

interviews with selected clients with multiple memberships who have been identified from the dataset in a qualitative mini-study, in order to understand the clients' key drivers. The study draws from qualitative interviews with leading sector experts and practitioners on the issues of competition and commercialization.

The paper is organized as follows. Section II presents a review of the theory, incidences and empirical studies on competition and multiple borrowing in microfinance in the most competitive regions in the world. Section III discusses the results of interviews with twenty sector experts and senior management of MFIs on the subject. Section IV describes the dataset and source. Section V presents the results of analysis of client loan repayment records from seven MFIs in a competitive region in India. Section VI summarizes interviews with selected clients who have been identified as multiple borrowers. Section VII provides a concluding discussion.

Section II – Review of the Literature on Competition and Multiple Borrowing

This section presents a review of the theoretical literature, empirical studies, and salient issues of multiple borrowing and competition faced by MFIs and their clients in the most competitive markets across the world and in India. To provide a magnified view of competition and its effects, we choose three countries that are acknowledged to be the most competitive markets in the world, Bolivia, Bangladesh, and Uganda. Chaudhury and Matin, as cited in Vogelgesang (2003), report estimates of market coverage between 43% and 59% in Bangladesh while Rhyne, as cited in Vogelgesang (2003) indicates that between 25% and 33% of all micro-enterprises in Bolivia obtained microfinance loans.

There is a paucity of rigorous studies on the subject. While anecdotal reports from the field carry grave concerns about repayment deterioration, dropouts and over-indebtedness of clients in the face of competition and multiple borrowing, rigorous studies of large datasets paint a slightly contrasting and more encouraging picture.

This section is organized as follows. Section 2.1 discusses the patterns of competition. Section 2.2 discusses the theories of multiple borrowing, competition and information sharing, incidences of multiple borrowing, and empirical studies. Section 2.3 provides a summary of studies in India. Section 2.4 concludes.

2.1 Patterns of Competition

Carlton et al (2001), McIntosh, de Janvry and Sadoulet (2003), Charitonenko, Campion and Fernando (2004), Wright and Rippey (2003) and Lanuza (2004) discuss the patterns of competition which are summarized below. In the pre-competition days, MFIs would stake out regional monopolies. Competition has lead to the establishment of multiple MFIs in the most viable regions of the country. They tend to use incumbents' presence as an indicator of viability rather than be dissuaded by competition and seek untested markets. It appears that competition is most head-on in urban areas in the countries being studied. There is no indication of formation of territories which could perhaps emerge after further consolidation occurs. In fact, new entrants decide branch location based on existence of incumbents. There is no evidence of MFIs expanding to harder to reach rural areas due to competition. Verticalization of the sector though underway has not emerged as a trend.

2.2 Multiple Borrowing, Client Over-indebtedness and Defaults

There could be many motivations for multiple borrowing. A single MFI might not meet all of the client's credit needs. Even if it does, she might join multiple MFIs because interest rates might be lower in the second MFI, loan products might not be structured appropriately for the needs of specific client businesses or different MFIs might offer different products that the client needs, or so that she has a second option in case of default to the first MFI.

As regards the usage of the loan, an individual MFI's loan might be too small for a higher level of project investment and hence the client might need multiple loans from different MFIs to stitch together a larger loan size. A mid-term supplemental loan could be used to augment capital, especially for traders. These could be called opportunity-borrowing. Distress-borrowing would include borrowing due to an emergency, or to repay another loan. Alternate reasons could be that she is borrowing for consumption or simply reducing cost of borrowing by shifting away from more expensive sources of credit such as moneylenders.

McIntosh, de Janvry and Sadoulet (2003) provide a summary of the impact of multiple loans which is widely recognized as a problem for MFI lenders in Uganda. In interviews with credit officers from several major MFIs, the reasons attributed to borrowers for double-dipping were to smooth the timing of repayment of loans and to maintain cash flow. Morduch and Rutherford (2003) suggest that important considerations for clients in India are continuity, convenience, flexibility and reliability of products and services. It could be the case that some clients choose multiple memberships for the option value of having a reliable permanent source of credit, especially if they have severed relationship with moneylenders.

Whatever the reasons for multiple borrowing may be, the point of interest here is whether the client is able to absorb the extra credit and manage to repay to the MFI, without reducing consumption. In the best scenario, she uses the extra credit to improve her living standards.

2.2.1 Overview of the Theory of Multiple Borrowing and Competition

Micro credit typically replaces informal sources of lending such as money lenders. MFIs start with a smaller loan size and based on repayment performance, the client builds a credit history with the MFI and gets access to larger loan sizes in subsequent cycles. Drawing a parallel to money lenders practices (Aleem 1990), in the absence of collateral, MFIs develop repeated relationships with the borrowers and prefer that existing borrowers do not contract new loans with other lenders. There are 2 primary considerations that face micro finance clients' repayment behaviour: threat of no further loans in case of default and peer monitoring and entailing social sanctions. If a lender is a monopolist, threat of no further loans from that lender provides an incentive to repay. When competition brings in other uncollateralized lenders in the same area, the incumbent's ability to use dynamic incentives is weakened (Hoff and Stiglitz 1998).

2.2.2 Theories of Competition and Information sharing

There are a number of theories in the literature on multiple memberships and its effects under different degrees of information sharing (without a formal credit information system) among lenders on their clients' membership details and repayment history, when there is increased competition for the same set of clients.

A competitive lending environment with no information-sharing between lenders on defaults by clients, leads to an externality due to high 'enforcement costs' of monitoring by loan officers, and loss of dynamic incentives to repay which predicts a fall in repayment and an increase in dropout from the incumbent lender as competition rises. In the event of perfect information between institutions, the above concerns do not hold and expected future access to credit will incentivise borrowers to repay uncollateralized loans. This could lead to increased dropouts from the incumbent in favour of better outside options, but in order to improve their credit history, which is visible to all lenders, there would be an improvement in repayment as number of lenders increase (Hoff and Stiglitz1998).

In the case of information asymmetry as regards the clients' total amount of loans taken, lenders cannot gauge risk accurately. In this case, only dynamic incentives to repay to incumbent are at play. Impatient borrowers will take advantage of this; they might not drop out but rather take multiple loans, and so repayment performance will fall although dropout may not rise. The outcome depends on the amount of information about indebtedness that is visible to lenders (McIntosh and Wydick 2002).

Regardless of information sharing, if competition leads to financial deepening, leading to complementarities and increasing returns to scale of investments, if this increased supply of credit leads to an beneficial overall improvement of the economy, then repayment will improve and dropout will not change as all clients face better smoothed, more remunerative business opportunities (Greenwood and Jovanovich (1990), King and Levine (1993), Pagano (1993) cited in McIntosh, de Janvry and Sadoulet 2003).

Table 2.1 summarizes the prediction of the 4 theories described.

Table 2.1- Summary of theories

Degree of information sharing between MFIs	Predicted impact of increasing competition on	
	Repayment	Dropout
No information sharing on defaults	Worsens	Increases
Perfect information sharing	Improves	Increases
No information sharing on total indebtedness	Worsens	Unchanged
With or without Information sharing	Improves	Unchanged

McIntosh, de Janvry and Sadoulet (2003)

2.2.3 Anecdotal reports of Multiple Borrowing in Competitive Markets

Armendariz de Aghion and Morduch (2005) report on the effects of rapid competition leading to multiple borrowing and defaults. There was a crisis in the late 1990s in Bolivia due to multiple borrowing which was further exacerbated by an economic recession.

Acceso FFP, a large Chilean finance company and an aggressive provider of consumer credit entered the Bolivian market and in 3 years had 90000 loans outstanding -- more than BancoSol the incumbent MFI had in the preceding 12 years. BancoSol lost 11% of its clients and arrears rates of regulated micro lenders increased from 2.4% in 1997 to 8.4% in mid-1999. This has been attributed to multiple borrowing. Rhyne and Otero (2006) reports that in Bolivia,

> "The momentum of lending growth that propelled both the microfinance institutions and consumer lenders created a bidding war, with competitors vying for clients by offering larger loans, faster service, and lower interest rates. This momentum inflated the total amount of debt on the informal streets of the country. Once the economy stalled, it quickly became evident that thousands of clients held more debt than their reduced level of economic activities would allow them to service. Over indebtedness was rampant, particularly common among the high proportion of clients who had borrowed from multiple microlenders at the same time."

Armendariz de Aghion and Morduch (2005) provide further reports from Bangladesh, which witnessed rapid growth in the late 1990s largely lead by Grameen Bank, ASA, BRAC and Proshika. There was overlapping of MFIs in 95% of the eighty villages surveyed by Matin and Chaudhury (2001), as cited in Vogelgesang (2003). It was estimated that 15% of all borrowers took loans from more than one MFI. This, along with the delivery of more credit that clients could absorb, led to a repayment crisis. Grameen Bank's repayment rates dropped from 98% to 90% with highest impact on the highly competitive areas such as the Tangail district.

Bolivia started formation of credit information systems to facilitate sharing of data on client history and indebtedness among MFIs to prevent multiple borrowings. Charitonenko, Campion and Fernando (2004) find that some MFIs in Bangladesh have been experiencing a decline in their loan recovery rates as well as rising client desertion with increased competition. As regards drop-outs, the clients appear to show little loyalty to the MFI when it does not fully meet their demands and when there are better alternatives available with low switching costs.

Countering the above is Burki and Shah (2007). The authors report that interviews with loan officers in Lahore suggest an estimated multiple borrowing rate of 20 – 40% while interviews with clients place the figure at 50 – 75% in high concentration areas. The study is an exploratory one. It finds that the borrowers seem to be aware of their repayment capacities and did not find evidence to suggest that the borrowers were using multiple loans for non-productive purposes.

2.2.4 Empirical Studies of Impact of Competition and Multiple Borrowing

McIntosh, de Janvry and Sadoulet (2003) did a large study analyzing the impact of competition on FINCA, the largest MFI in Uganda by their rapidly rising competitors and report that there were no dramatic negative consequences of competition. The findings are as follows. There was no significant change in the dropout rate or the client enrollment rate or loan volumes of the incumbent, FINCA, when competitors of any kind entered the market. The authors find some deterioration in repayment performance of FINCA clients. These results suggest that clients do not abandon the incumbent but rather take multiple loans, thus adversely affecting repayment to the incumbent. There was a significant drop in savings. Mandatory savings and minimum savings balances are standard among MFIs. So, multiple borrowers are forced to share their savings amongst the MFIs, reducing their level of savings with the incumbent. Overall default rates increased. Informal knowledge sharing of double dipping exists but not enough to reduce its occurrence by much. The authors conclude that even without formal information sharing of total level of client indebtedness, the data does not support the strong theoretical predictions of the consequences of rising competition. They do recommend that sharing information about clients among MFIs would enable better risk assessment mechanisms and overcome the problems of repayment suffering due to multiple borrowing.

