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Case report

Determinants of loan repayment performance among borrowers of microfinance institutions: Evidence from India

Seyedmehrdad Mirpourian [a], Andrea Caragliu [b,*], Giorgio Di Maio [c], Paolo Landoni [d], Emanuele Rusinà [e]

[a] Weissman Center for International Business, Baruch College, New York, USA
[b] Politecnico di Milano, ABC Department, Milan, Italy
[c] Politecnicnico di Milano, Department of Management, Economics and Industrial Engineering, Milan, Italy
[d] Politecnico Di Torino, Department of Management and Production Engineering, Turin, Italy
[e] University of California at Berkeley, Haas School of Business, Berkeley (CA), USA

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ABSTRACT

A better understanding of loan repayment behavior of borrowers can contribute to the development of microfinance. This paper investigates the repayment performance of borrowers of a nonprofit Indian microfinance institution, the Indian Institute for Mother and Child – IIMC, using a novel data set. We collected raw data on more than 1600 borrowers, covering a period of more than three years. The data collection focused on the installments of those borrowers who at first received a loan lower than the loan limit, but then reached the loan limit within the time span considered. The final sample for the empirical analyses is homogeneous in terms of borrowers' characteristics and includes the installments of 373 loans. We focus on a relatively neglected issue in the microcredit literature, viz. the motivation of the borrower for receiving future loans. In addition to borrowers' characteristics, we analyze the motivational issues that may influence the probability that the loan is fully or partially repaid, and the time horizon over which it is repaid. Empirical results show that the repayment rate improves as borrowers get closer to the loan limit, which is the maximum available loan. In other words, motivation for reaching the maximum loan level is positively associated to the repayment performance.

1. Introduction

A sound understanding of the mechanisms determining loan repayment performance is invaluable for Micro-Finance Institutions (henceforth, MFIs). Knowing the main repayment determinants, MFIs can identify borrowers with a higher risk of default, thereby allocating loans more efficiently, thus ultimately increasing repayment rates. A higher repayment rate could in turn be beneficial for both MFIs and borrowers: MFIs with higher repayment rates can in fact reduce the interest rate applied. Lowering the financial cost of credit provides the opportunity for more borrowers to have access to credit. A better understanding of these issues, and of the remaining factors influencing the behavior of the borrowers, can contribute to the development of Microfinance.

This paper presents novel empirical evidence on the basis of a new data base collected with field work in the Institute for Indian Mother and Child (henceforth, IIMC), a not-for-profit organization working for the economic and social development of the rural areas near the city of Kolkata, India. IIMC is also a microfinance institution providing small loans to women living in nearby rural villages. Loans are individual, yet clients must be members of a group of around twenty-five people. Over time, IIMC gradually adopted a progressive lending policy: clients repaying their loans on time can then ask for larger loans, up to a maximum limit. This type of case study represents an excellent opportunity to assess the effectiveness of institutional settings in MFIs, starting from the significant evidence suggesting the positive effect of microfinance loans on poverty reduction, especially among women.

With respect to the extant literature, our analysis differentiates in that it focuses on the features of the loan itself, rather than on the characteristics of the individual borrowers, which are typically found to influence loan repayment performance. In fact, the data set assembled comprises only women of comparable age, marital status, level of education, and professional skills. Thus, the main source of variance in the data is the sheer time of repayment that is being observed, while little heterogeneity in the characteristics of the borrower is expected to be left in the data.

In fact, determinants of loan repayment performance have been variously defined and empirically identified in the literature:

* Corresponding author.
E-mail address: andrea.caragliu@polimi.it (A. Caragliu).

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determinants considered in empirical studies usually include gender, age, experience the borrower has had in the same sector, education, income, business sector, formality of the borrower's business, social ties of the borrower, group homogeneity, payback period, type of loan (cash or in kind), loan size, proximity of the borrower's business to the lending agency, and motivation of the borrower for receiving future loans.

In this paper we focus on the latter; in fact, while individual characteristics of the borrowers have been vastly investigated, features of the loan are instead relatively less discussed, and need much more attention. In particular, our analysis focuses on motivational issues.

Motivation is a crucial factor affecting loan repayment. MFIs generally do not ask for a significant collateral, so the main motivation for loan repayment is the borrowers' expectation for receiving future loans (Field & Pande, 2008).

Motivational issues are also discussed in a lively stream of research in the social psychology field. In particular, people evaluate their progress on the basis of a standard of reference. In fact, "*the perceived value of a given unit of progress changes as a function of distance from the standard of reference. When a person uses the desired end state as the reference point for monitoring progress, the perceived marginal value of progress increases. For instance, reading one more page is perceived as yielding more progress when 50 pages remain (1:50) than when 200 pages remain (1:200)*" (Bonezzi, Brendl, & De Angelis, 2011, pp. 607–608).

The interest paid to motivational issues in other social sciences is not fully reflected in the field of development economics; recent contributions in this line of research suggest, for instance, that anecdotal evidence can be found for excessive punishment within microfinance groups, in turn due to joint liability (Czura, 2015). This paper argues that potentially interesting elements, so far relatively neglected in the extant literature, are the motivational issues that may influence the probability that the loan is fully or partially repaid, and over which time horizon. In particular, insufficient attention has been paid so far to the relationship between the end reference point, in this paper defined as the loan limit of a given MFI branch, and the loan repayment performance (see Table 1).

2. Data and results

2.1. Characteristics of the program and the analyzed sample

In order to verify whether motivational issues play a role in determining loan repayment performance, we collected a novel data set on microcredit loans. Data have been collected within a microcredit program carried out on a continuous basis at the Institute for Indian Mother and Child (IIMC).

2.1.1. The Institute for Indian Mother and Child (IIMC) in West Bengal (India)

IIMC is a nonprofit organization, active since 1989, whose headquarters are located in Parganas, a district of West Bengal, India, stretching from metropolitan Kolkata to remote coastal villages near the Ganges river delta. Only 16 per cent of the population of this region lives in urban areas (mainly in Kolkata), while the majority of the population (84 per cent) lives in villages and rural areas. 37 per cent of the population living in these areas is below the poverty line; the main business activities for these people are paddy field and vegetable cultivation, fishing, cloth business, shop keeping, and basic trade. Crops often suffer from a sub-standard irrigation system, and cyclonic storms are frequent. The literacy rate is equal to 68 per cent for men and 50 per cent for women; higher education achievements are even lower, especially in rural areas (Brahamary, 2011).

IIMC operations cover an area of 100 square kilometers with 5 million people, with projects in education, healthcare, microfinance, and social development. In education, IIMC operates 30 schools, with 400 teachers and 8000 students, of which 3000 are sponsored children, 2 boys' orphanages, one orphanage for handicapped girls and a child day care center for working mothers. In healthcare, IIMC operates 6 outdoors clinics, and 2 indoor centers with 15 doctors and 150 nurses and health workers, providing medical care and medicines to 3000–4000 patients per week. IIMC provides social, cultural and intellectual support to village mothers with the Women Peace Council project, which involves 70 groups of women, each group with 10 mothers, in 70 villages, and aims to give an opportunity to women's groups from rural villages to empower themselves. International partners in 25 countries support IIMC and every month approximately 20 international volunteers take part in its various activities, thanks