Vogelgesang (2003) studies various aspects of repayment behaviour for loans from Caja Los Andes, and MFI in Bolivia around the time of a repayment crisis. The analysis focused on the years, 1996 to 2000, which were characterized by rapidly increasing competition and supply of credit in the microfinance market, high levels of indebtedness, and the beginning of an economic crisis in Bolivia. The author finds that the fraction of clients taking loans from multiple institutions increased substantially (from 13% in 1996 to 24% in 2000 for new clients). The arrears rate increased from 0.5% in 1995 to 7.3% in mid-2000. This overall effect is attributed to increased supply of loans, multiple borrowing and over-indebtedness, further exaggerated by the economic crisis in 1998. From 1999 the MFI enforced stronger 'on-time repayment' practices. This enforcement had an effect of higher probability of punctual payment and lower probability of high arrears.

On the other hand, the author further finds that high competition and supply, by themselves, are not responsible for high arrears. The analysis of payments shows that controlling for her personal characteristics, a client displays better repayment behaviour in a branch with high competition and high supply of micro-loans than elsewhere. Reasons cited are that the clients might be more aware of the importance of timely repayment in an environment with multiple suppliers or institutions could have developed higher repayment incentives and/or more clients screening when there are more competitors.

2.3 Competition and Multiple Borrowing in India

The Andhra Pradesh crisis in 2006 provides a window into the effects of competition by MFIs on the state-run Self Help Group (SHG) movement. It is acknowledged that a combination of multiple memberships, repayment difficulties of clients, strong collection practices of MFIs and clashes with the state-run Velugu SHG programme led to both a crisis of repayment and government clamp down on the MFIs leading to large scale defaults by MFI clients.

According to Ghate (2007), 92% of poor households in Andhra Pradesh had been covered by March 2005 by the state SHG programme (Velugu), with plans to reach 100% by

2005 end. Surveys by APMAS found that in Guntur, dual membership was as high as 67%, and that 32% of the respondents had multiple memberships with Velugu, Spandana and SHARE in 2005. In 2006, the Krishna survey found that multiple memberships in the three had increased to 82%. Despite the presence in the area, of two large fast expanding MFIs, new local MFIs were starting up.

Interestingly, during the proliferation of MFIs, 18% of clients had borrowed from money lenders to repay MFI loans, although the average loan size of Spandana clients had dropped in 2006. Hence depth of outreach has not suffered in AP. Abusive collection practices have also been adopted in AP. M-CRIL's social ratings tool to measure social performance defined as 'the effective translation of mission into practice, in line with acceptable social values' will help address social mission drift concerns.

Despite the better services of MFIs over SHGs, such as timeliness and size of loans, there was little switching of clients from SHGs to MFIs. This is because SHG membership comes with access to development programmes and services, suggesting that sticking to the social mission goals confers client loyalty benefits. There was little evidence of client poaching from the survey in Krishna district since the model makes it difficult to switch institutions. Preference for individual loans was cited in the survey as the biggest reason for SHG clients to join MFIs, while weekly repayments was the most common problem with borrowing from MFIs.

Shylendra (2006) in the analysis of the AP crisis finds that poaching of clients is common in areas of excessive competition without coordination between the MFIs. Further, despite the increased participation of commercial banks, SHG-bank linkage programmes have reached only a fraction of the target population's demand for credit.

Sa-Dhan (2006), presents a survey of 1080 MFI and SHG clients in AP. The reported incidence of multiple borrowing from other SHGs and MFIs was low at 3 to 5%. Of these multiple borrowers, over 70% of the respondents used additional loans to meet the credit gap in their present requirements and not for new purposes, 25% because of easy availability, while the remainder was for paying old loans and because a second loan was not available from the incumbent. Over 75% of multiple borrowers did not feel that additional borrowings had affected their repayment or productive capacity.

Section III – Competition in India: Insiders' Views

Overall, there is competition between MFIs, SHPIs, state SHG programmes, banks, cooperatives and money lenders. They are competing for clients, staff, funds, and reputation. This section addresses issues of the MFIs and SHPIs.

Presented below is a summary of interviews with 20 sector experts and heads of NGO-MFIs, NBFCs and SHPIs of a wide range of sizes. Areas of operations reported include Maharashtra, Karnataka, AP, Orissa, WB, MP, Southern TN, Chattisgarh and UP. The interviews focused a broad range of topics related to competition and multiple borrowing including client poaching, agreements between competing MFIs, expansion strategies, the prevalence of multiple borrowing and whether it is due to distress borrowing, and whether a credit bureau is needed. Most of the MFIs interviewed are feeling the pressures of competition in different ways. More than half of the respondents are concerned about the adverse effect of competition on their operations and on the sector.

The MFIs report that competition has intensified within the past 6 to15 months. As regards competitive strategy, the MFIs interviewed and the ones they referred to as competitors can be loosely classified into 2 groups: slower growth/ more localized and fast growth /larger geographical coverage MFIs. The perceptions about these MFIs tend to vary according to the growth of these competing MFIs. These 2 categories will henceforth be referred to as Group A and Group B respectively. The number of competitors reported by the MFIs ranged from 2 to 5 per branch location.

3.1 Nature of Competition

3.1.1 Client Poaching

A common concern raised by MFIs pertains to the trend of competitors with aggressive growth plans opening branches where an incumbent already exists and actively poaching their clients. This is done to take advantage of both the locally familiarity with MFI rules and the incumbents' client screening and training, as well as to gain access to the clients' passbooks and hence credit histories. The clients are reportedly recruited by offering higher loan sizes faster, leading to multiple borrowing which could lead to defaults.

Incidences of dropouts have not been cited as a concern by the MFIs. Poaching is viewed negatively by all incumbent MFIs and is a source of frustration. They feel a sense of lack of control over the client, and the incentive mechanism of an MFI to deny new loans permanently to a client in case of default is lost since she has another option now.

3.1.2 Agreements

All MFIs reported keeping informal tabs on competitors operating in their branch locations, on their practices and products offered. None of the MFIs had made formal, legally binding agreements to avoid client poaching. Six Group A MFIs reported having informal agreements. Sonata had an agreement with its competitor with the following terms: adherence to the Sa-Dhan 'code of conduct'[2], agreeing to operate in different areas, sharing of client names, meet and network with other MFIs regularly to build a congenial relationship, work together to present a common front to the government, and to avoid a recurrence of the AP crisis.

Informal agreements, however, do not appear to be working effectively in practice. It seems the case that not all the competing MFIs in an area are equally interested in following agreements. The smaller and Group A MFIs want the agreements more than Group B and fast growing ones and do not believe that the other MFIs follow through with the agreements. One small SHPI implements informal unilateral procedures to prevent multiple memberships through careful monitoring and informal networking with peers. This involves close monitoring of the clients, constant interaction with the villagers, and writing to competing MFIs repeatedly to wait until the client completes her loan before enrolling them. This approach works best in small organizations with a smaller client base and is not a scalable solution for larger MFIs.

[2] The code of conduct (quoted from Ghate 2007) emphasizes the following: (i) to avoid over-financing of the same household by different MFIs. (ii) make interest rates more transparent (iii) ensure that staff do not use abusive language or intimidatory tactics while collecting repayments (iv) ensure high standards of corporate governance by including eminent independent board members (v) stay in touch with government authorities, banks and media on a regular basis

None of the MFIs feels that the 'voluntary code of conduct' is being followed in spirit or in letter as regards poaching or talking ill of competing MFIs. The latter has been reported by three of the MFIs.

3.1.3 Expansion Plans in a Competitive Environment

Expansion strategies of MFIs is similar to that of banks which tend to open new branches more in banked areas, i.e., growth of financial development is higher in areas with higher initial financial development when left to competitive forces (Burgess and Pande 2005). New branch locations tend to be closer to an urban branch. The marginal cost of opening a remote branch is higher than that of catering to a village near a branch in a town. Many Group A MFIs prefer untapped markets and some have started to move to more remote rural areas for this reason, a move partly driven by competition.

There are no attempts by the MFIs interviewed to differentiate themselves vertically by market segment. Differentiating products by KAS and Basix have not been replicated by their competitors operating in the same areas. In fact, Basix does not face competition for the same client segment due to this differentiation.

3.2 Multiple Borrowing

The concerns about multiple borrowing appear to be based on strong operational-level experience and not on data-driven evidence. Five MFIs have conducted surveys to estimate the percentage of multiple borrowing. While the responses are sure to be understated (since clients are known to under-report multiple membership), the figures have ranged from close to 1% to 40%. The other MFIs made a broad estimate, based on experience, of multiple borrowing in some branches at between 15 and 20%.

The sector feels that Group B MFIs offer larger loans to existing MFI clients leveraging her past repayment history with the incumbent, but are lax with their screening procedures and assessment of the clients' ability to repay in their haste for fast growth. The incumbent MFI cannot make an educated assessment of the clients' ability to repay if it does not know which other sources the client is borrowing from. No MFI has categorically stated that multiple borrowing has led to worsening repayment rates and dropouts already, but they are clear that it is only a matter of time. The AP crisis has revealed that MFI clients have a tendency to default to lower interest smaller loans from state run SHG programmes (with less strict repayment enforcement) and instead repay MFIs from whom they have borrowed. This behaviour could extend to defaulting to the incumbent MFI.

Despite asking clients at the time of enrolment whether they have an outstanding loan at the time of joining, the MFIs are not able to prevent multiple membership.

At the surface, the existence of multiple borrowing suggests that clients need larger loan sizes than what the MFIs are comfortable with lending. But half of the practitioners interviewed feel that clients cannot handle extra credit wisely whereas the other half believes while extra credit will benefit a majority of the clients, a few will end up in repayment problems. Total credit of Rs. 25,000 or more (or more than 30% of annual income) is viewed as a rule-of-thumb threshold beyond which repayment problems could occur. These might be due to financial indiscipline, lack of planning ability, and because they are more vulnerable to income shocks. This has been the case with some Tsunami victims in Kanyakumari and traders who have been forced to close shop due to road widening in Jagannath. There is also a concern from experts that reckless multiple borrowing will lead to large scale defaults and bring disrepute to the sector. The group nature of the lending model further lends itself to en masse defaults. Aggressive lending by the sector might give an impression to the clients that repayment can be avoided without penalty (like with government loans).

It is clear that the sector does have a slightly paternalistic view of its clients as regards their financial management capabilities. While it is not clear what the socially optimal arrears rate is, no one MFI would want to bear the brunt of it.

3.2.1 Distress versus Opportunity-driven Multiple Borrowing

All MFIs would like a practical way to discern between distress and opportunity driven borrowing, but it is not clear how such a way may be devised. There is a case for an optimal amount of joint monitoring of multiple borrowers by the MFIs or for some form of partnership. Both MFIs might be better off by reducing their loans outstanding by letting the other MFI share some of the risk by offering a complementing loan and monitoring could be shared to improve repayment. This calls for a partnership and the investigation into an optimal amount of joint monitoring that reduces costs to both parties.

3.3 Credit Bureau and Credit Scoring

Competition for clients leading to multiple memberships has not been reported to adversely affect the profitability, growth or portfolio at risk of most of the MFIs, though many anticipate this in future.

Almost the entire sector supports the formation of a credit bureau, so that MFIs can view past repayment performance and multiple membership history of the client, primarily in order to prevent multiple borrowing and secondly to better assess credit absorption capacity. There is however, no consensus on who should take a lead role in this. Most prefer that this initiative be undertaken by the MFIs themselves, while some of them see a role for the regulator or their funding agency to take the first step to setting up a credit bureau since it cannot be implemented unilaterally by one MFI and needs coordination with others. An established business model does not exist in India for the private sector to provide a bureau as a service.

The MFIs view this as a Herculean task involving high set-up costs which requires external funding. KAS is even willing take the leadership in implementing a bureau. The most common operational concerns cited are the lack of MIS /technology capabilities, connectivity with remote villages, the need for a unique client identification numbers and, of course, credibility of the bureau maintainer and confidentiality of client identities to prevent poaching. As regards client protection, client privacy might be invaded and the blacklisting of defaulters might go against the development objectives of microfinance.

Basix feels that technology costs are not sufficiently low and that credit bureaus and scoring techniques have not reached maturity in India. It is argued that for the next ten years, monitoring through staff and peers is a more effective and lower cost technique.

As regards credit scoring, all MFIs have proprietary methodologies to assess wealth and income levels of the client. Although most respondents felt it is a good idea for the future, there has been only a modest interest in implementing a more scientific credit scoring mechanism to better assess clients' repayment capacities. It is felt that the time and effort required does not support the use of formal scoring mechanisms at this point.

3.4 Future Research

The MFIs were asked what further research would be beneficial to the sector. Two important areas stand out -- estimating market demand, and risk management: Given the extent and nature of competition and the fact that expansion to more distant rural areas has not scaled up as much as in peri-urban areas, it would be valuable for MFIs to be equipped with improved market demand assessment techniques. This would open out the playing field, decrease cost and effort for MFIs to find out untapped markets for expansion, promote expansion to rural areas, reduce competition and assist in verticalization. If the MFIs are able to assess credit absorption capacity in a region, it would help them evaluate their portfolio better. MFIs could use advanced techniques for managing risks to repayment and cash flow management by political interference, macroeconomic shocks, or changes to livelihood patterns of clients.

Section IV - Data

This section describes the source and nature of the data, and selected characteristics of the MFIs and their clients.

4.1 Data

The panel dataset contains management information systems (MIS) data on clients funded by ICICI through the partnership model in seven MFIs operating in a competitive state in India. The partnership model is described in more detail below.

The MFIs are named MFI1 through MFI7 for anonymity. This client dataset represents a subset of all the clients of these MFIs in some of their branches. It is largely exhaustive in MFI7 (includes all of its loans disbursed that month in that branch). For the rest of the MFIs, the client dataset is a subset of each MFI's clients in that branch. Among these seven, MFI6 and MFI7 are the fastest growing MFIs (more than 150% growth rate). The sector experts interviewed, unanimously acknowledged that these MFIs favour opening new branches in a location with an incumbent MFI already operating. In this section the remaining 5 MFIs will be referred to as Group A, and the 2 fast growth ones will be referred to as Group B. MFIs 1, 2, 6 & 7 are large ones while MFIs 3, 4 and 5 are smaller ones in terms of active borrowers.

Each record contains basic client information, location, loan details and arrears information. It includes some recently completed as well as running loans. The panel data is available for between 2 and 4 months, depending on the MFI, starting September 2006. Another snapshot is available for March and April 2007. The monthly set of clients represents all of the MFI's clients who have received loans funded by the partnership model in that month. They could drop out of a panel snapshot if they have repaid the loan and take a fresh loan from another fund source. All clients with arrears are retained in the list for a minimum of 1 year but typically retained for a longer period of time. Table 4.1 indicates whether the MFI is fast growing (> 150%) or slower growth, i.e., Group B or Group A respectively and the age and legal status of the MFIs.

Table 4.1 – Basic Features of the MFIs

MFI	Group	Age of MFI	Legal status
I	II	III	IV
MFI1	A	>10yrs	NBFC
MFI2	A	>10yrs	NBFC
MFI3	A	>10yrs	NGO
MFI4	A	5-10yrs	NGO
MFI5	A	5-10yrs	NGO
MFI6	B	5-10yrs	NBFC
MFI7	B	5-10yrs	NBFC

Source: Columns III and IV sourced from Sa-Dhan (2007) and www.mix.market.org.

Table 4.2 below presents the basic characteristics of the data. Columns III and IV show the distinct villages or urban colonies for which client data is available. Column V represents the approximate percentage of our sample out of the total number of clients (partnership and non-partnership) of that MFI in the state.

Table 4.2

Basic Client details by MFI in sample data - Sept/Oct 2006				
MFI	# of clients	# of distinct villages	# of distinct urban colonies	Approx. % of sample in total no. of clients in the state
I	II	III	IV	V
MFI1	147152	1420	197	41.22%
MFI2	244396	2819	166	51.21
MFI3	5146	226	64	30.31
MFI4	41662	0	604	87.26%
MFI5	20869	142	0	NA
MFI6	38546	1195	287	22.04%
MFI7	77612	926	359	10.04%

Source: Column V computed from data provided by MFI and from Sa-Dhan (2007) and www.mix.market.org. It is calculated by dividing the number of partnership clients by approximate number of active clients of each MFI as on September 2006, (extrapolated from the March 2006 and March 2007 published figures)

4.2 The Partnership Model

In the partnership model, the MFI acts as an agent of the bank to source clients. The MFI carries out the process of client screening, recruitment, loan disbursal and collection. It requests funds from the bank based on projected loan disbursal. The bank provides the funds at close to prime lending rate. The MFI adds processing fees and service charge on to this rate, which is the interest rate that the client faces. Funds from the bank are utilized for loan disbursement to selected members of each MFI, who are legally clients of the bank. First loss default guarantee agreement applies -- the MFI is responsible for the first 10% defaults on the portfolio. The bank is responsible for the remainder. Know your customer (KYC) norms of the Reserve Bank of India, mandate that basic details of the end borrower such as the borrower's religion and father's name are recorded and that proof of identification which includes a photograph and address, commonly through a ration card or voting card, is verified for all borrowers lent to under the partnership model. Our data is from the MIS information sent to the bank every month.

The MFIs have two approaches to designate loans to clients funded by the partnership model. In Approach I, the MFI identifies and designates certain branches as partnership branches. All the clients in that branch are partnership clients whose data is available to us. Based on numerous interviews with MFI management, we find that the partnership branches are not selected based on any set of criteria, but are random for all intents and purposes. They are a combination of old and new branches. Often the funds are not returned to the bank immediately upon collection but used for subsequent disbursal in that branch. Figure 4.1 below explains the operational procedure of loan disbursement to clients.

Figure 4.1 - Approach I: Designated Branches

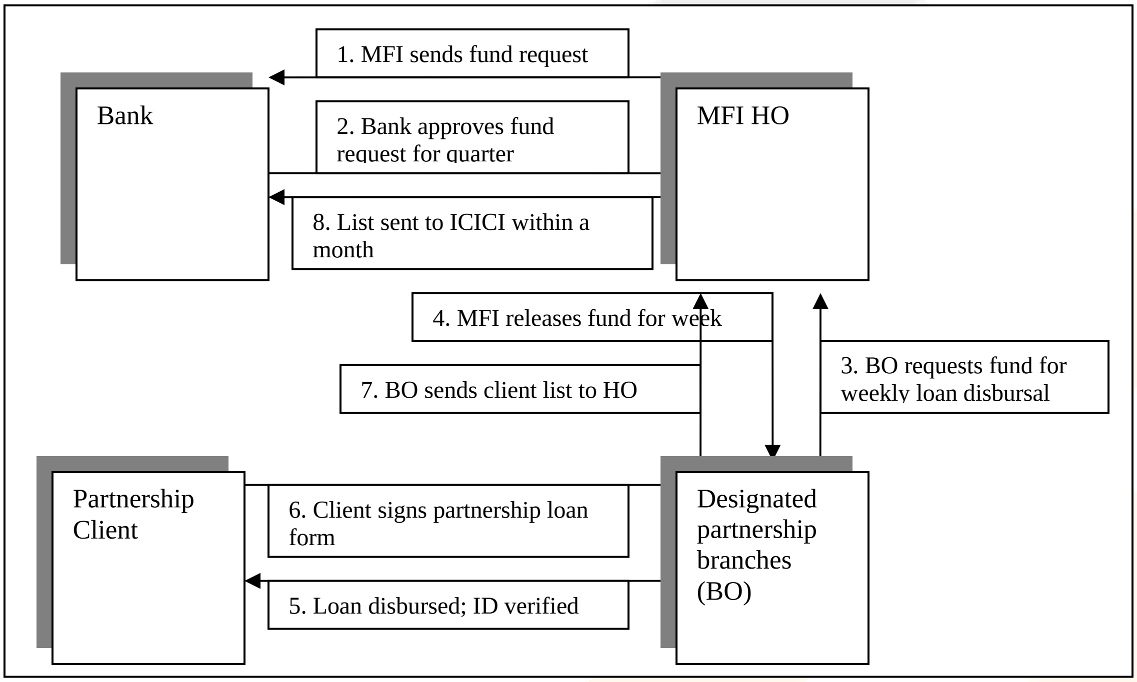
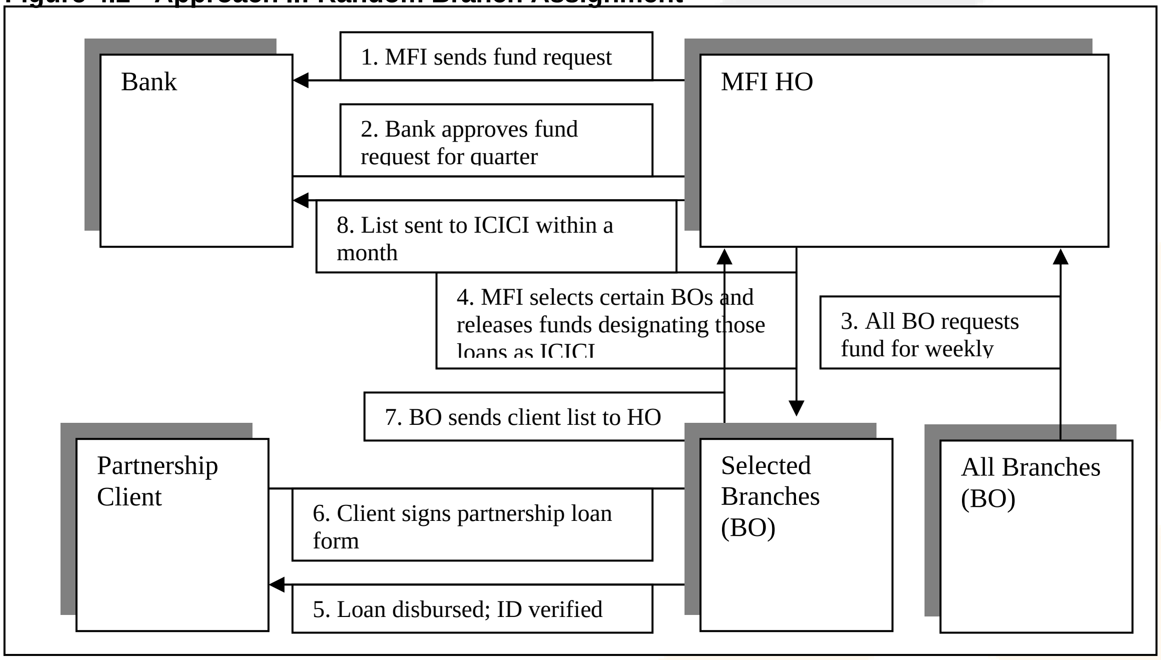


Figure 4.2 below describes Approach II. In this case, there are no designated branches. Assignment of bank funds to certain branches is done operationally the same way that all fund assignment is done – based on supply and timeliness of funds and amount demanded by the branches each week. Branches send in requests for loan disbursements funds each week. The head office allocates funds from all sources to all branch requests. For operational expediency they typically allocate one fund source, (e.g. partnership funds) to a branch's requests for that week instead of mixing funds from different sources.

Figure 4.2 - Approach II: Random Branch Assignment



4.3 Nature of the Data

Some possible sources of bias in the data are presented below along with justifications and explanations to allay the concerns.

Falsified names: Clients with multiple memberships falsify their names and hence the extent of multiple borrowing might be understated. This is mitigated by the fact that KYC requirements mandate more rigorous retro-active verification of identity. It should be noted that we are sampling a subset of clients who have chosen to disclose their correct names to the second MFI, a characteristic which might be correlated to better repayment.

Self-Selection: It is possible that clients who are high risk borrowers do not wish to provide proof of identity to the second MFI and hence choose not to borrow from a second MFI. This is mitigated by the fact that KYC requirements are enforced at the time of loan application and not at the time of membership application. As well, it is acknowledged that the norms were enforced retro-actively.

Name spelling bias: It is possible that we are selecting only those multiple borrowers that the algorithm found, suggesting a reasonably good spelling of the data and hence perhaps a better loan officer operating in that area. This could mean that that the extent of multiple borrowing is understated and that repayment enforcement is done better in these branches. Based on the quality of the matches of names that are differently spelled by two different MFIs, and comparisons of arrears rates of multiple borrowers and single borrowers in a single branch, we conclude that this is not a concern.

Partnership model clients are different from the rest: There could be systematic biases in the selection of partnership model clients and villages or MFIs could choose branches with better performance. We interviewed bank staff and MFI staff regarding operational differences in handling partnership clients. The choice of which clients to lend through the partnership model is made by the MFI's head office based on supply and timeliness of funds and demands from branches and does not appear to be subject to any systematic biases that we are aware of. Operationally, they are not treated any differently. To account for the possibility that better performing villages and clients are chosen for bank funding by the MFI, statistics between the single and multiple borrowers in that village are compared. At any rate, any better practices implemented in partnership funded loans, would certainly be replicated across the organization. The clients and sometimes the staff themselves are not aware of whether they are partnership clients or direct clients of the MFIs. This was verified by interviewing twenty of the multiple borrowers. None of the respondents were aware that they were partnership clients. The MFIs report no separate staff training.

4.4 Limitations and Assumptions

We do not have records of the MFIs' clients outside of the partnership model. All the seven MFIs are profitable ones. We do not know their total borrowings and repayment to other sources such SHGs, moneylenders and friends.

The key assumption is that this client and location list is an unbiased subset of all of these MFI's clients and branches and hence statistics of this sample are representative of all of its clients.

Section V - Analysis of Multiple Borrowing and Competition

This section presents analysis of the data of the characteristics of the multiple borrowers to answer the following questions.

- What is the extent of multiple borrowing in the state being studied?
- Do multiple borrowers have poorer repayment performance?
- How does repayment of clients in a competitive branch location compare to a less competitive one? How well are MFIs managing risk in the face of competition?
- What are some of the characteristics of multiple borrowings? Can we conclude whether they are opportunity-driven or distress-driven borrowers?
- Is taking multiple memberships a collective decision by members in a center?
- Are fast growing MFIs using larger loan size as a client attraction tool compared to incumbents?
- Is there any correlation between rapid rate of growth of an MFI and its repayment rate?

This section is organized as follows. Section 5.1 describes the name matching technique used to identify the extent of multiple memberships between the MFIs. Section 5.2 presents extent of multiple memberships in the sample and an estimate of its prevalence in the state. Section 5.3 analyses the repayment performance of multiple borrowers and other selected characteristics. Section 5.4 presents comparative analysis of loan sizes and arrears rate based on the extent of competition in the branch location. Section 5.5 provides other observations.

5.1 Name Matching Methodology

The first step of this analysis was to match client, village and colony names to identify overlapping MFI locations and the multiple memberships of clients. The following approach is used. A client is deemed a multiple borrower if her initial, name, husband's name and village all match between 2 MFIs' records. Multiple matches based on these parameters are discarded. Since spelling of the same names and villages could be different in different records, we use the Double Metaphone and the Soundex algorithms (Lait and Randell 1996) to check for phonetically similarly spelled names. Each algorithm generates a code for each name, which can be compared to the code of another name which is spelled differently but is pronounced the same. This algorithm is not perfect at identifying all genuine matches and hence we could be understating the number of multiple borrowers. It is estimated that about 70% of all the correct matches have been identified. All that the matches that have been identified have been verified as correct.

5.2 Extent of Multiple Borrowing

Table 5.1 shows the extent of multiple memberships that has been identified in this partnership client data. Column II shows the number of clients per MFI in those villages where there exists at least one multiple borrower. Column III shows the number of multiple borrowers among them. The overall percentage of multiple borrowers in this data set is 7.28%.This figure is calculated by dividing the number of multiple borrowers by the total set of distinct clients in all the MFIs in those villages in which at least one match has been found. This is a lower bound to the true extent of multiple borrowing as non-partnership client records are not included. Hence many multiple borrowers in this list might not be detected since they do not appear in the competing MFI's partnership-model records. Moreover, client records that do not have an initial or father's name were discarded.

An estimate of the overall prevalence of multiple borrowing in the state among all the clients, both partnership and non-partnership model, has been made. That figure is 10.28% (Appendix A).

Table 5.1

Multiple borrowers in Sept/Oct 2006			
MFI	**# of Multiple Borrowers**	**# of clients in overlapping villages**	**% of multiple borrowers**
I	**II**	**II**	**IV**
MFI1	1865	33840	5.51%
MFI2	2156	35451	6.08%
MFI3	215	2282	9.42%
MFI4	228	5745	3.97%
MFI5	446	7242	6.16%
MFI6	660	4719	13.99%

MFI7	2867	26554	10.80%
Total	8437	115833	7.28%

MFI6 and MFI7 have the highest multiple borrowing rates. This is consistent with the word in the field that Group B MFIs use good past client repayment performance with the incumbent MFI as a client screening mechanism and hence likely to have more multiple borrowers.

All analysis in the following sections is based on a subset of the multiple borrowers above that were identified using the Double Metaphone Algorithm only, since refining the algorithm for estimation of multiple borrowing is an ongoing task. As regards urban-rural demographics, Table 5.2 below shows the break up between matches in urban versus rural areas. Urban is defined to be any location name that contains the words Nagar, Colony etc, tell tale signs that the branch is operating in a larger area compared to the remainder that have only a village name. The only exceptions to this rule are a handful of the largest towns, taluk and district headquarters. A majority of the multiple borrowers identified are in rural areas.

Table 5.2

Urban/Rural Breakdown of Multiple Borrowers by MFI					
MFI	**Total**	**Urban**	**Rural**	**% Urban**	**% Rural**
MFI1	1550	205	1345	13.23	86.77
MFI2	1718	62	1656	3.61	96.39
MFI3	381	68	313	17.85	82.15
MFI4	199	199	0	100	0
MFI5	744	0	744	0	100
MFI6	676	62	614	9.17	90.83
MFI7	1885	104	1781	5.52	94.48
Total	3575	350	3225	9.79	90.21

5.2.1 Collective Behaviour in Multiple Borrowing

Table 5.3 shows some evidence of collective behaviour in multiple borrowing. The percentage of multiple borrowers of all the clients in a center where there exists at least 1 multiple borrower ranges from about 9% to 15.3% which is up to 2.5 to 4 times the average incidence in that MFI. Since number of multiple borrowers is under-estimated, the true figure is possible higher than this. Assuming an average of 50 members per center, implies at least 5 to 7 multiple borrowers per center, suggesting that multiple memberships might be known by a client's center peers and it might be a collective decision. This stance is supported by the qualitative interviews with selected multiple borrowers in Section VI which reveal incidences of en masse multiple borrowing in groups. This could mean that multiple borrowing is a pre-meditated move and hence more likely to be opportunity driven, but this is not clear. Collective behaviour has the potential to make some clients take up multiple memberships simply because some of their group members want to.

Table 5.3

% of Multiple Borrowers per Center (2006-07)						
MFI	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**
MFI1	8.92%	8.85%		8.95%		
MFI2	9.32%			9.47%		
MFI3	14.24%		14.24%	14.50%	14.29%	
MFI4		13.10%	13.01%			
MFI5		11.25%	11.31%		8.59%	8.27%
MFI6		13.99%	13.94%	13.94%	13.92%	
MFI7		12.20%	15.31%			

5.2 Repayment Performance

Table 5.4 shows the arrears rates for different groups of clients. A client is considered to have arrears if she owes any money regardless of age of over dues, i.e., overdues within the past 30 days, 30 - 60 days, 60 - 90 days or 90 - 180 days. Column IIA & IIB list the arrears rates and number of clients in the entire sample. Columns IIIA & IIIB list the arrears rates and number of clients in villages and colonies where there exists at least one multiple borrower (called overlapping areas). Column IV-A lists the number of multiple borrowers of each MFI, Column IV-B lists the number of multiple borrowers with arrears and Column IV-C lists the percentage of arrears. The figures in Column IV-B are too small for further statistical analysis.

It can be seen that the arrears rates of multiple borrowers are lower than or equal to the overall arrears rate of that MFI. More significantly, it is also lower than or equal to the arrears rate in overlapping areas. This implies that multiple borrowers in areas that we have identified have a better repayment rate than their peers in the same areas. MFI6 and MFI7, the two fastest growing MFIs have zero arrear rates suggesting no negative relationship between fast MFI growth and repayment rates.

It should be noted that while we can conclude that multiple borrowers do not repay worse than their single borrowing peers in this list of partnership model clients, extrapolation to all MFI clients hinges on the assumption that this client list is an unbiased subset of the overall client list. The assumption is that the percentage of multiple borrowers who we do not observe in this sample occurs in the same proportion in the overall client base.

We cannot infer that multiple borrowing improves repayment since there could be other factors that are driving this result that we do not observe, namely, multiple borrowers, had they not taken multiple loans but there is no dramatic repayment deterioration due to multiple borrowing.

Table 5.4

Comparison of arrears as of Sept/Oct 2006							
MFI	**% of clients in sample with arrears (%)**	**# of Clients in sample**	**% of clients with arrears in overlapping areas (%)**	**# of Clients in overlapping areas**	**# of multiple borrowers**	**# of multiple borrowers with arrears**	**% of multiple borrowers with arrears (%)**
I	**IIA**	**IIB**	**IIIA**	**IIIB**	**IVA**	**IVB**	**IVC**
MFI1	0.15	147152	0.12	31675	1204	1	0.08
MFI2	1.06	244396	1.05	20522	1432	1	0.07
MFI3	0	5146	0	2140	146	0	0
MFI4	4.29	41662	4.72	5124	166	6	3.61
MFI5	0	20869	0	6261	282	0	0
MFI6	0.05	38546	0.02	4719	675	0	0
MFI7	0	77612	0	23876	1814	0	0

The following checks were done to ensure that multiple borrowers did not drop out of the MFI without paying. The dataset is a list of clients and arrears since 2004. A borrower with arrears who has dropped out with arrears will stay in the list for a minimum of one year and typically much longer. The earliest date of disbursement in this dataset is from September 2004. We compare our dataset of multiple borrowers from September 2006 with a newer list from April and March 2007. None of the multiple borrowers identified earlier have arrears six months later.

As regards clients who might dropout by prepaying, i.e., the client might have repaid the incumbent and switched MFIs after receiving a loan from the new MFI, we examine the prepayment rates and find no clear trends in the comparison between prepayment rates of multiple borrowers and their peers in those villages. In fact, the prepayment rates of multiple borrowers and single borrowers are surprisingly similar to each other. A cursory examination of prepayment rates and dropouts does not lend evidence to the possibility of multiple borrowers switching MFIs.

5.3.1 Other Characteristics of Multiple Borrowers

A few characteristics of multiple borrowers are presented, gathered from interviewing experts in the sector. Multiple borrowers could be more financially savvy or have graduated to a higher loan cycle and take up multiple loans with financial discipline. Multiple borrowers might be able to piece together a larger loan size required for a higher level of fixed investment needed for income generation activities, while she might consume loans of smaller amounts. Or they might use the two loans for two different business activities, one of which succeeds at a given point of time providing them with a steady income stream even in the face of an aggregate shock in the location or due to health shocks to a member of household. A well-timed second loan could also help smooth expenses when they are faced with repayment problems in the face of an unsteady income stream. She could be borrowing from one MFI to repay another.

This section presents the loan purpose and days elapsed between successive loans from multiple institutions, but it does not shed any further light into what the multiple borrowers might be doing with the loans.

Of all the multiple borrowers we find that only 35% of them have a common stated loan purpose between the two MFIs' records. It should be noted however that self-reported loan purpose data is not entirely reliable. Table 5.5 below shows the top most common matching loan purposes reported. No clear conclusions can be drawn.

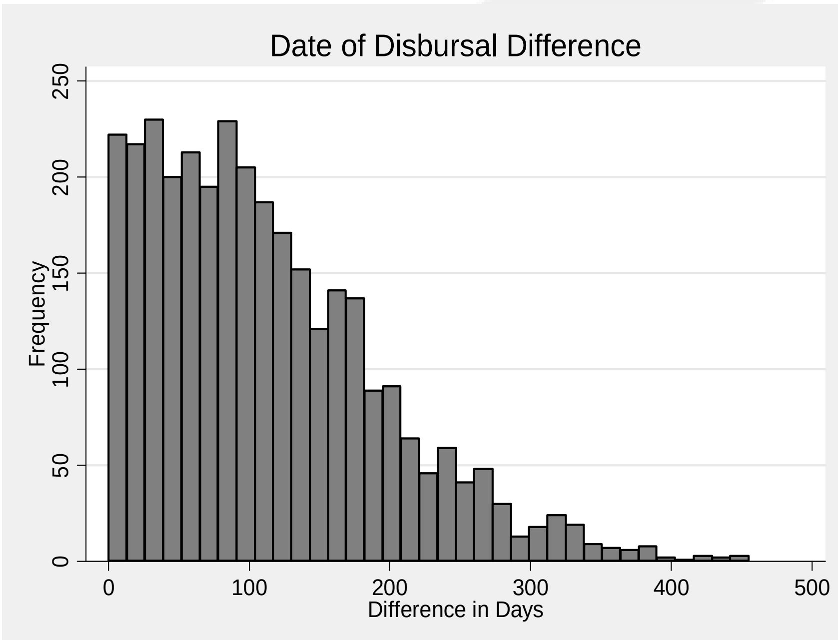
Table 5.5 - Most Common Matching Loan Purposes

Loan purpose	Extent of matching loan purpose (%)
Buffalo and milk	27.91%
Cloth	8.40%
General stores	7.87%
Vegetable vending	7.71%
Livestock and meat	5.87%
Auto repairs	5.23%
Agriculture	5.18%
Construction	3.98%
Restaurants and catering	3.26%
Total	75.40%

Another possibility is that the client could be borrowing from one MFI to repay another loan, but this is cited as the least common reason at 10% of the sample of multiple borrowers (Sa-Dhan 2006) in Andhra Pradesh. Back to back borrowings from one MFI to pay another to stave off default (like using one credit card to repay another) have the potential to lead to a repayment crunch past a threshold point of time after which the loans' interest component would have accumulated enough to pose repayment problems. From the time span of this dataset, it is not clear whether the clients are still within that threshold point. But it appears that this set of clients has not been faced with repayment troubles within this 3 year time window.

Figure 5.1 shows the frequencies of the number of days that have elapsed between 2 multiple loans from 2 different MFIs. The average number of days between loans taken out from different MFIs is 112. However, this number is sensitive to outliers. The median, number of days is 96 days. Therefore, a typical client waits about 3 months before taking out another loan with a different MFI. It seems that a significant portion of clients (though not a majority) are taking multiple loans only a month or two apart, suggesting that these loans could be for investment purposes in the same project. About 25% of multiple borrowers are taking out their second loan at least 6 months later, which could be for replenishment of capital, while the rest fall somewhere in between, making it difficult to draw clear conclusions.

Figure 5.1 – Days Elapsed Between Two Loans



The possibility that multiple borrowers might be largely later cycle borrowers with the incumbent and hence more experienced and hence might be better repayers was considered. The percentage of clients of MFI3, (which has zero overall arrears), in different cycles was examined. In the four months for which data was available, between 55 and 71% of the clients were in the first cycle.

5.4 Competition and Repayment

As described in Sections II and III, there is a widespread belief in the sector across the world that competition leads to significantly worsened repayment while rigorous studies suggest that the concern is less severe. This section compares arrears in areas of varying degrees of competition.

Table 5.6 presents a comparison of arrears rates. Column II lists the arrears rate in the sample, Column III, the arrears rate in villages or colonies with at least 1 multiple borrower (called overlapping areas), and Column IV, the arrears rate in areas where there are at least three MFIs who have multiple borrowers (called most competitive areas).

Except for MFI4 (which operates only in urban areas and has a small sample size), the arrears rate in Column II is less than or equal to Column III, which is less than or equal to that of Column IV. Compared to the sample arrears rate, all the MFIs except MFI4 have better repayment rates in overlapping areas which in turn is better in the most competitive areas. Again, this inference is based on the assumption that the areas identified as most competitive in this sample is a good indicator of the actual amount of competitiveness in these villages. This is reasonable, given the significant percentage of partnership clients in the overall market share of each MFI.

This is not to say that competition leads to better repayment rates, since endogenous branch placement is likely, i.e., MFIs will open branches in locations where clients are likely to repay better due to other factors. There could be other client, village or MFI characteristics that drive these results. The conclusion is that whatever the actual underlying reasons may be, MFIs with their intimate knowledge of the locations and the clients' profiles, are able to manage risk well in the face of competition. This finding also supports the view in the literature that MFIs might have better client screening and repayment enforcement in competitive branch locations (Vogelgesang, 2003). Both Group B MFIs have zero arrears rates in the most competitive areas.

Table 5.6

Comparison of arrears rates Sept/Oct 2006

MFI I	Arrears rate in sample (%) II	Arrears rate in overlapping areas (%) III	Arrears in most competitive areas (%) IV	# of clients in most competitive areas V
MFI1	0.15	0.12	0	1913
MFI2	1.06	1.05	0.07	2744
MFI3	0	0	0	188
MFI4	4.29	4.72	8.07	2428
MFI5	0	0	0	584
MFI6	0.05	0.02	0	399
MFI7	0	0	0	2830

5.4.1 Competition and Loan Size

Table 5.7 presents the total value of the principal amounts of running loans that a multiple borrower has taken from different MFIs. As can be seen from the last two rows of Table 5.7, Group B MFIs' average loan size is smaller than the rest. This figure counters the perception in the sector that when Group B MFIs move into an area of operation with an incumbent, they use larger (than current) loan size as a client attraction tool, without internalizing the clients total credit absorption capacity, and disregarding the Grameen model's traditional practice of starting small and gradually increasing loans in each cycle. It is more likely that the new MFI provides a smaller supplementary loan in the initial cycle or starts low in the first cycle, although the client is likely to be well into the first cycle or in a later cycle with the incumbent, at the time of the multiple borrowing. It is noteworthy that MFI4 a predominantly urban MFI has both higher loan sizes and the most percentage of total loans over Rs. 25,000, a figure mentioned by practitioners as an important threshold beyond which weekly repayment become a problem. MFI4 also has the highest arrear rates. However it should be kept in mind that these figures are total principals which give us sense for weekly repayments but are not the loan amounts outstanding.

Table 5.7

Total Average Loans Taken Between MFIs								
MFI	**Count**	**Average**	**St. Dev.**	**Min.**	**Max.**	**% < 12500**	**% >12500 & < 25000**	**% > 25000**
I	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	**IX**
MFI1	1426	17676	5002	2000	41000	11	79	10
MFI2	1700	17600	5423	2000	64000	15	75	10
MFI3	234	18402	6518	8000	47000	9	76	15
MFI4	181	18983	6037	7500	39500	11	71	18
MFI5	738	18669	4896	9000	41000	8	79	13
MFI6	682	15179	7095	2000	47000	35	57	8
MFI7	1814	16667	5211	4000	47000	18	75	7
Total	3203	18097	5561	4000	66000	11	77	12

5.5 Group Behaviour in Arrears

Table 5.7 shows collective behaviour in defaults. The figures are constructed by dividing the number of clients with arrears in all centers where there is at least one defaulter by the number of clients in those centers in this sample. MFI6 and MFI7, from Group B have the lowest figures, while the rest have a fairly high percentage ranging between 22% and 44%. This could be due to the quality of loan officers in those centers or an aggregate village wide shock to income or a joint decision to default. The latter is in line with the proposition of Ghatak (1999). When groups are formed on their own, low risk clients and high risk clients tend to group together.

Table 5.7

Percentage of Defaulters Per Center (%)				
MFI	**Sept**	**Oct**	**Nov**	**Dec**
MFI1	22%	22%		44%
MFI2	32%			42%
MFI3	0%		0%	0%
MFI4		36%	39%	
MFI5		0%	0%	
MFI6		6%	6%	
MFI7		0%	0%	

Section VI - Interviews with Selected Multiple Borrowers

6.1 Introduction

Twenty one clients of MFI4, who were identified by the name-matching algorithm explained in Section IV as multiple borrowers were interviewed. Three other clients were also interviewed who, for reasons explained below, are not consider to be multiple borrowers. The interviews took place in three different urban branches. The MFI's loan officers were not present while the interviews were conducted.

Nearly all of the women interviewed were engaged in some kind of small entrepreneurial enterprise. They were tailors, vegetable stand owners, flower sellers, saree/cloth business operators, or pot sellers. A few of the women were not currently employed, either due to health reasons (they themselves were ill or a family member required assistance) or due to pregnancy/young-child care requirements. Nearly all the women were married and their husbands were the head of the household. A couple of the women were widows.

The salient responses are shown in Table 6.1.

Table 6.1: Summary Responses

1	18 of the multiple borrowers were in their second cycle with MFI4 for 10,000 rupees; some were in higher cycles with other MFIs
2	Only 1 client has had repayment problems in the past for non financial reasons
3	46 out of 54 loans taken were reported to be used for investment purposes
4	All clients have substituted completely out of money lenders
5	None of the 21 clients was actively poached by a loan officer. It was by word of mouth. Many sought another MFI as they could not get a new loan immediately from the current MFI
6	Zero clients reported repayment difficulties currently; three said not-yet; there is a significant amount of intra-group lending for repayment
7	Only 1 client borrowed to pay another lender
8	13 reported that their group members knew they were multiple borrowers, while 9 said the MFI staff knew as well
9	20 out of 21 clients preferred to borrow from a single MFI if a larger loan size was available
10	11 clients said their consumption had increased after multiple borrowing
11	17 out of 21 chose lower interest rate as the most important criterion for their next loan
12	Multiple borrowers appeared more business savvy compared to single borrowers and had more undertakings currently

6.2 Running MFI Loan Details

All the women interviewed had running loans with MFI4 in various stages of completion. Eighteen of the multiple borrowers were in their second cycle with MFI4 for Rs. 10,000. The remaining three were well into their first loan cycle with MFI4 for Rs. 7,500. Clients also borrowed from MFI1 (19 respondents), MFI7 (9), and one other (1). Four clients interviewed had three running loans. Three clients had taken loans from multiple MFIs, but never at the same time so they were not considered to be multiple borrowers. Some of the women are on their third cycle with MFI1 and/or MFI7, indicating that MFI4 is the last MFI they had enrolled with.

Only one client had any problems with arrears. This occurred several years ago and involved a misunderstanding which was unrelated to financial difficulties.

The overwhelming majority of clients took out loans for investment purposes. Forty six of the loans were for investment, six were for consumption, and two were for emergencies. Many of these loans were invested in the spouse’s or son’s business, and some were divided between husband and wife for each one’s intended activity. In all likelihood, not all of these loans were used exclusively for investment purposes. Rather, a portion of each ‘investment-loan’ was used for minor consumption needs along the way.

6.2.1 Other Loans

Many of the women interviewed had some experience in borrowing from non-MFI sources. One had borrowed from a family member, four from neighbours, and ten from informal moneylenders. These moneylenders would accept some form of collateral (usually gold or jewellery) and advance funds that would be used for consumption or, more often, as investment in some business. The borrowers would make a weekly interest payment, but none of this would be applied to the principal. The principal must be repaid in one lump-sum payment at some point down the road in order to retrieve the collateral. Five women have either borrowed from an SHG in the past or are currently saving with an SHG, but only one woman has a current loan with an SHG.

All of these women who have had experience with informal creditors, save one, report that they no longer utilize these informal sources now that microfinance loans are available to them. Getting clients out the hands of these high-interest informal loans is a valuable service that will be further highlighted below.

6.3 Income

Information on the income streams of the clients was collected to see if any connections between income (or lack thereof) and clients' loan histories could be made. One obvious connection that could be drawn is that those clients with bigger and more loans tended to have larger household incomes. It is not clear whether those clients with larger incomes to begin with were able to leverage that income to take out more loans, or if taking larger, multiple loans have led to large incomes. There appear to be cases from both camps in this small study. Clients' responses on whether or not micro finance loans have led to increased wealth/income are summarized below.

6.4 Questions about Multiple Borrowing

- Why did you choose to join another MFI?

Fifteen of the twenty-one multiple borrowers interviewed said they took a second (or third) loan because they needed the additional funds for investment in their respective businesses. Some said that they needed the second loan for the same original project while others said they needed it for a second project (usually their son's or husband's). Sometimes the loans were taken out at nearly the same time in order to reach some initial level of investment necessary to launch the business, and sometimes the loans were taken after the passage of several months in order to replenish stock or to expand or to start a new venture. Most of the remaining interviewees said that they used one loan for investment and the other loan for consumption (usually to build a house or for their daughter's marriage). Two clients said that they borrowed from another MFI because the other group members were doing so and they felt as though they could handle it as well.

Again, it is likely that most of these loans were used at least in part for consumption purposes, but there is no reason to believe that the majority of the loans taken were not invested as the clients said they were.

A story often reported was that clients who had approached their original MFI to get more funds were either refused or told they had to wait several months in order to qualify for another loan. Rather than wait, the women were proactive in finding alternate sources of funding.

- How did you hear about the other MFI?

None of the clients were approached proactively by MFIs recruiting new clients. Almost invariably, it was word of mouth via neighbours or group members that motivated the clients to join a second group (often consisting of the same members) to take out a second loan with another MFI. It was the clients themselves who took the initiative to contact the MFI.

- Is it difficult to manage repayment for multiple loans?

None of the clients reported that she was having difficulty repaying her loans. Three stated the slightly more ominous reply ‘not yet’ but it was not suggestive that this was an indication of approaching repayment difficulty. Most stated that the weekly payments were small, so it was easy for them to meet their responsibilities.

- Have you ever borrowed from one lender to pay back another lender?

Only one client said that she had borrowed from a neighbour once to make a weekly payment on a loan in a previous cycle, but that she had made it up the following week. Nearly all the clients suggested that they would not even consider doing so. When the question was broadened to ask whether or not any intra-group lending is resorted to in order to meet weekly requirements, four of the clients said that this happened at least occasionally. It is likely that this activity occurs more often than was revealed during the interviews. One particularly forthright client said that inter-group lending goes on quite a bit within her group. She said that all ten members from their original group had at least two running loans and that sometimes they would borrow from her to tide them over until the following week. Overall, according to this particular client, everyone seemed to be handling their loans quite well and there was no serious danger of default.

- Did your original MFI discourage you from borrowing from another MFI?

One client responded that MFI1 had discouraged them from borrowing from a second MFI. The others said no. This might have been a defensive response to avoid the appearance of wrongdoing, but most of the women were open about having taken multiple loans. They suggested that the only thing the MFIs cared about was whether or not they could make the weekly payments. If they could do so, they were free to conduct themselves as they saw fit.

- Are your group members/loan officers aware that you have borrowed from another MFI?

Thirteen clients said that their fellow group members were aware of their having taken another loan, 9 said that their loan officers were aware of it. Many of the women were not sure who knew what exactly.

- Is multiple borrowing common in your village?

The respondents were split just about equally on this question. Eleven said that multiple borrowing was common and were well aware of many people in their groups and in their neighbourhoods who were doing it. Eleven interviewees said that it was not common, but within these there were several who suggested that they knew of people doing it. Two had no idea. There did seem to be some correlation between the village or colony the interviews were taking place in and the responses that were received. Multiple borrowing appears to be a group phenomenon where often whole groups or significant fractions of groups decide to multiple-borrow together. In other areas, people are a little unsure of whether multiple borrowing is frowned upon, so they keep it to themselves.

On the other hand, four respondents expressed concern about multiple borrowing and felt that it was dangerous for others to do so, reasoning much along the lines of the MFI community. These same people stated that they had no trouble handling their multiple loans, so it is not clear whether their opinion was simply rooted in pessimism about their fellow neighbours or something more substantive. Overall, clients felt that if someone wanted to take a second loan, it was fine as long as they could handle the payments.

- Would you prefer to borrow from a single MFI if they provided you with bigger loans?

20 out of 21 multiple borrowers responded in the affirmative.

- Which MFI do you prefer and why?

12 of the women indicated that they had some preference for MFI4 because they liked the staff or felt more comfortable with the atmosphere there. Very few of these responses dealt with concrete issues such as interest rates -- all the MFIs appear to have similar terms in these areas. The remaining women indicated that they have no preference or would prefer whoever offered them a bigger loan or a loan with a lower interest rate.

- What size loan do you require to completely fulfill your credit needs? What would you use it for?

Answers varied for this question. Some indicated they did not need another loan; some wanted as much as Rs. 1 to 2 lakh. Almost all of them suggested that they would use the funds for investment purposes. These responses seemed sincere. Most of the women appeared ready to undertake expansion of their business if the opportunity was available.

- Has your consumption/income changed since borrowing from MFIs?

Eleven of the clients said that their consumption had increased since borrowing from MFIs. Several others indicated that their income had increased, but so had their need as more children have been born to their family or other needs had cropped up. Many responded that they had noticed no change in their consumption, but that their life was less stressful due to the fact that they no longer needed to deal with other lenders. One woman whose husband had died said that she was worse off.

- What are you most interested in seeing for your next loan?

Somewhat surprisingly, 17 women chose lower interest rates as their number one choice. Four chose speedier disbursement and only one chose larger loan size. One woman did not answer the question. The clients said that if they could get a loan with a lower interest rate they could pay off their loans more quickly and then move on to larger loans. Obviously, since these women were multiple borrowers, they were interested in larger loans, but it did not strike these women as the number one priority. Possibly, having multiple sources of loans available to them made larger loan sizes from a single MFI a less important priority. Also, many women indicated that they would like to see monthly payments replace weekly ones.

6.5 Concluding Discussion

Previous interviews with sector practitioners revealed their extreme concern about multiple borrowing. In addition, academics have pointed out several theoretical dangers to repayment and dropouts associated with increasing competition among micro finance institutions. However, very little evidence was found in these interviews to support these concerns. While it is acknowledged that these interviews were conducted only with a small set of clients and that these results cannot be generalized, the responses suggest that competition and multiple borrowing have not lead to repayment deterioration, increased dropouts or worsened financial situation of the clients.

Nearly all of the women interviewed indicated that they needed more loans to meet investment needs. They did not have concerns about their ability to pay their debts and they often had plans to expand their business further if the opportunity presented itself. Interviews with first-cycle single borrower clients were useful in that they highlighted the difference between these women and the more experienced multiple borrowers. Multiple borrowers appeared to be more business savvy and were often juggling several projects and MFI memberships at once. They seemed to be confident in their ability to repay and were well aware of their responsibilities.

The behaviour of a couple of clients who were following the lead of their groups and had no actual need for taking a second loan is worthy of attention. Also, one woman whose husband had died appears to be vulnerable to repayment problems. This case supports the point of view that multiple borrowers who have recently increased their level of indebtedness due to the presence of additional MFI credit are likely to pay well in times of a healthy economy but are vulnerable to repayment problems in the face of an adverse economic shock affecting their stream. The group behaviour could also lead to larger scale defaults. It must be noted, however, that the same women reported that repayment was not a problem for them. No distressed borrowers who were staving off short-term emergencies by opening up new lines of credit were discovered during this process. Some intra-group borrowing does appear to be occurring, however, but with few or no negative consequences.

Loan officers appear not to be bothered by the fact that their clients are borrowing from other MFIs. Groups are multiple borrowing en masse, though there is no sign of strategic behaviour on the part of these groups to default as a group. Loan officers were only interested in getting their weekly payments and group members do not have a problem with other members ‘double-dipping.’

Interest rates are of a higher priority for clients than anticipated. This is another indication of client perspicacity. Clients can stitch together three or four loans to reach a large loan size, but they would like lower interest rates so that they can pay down the principal more quickly in order to save more and move on to bigger loans, hopefully on better terms (such as monthly payment schedules).

Many clients indicated that consumption and income have increased since borrowing from multiple MFIs. Not all clients may be able to clearly determine whether or not they are getting richer, but they do notice that their lives have improved in the sense that there is less tension now that they are no longer borrowing from informal sources. One thing that multiple borrowing does is that it provides clients with additional outlets for credit when their original MFI will not loan more to them. This means that they can avoid the awkward or high interest options of borrowing from neighbours or local moneylenders.

Based on the content of these interviews, there may be a case for segmenting the microfinance market and provide different terms to low risk clients at the upper end of the spectrum. At least four, probably six or seven, of the clients interviewed appeared to be ready to handle monthly payments, larger loan sizes, and fewer obligatory meetings. However, they remain ineligible for loans from traditional banks. Therefore, there could be room for MFIs to expand both geographically and vertically in terms of product differentiation. Admittedly, profiling and scoring high versus low risk borrowers, and clients ready to handle larger loan sizes is not a trivial task.

Section VII - Concluding Observations

This study finds that the microfinance sector in India is evolving in a manner similar to ones in many competitive countries in the world.

As regards competition, the sector is very concerned about client poaching, reckless lending by aggressively growing MFIs leading to multiple borrowing, repayment deterioration and over-indebtedness. Concerns over patterns of competition are similar – that fast growing MFIs compete head-on in areas with an incumbent for the same clients without adequately assessing the clients' repayment capacity. It is felt that while multiple memberships would help a majority of the clients, some of the clients would get deeper into debt. The community almost unanimously favours the creation of a credit bureau to prevent multiple borrowing and to better assess clients' credit worthiness.

Our analysis of the data shows that on average, 7.28% of the MFIs' clients in the sample are multiple borrowers. An estimated 10.28% of all the clients in the state are multiple borrowers. These figures are under-estimates. The key finding of this study is that multiple borrowers have a lower arrears rate than their single borrowing peers in the same branches and lower than the rate of the overall sample. A majority of the multiple borrowers interviewed said they used the second loan for investment purposes and none reported repayment difficulties. Analysis of the average number of days elapsed between multiple loans, and their stated loan purpose as listed in the data was performed, but this did not shed further light on what the motivations for taking multiple loans could have been.

Compared to the overall arrears rate, all the MFIs (except one urban MFI) have better repayment rates in more competitive branch locations than otherwise. While this does not mean that competition improves repayment, it appears that MFIs, by and large, are managing risk well in the face of competition at this point. There is no strong evidence to support the perception in the sector that new fast growing MFIs use larger (than current) loan size as a client attraction tool disregarding the Grameen model's traditional practice of gradually increasing loans in each cycle. Fast growing MFIs have the best repayment rates and the highest percentage of multiple borrowers.

There is a degree of collective behaviour in multiple borrowing and in defaults at large. A group member is likely to know about her partners' multiple memberships. We find that in our data, in centers where there was at least one multiple borrower, between 9 and 15% of the members of the same center are also multiple borrowers. These figures are up to four times the average multiple borrowing incidence rates. Interviews with multiple borrowers revealed that multiple borrowing is done with the knowledge of many of their group members and loan officers and is even a collective group dual membership in some cases. As regards defaults, in 3 MFIs, centers where there was at least one defaulter had a total of between 22 and 44% defaulters.

The group behaviour noted above gives some cause for concern. The microfinance clients in a center are a collective. MFIs are particularly prone to large scale defaults or late payments in the event of an adverse economic shock or recession. As we have seen in Bolivia, macro-economic business cycle downturns exacerbate repayment deterioration and it is important to have a good risk management strategy in place.

None of the multiple borrowers interviewed had been poached by an MFI – it was a voluntary decision to gather more credit. Based on their repayment performance and the interviewees' unanimous desire for larger loan sizes, it appears that credit rationing is occurring. Each individual MFI is offering less credit to multiple borrowers than what she wants and is able to repay.

There is no strong evidence to suggest the need for a credit bureau at this point, at the current levels of indebtedness, if identifying multiple borrowers to avoid repayment from suffering is the main concern. It does appear that peer and staff monitoring and informal information sharing about multiple borrowing is prevalent. Both group members and loan officers have good knowledge about the clients' activities and are better able to monitor the loan use for the stated business activity. While a cost-benefit analysis needs to be done in this regard, the findings confirm the judgment of some of the sector experts interviewed that, at least for the next 10 years, loan officer and peer monitoring is more effective and cheaper than a credit bureau, particularly in rural areas.

A credit bureau could be justified on the grounds of being able to view clients' past credit histories to discern between different types of clients and if possible to differentiate between distress and opportunity-driven borrowers. It could be used to target different client groups with customized products, loan sizes and interest rates. It could also avoid cross-subsidizing high risk borrowers by low risk borrowers if differential interest rates are offered to each type of client. This will also improve loan approval times and improve efficiency (Khurana 2006). Apart from these benefits, a credit history report could serve as a portable substitute for collateral for clients to obtain financial services from other lenders.

This study is intended to be a first step in motivating further rigorous research on this subject.

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Appendix A

Motivation

The incidence of multiple memberships between partnership model clients in the state has been identified. The appendix describes the methodology used to estimate the overall incidence of multiple memberships amongst all the clients of these MFIs in the state. If data were available for all clients in the state, estimating multiple memberships would be more straightforward. If we assume that the state is a closed unit where no clients borrow from an MFI in an adjacent state, one would simply look at the data for each MFI, determine the number of clients who appear on two or more lists, then divide this number by the total number of clients (being careful not to double-count anyone). However, since only data for partnership-model clients is available, multiple borrowing estimates of the sample would understate the true average, and hence the need for a more precise estimate.

Methodology

The source of underestimation is the possibility that partnership-model clients of an MFI (MFI1) may be non-partnership-model clients of another MFI (MFI2), or non-partnership-model clients of MFI1 may be non-partnership-model clients of MFI2. The fact that we only have access to data on partnership-model clients, makes these two scenarios invisible to us.

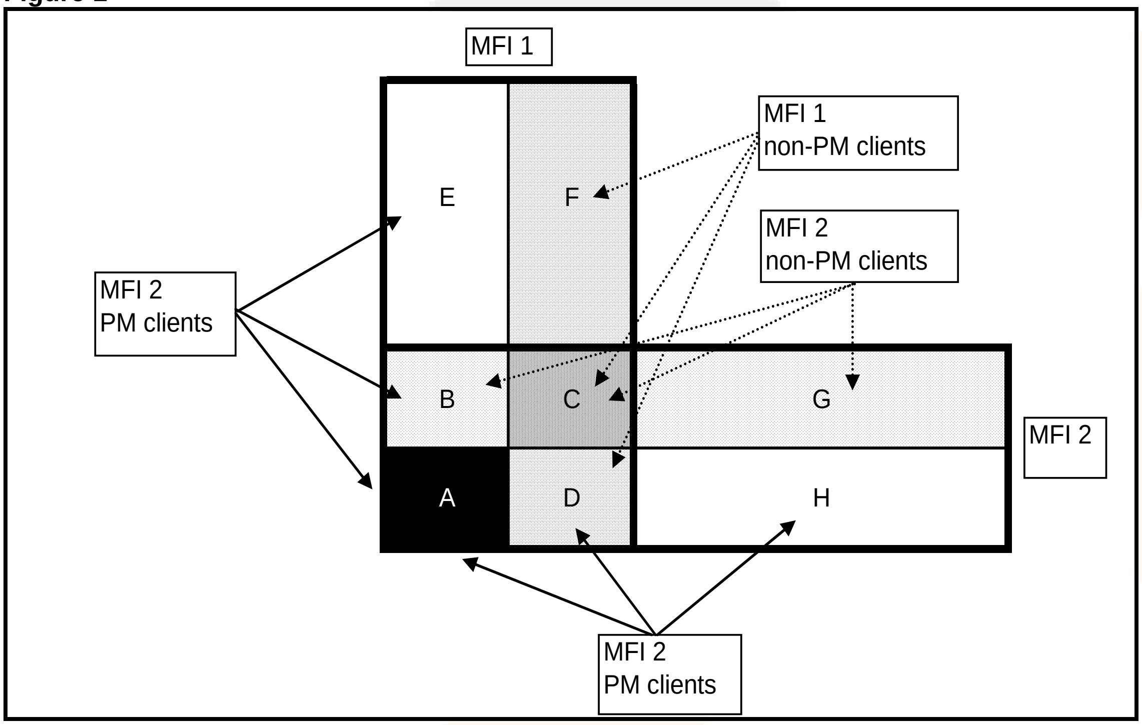
Consider a world in which only two MFIs operate, but whose clients are divided into partnership-model (PM) and non-partnership-model (non-PM) clients, (Figure 1); PM client data is available to us. The matching algorithm has identified rectangle A as being a set of multiple borrowers, but rectangle ABCD is the true set of multiple borrowers.

The correct expression describing multiple borrowing would be:

Ratio of multiple borrowers to all borrowers $= \dfrac{A+B+C+D}{A+B+C+D+E+F+G+H}$ (Ratio 1),

where A is the number of multiple borrowers identified from the available data, B is the unknown number of clients who are both MFI 1 partnership-model clients and MFI 2 non-partnership-model clients, ADH is the total number of MFI 2 partnership-model clients in the state, and BCG is the total number of MFI 1 non-partnership-model clients. However, we do not know B, C, or D.

Figure 1



Reasonable estimates of B, C, and D can be determined if an important assumption is made. Assuming that both MFI 1 and 2 randomly decide which clients are designated as partnership model clients, from the total set of borrowers in the state, then

$$\frac{A}{B} = \frac{ADH}{BCG},$$

B is the only component of this equation that is unknown, so it can easily be solved for. A similar process yields a solution for D. Once B and D are known, C can be found by utilizing ratios by using the expression:

$$\frac{C}{D} = \frac{BCG}{ADH}.$$

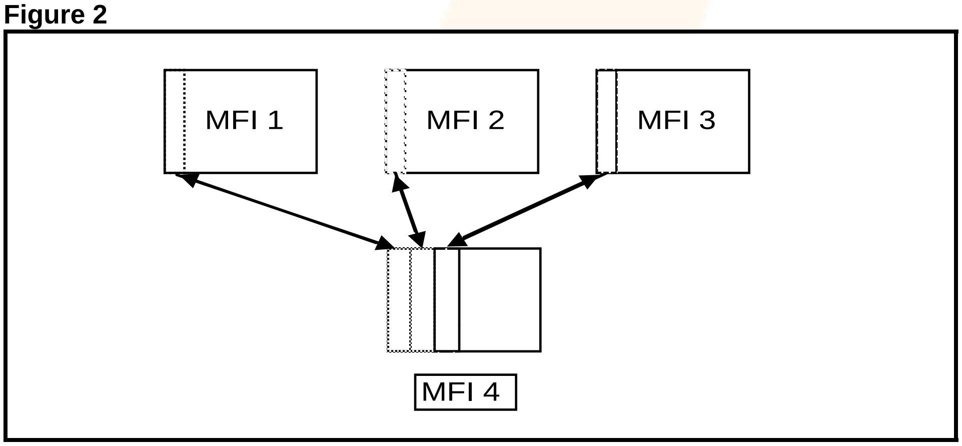
Using these, Ratio 1 from above can be found.

The assumption that partnership model clients are chosen randomly within the state is critical. If MFIs were to select their partnership-model clients in a systematic way then the above methodology would be flawed. For example, if MFI 1 and MFI 2 had an incentive to locate their partnership-model clients in different areas, then the estimate of rectangle A would be nearly zero, and the ratio analysis above would result in large underestimates of the extent of multiple borrowing. This does not mean that all MFIs have to choose their partnership-model clients in the exact same manner. What is important is that for each MFI all of their clients have an equal likelihood of being selected as partnership-model clients.

The process for finding the incidence of multiple borrowing has thus far only allowed for two MFIs. Now the approach must be expanded so that more than two MFIs may be operating in the state. This can be done if another strong assumption is made. Namely, it is necessary to assume that triple-borrowing, quadruple-borrowing, etc., do not occur.

Figure 2 summarizes the situation with four MFIs.

Figure 2



Looking at pair-wise matches between MFI4 and each of the other MFIs, it is relatively easy to determine the incidence of multiple borrowing among MFI4’s clients. The number of pair-wise matches is discovered in the manner outlined in Figure 1. This amount is added to the number of pair-wise matches between MFI4 and the other MFIs. The total is divided by the overall number of borrowers from MFI4 for an estimate of the prevalence of multiple borrowing among the clients of MFI4. Now the difficulty of the assumption that no triple-borrowing occurs becomes clear. In reality, some portions of the dotted rectangles will be overlapping, i.e. some of the multiple borrowers identified between MFI1 and MFI4 and between MFI2 and MFI4 are the same people. Making the assumption that these multiple borrowers are distinct will result in a slight overestimate of multiple borrowing for MFI4. But it has been verified using the name matching algorithm, that the incidence of triple and quadruple borrowing in the data set is insignificantly small.

In order to find the total incidence of multiple borrowing among all MFIs, the process in Figure 2 should be repeated for each MFI so that the percentage of multiple borrowing for each MFI is known. Then taking a weighted average of these values will result in an overall estimate of multiple borrowing as a percentage of total borrowers.

Application to this data set

The method described above provides a framework for calculating the incidence of multiple borrowing. The following table lists the necessary assumptions.

Table 1

Assumption 1	The state is a closed unit – no clients on the periphery are borrowing from MFIs in adjacent states.
Assumption 2	MFIs select partnership-model clients randomly. Table 2 summarizes these findings. Ideally, all the MFIs would select their partnership-model clients randomly at the client level. However, this is not the case. Some MFIs select partnership model clients in larger groupings (branch, for instance). The selection of these larger units does appear to be random, so the methodology described above continues to apply, but with larger and fewer groupings the variance of the estimate will increase.
Assumption 3	Clients do not borrow from more than two MFIs. Whereas the first two assumptions made are reasonable, this assumption is clearly false. Triple-borrowing, at least, has been identified in very small percentages in the sample data. Qualitative interviews have confirmed this. The extent of triple-borrowing, however, is in all likelihood minimal and it is necessary to assume that it does not occur to make this estimation tractable. As noted above, the consequence of making assumption 3 is that estimates for the incidence of multiple borrowing will be slightly inflated. This inflation is mitigated by Assumption 4
Assumption 4	Partnership-model data for all MFIs is available. Obviously, the true extent of multiple borrowing will be greater than the sample estimate. The omission of other smaller MFIs will also contribute to this underestimation. In addition, we are only concerned itself with multiple borrowing among MFIs. Clients who may also be borrowing from SHGs have not been considered. Certainly the number of clients who may be borrowing from at least one MFI and an

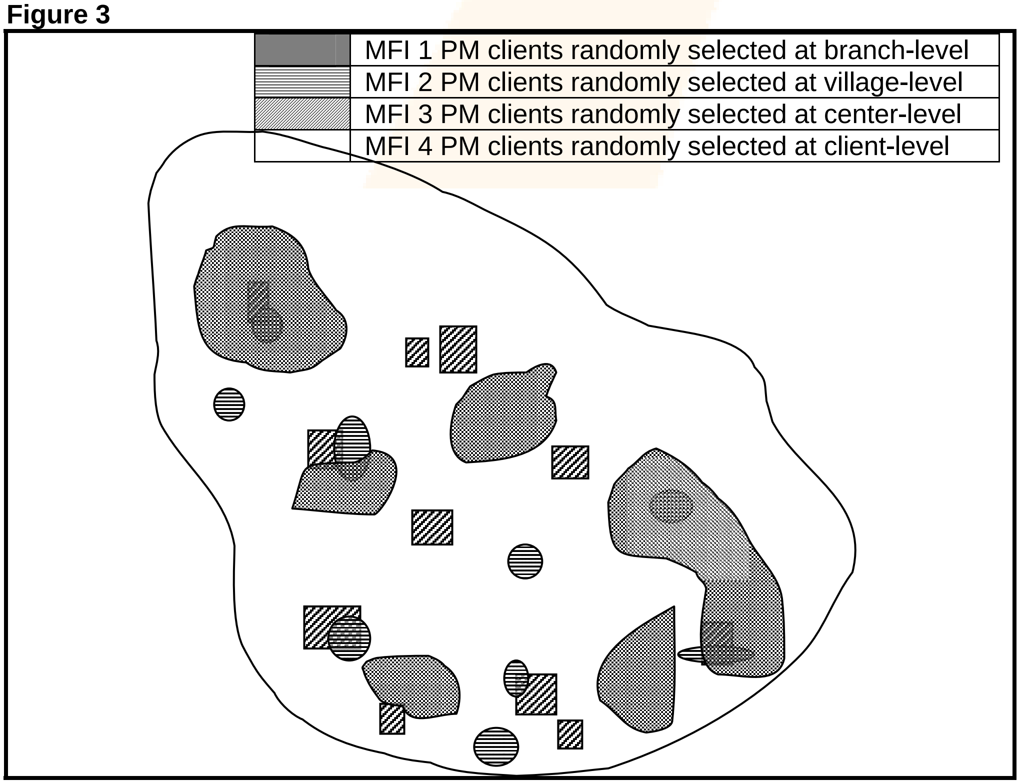
	SHG simultaneously may be significant.

Table 2

MFI	Partnership-Model Selection Process
MFI1, MFI2, MFI3, MFI4, MFI5, MFI6	Partnership-model clients are selected randomly at the client level
MFI7	Partnership-model clients are selected randomly at the client level

Figure 3 depicts the situation graphically. Let the large amoeba-like shape be a map of MFI clients in the state. MFI4 is ubiquitous and selects its partnership-model clients randomly at the client level, where each dot represents a random PM client. The other 3 MFIs select their partnership-model clients in larger blocks, indicated by the shaded shapes. Essentially, the size of the blocks is what is in question here. If all the MFIs choose partnership-model clients at the client level, then graphically all the clients would be represented by tiny dots and given a large enough number of clients we would be more confident in the methodology's accuracy. But because some MFIs choose partnership-model clients in larger blocks, the analysis is more troublesome. As long as these larger blocks are selected randomly, the arguments still holds, though the possible error of the estimate increases in size.

Figure 3



Making the above assumptions will lead to estimates for the incidence of multiple borrowing that are inaccurate. However, they are necessary in order to proceed.

Calculation

Three pieces of information are necessary to apply the methodology

- Number of pair-wise partnership-model matches between all MFIs.

This is arrived at from the name matching step and is summarized in Table 3. These matches were arrived at by comparing client information from different MFIs over September/October of 2006 using the Soundex and the Double Metaphone algorithms.

Table 3

Pair-wise Matches Between MFIs							
	MFI1	MFI2	MFI3	MFI4	MFI5	MFI6	MFI7
MFI1		5	118	217	0	73	2006
MFI2	5		155	14	1375	523	560
MFI3	118	155		1	0	0	315
MFI4	217	14	1		0	0	27
MFI5	0	1375	0	0		0	2
MFI6	73	523	0	0	0		69
MFI7	2006	560	315	27	2	69	

- Number of partnership-model clients in the state.

The second piece of information is also easily obtained from the partnership-model data, which contains information on all partnership-model clients for the given MFIs. The PM-column of Table 4 contains this information. The months of September/October 2006 were chosen to be the window from which to calculate the incidence of multiple borrowing. It is important to be precise about the time frame due to the fast-growing nature of many of the MFIs involved.

Table 4

Overall MFI active borrowers			
MFI	**PM**	**Non-PM**	**Total**
MFI1	145997	208223	354220
MFI2	244396	232814	477210
MFI3	5146	11833	16979
MFI4	41662	6082	47744

MFI5	20869	0	20869
MFI6	41662	147343	189005
MFI7	77612	690410	768022

- Number of non-partnership-model clients in the state.

This is constructed by contacting the MFIs to ask about their total number of clients in 2006/2007 in the state in question. In addition, data has been obtained from MixMarket, Sa-Dhan publications, and MFI website information to make estimates of the number of non-partnership-model clients. This data is not very reliable at present and more work needs to be done to find precise estimates of these figures.

Results

Table 5 summarizes the findings for the incidence of multiple borrowing for each MFI and for all MFIs in Sep/Oct 2006.

Table 5

Overall Multiple Borrower Incidence		
MFI	**% of multiple borrowers**	**# clients**
MFI1	14.27	354220
MFI2	4.74	477210
MFI3	72.04	16979
MFI4	1.98	47744
MFI5	19.59	20869
MFI6	4.52	189005
MFI7	9.46	768022
Overall	10.08	1874049

It must also be kept in mind that this number reflects the incidence of multiple borrowing in the entire state, including those villages where only one MFI may be operating. Obviously, were the analysis restricted to villages where at least more than one MFI is operating, the overall incidence would be significantly higher.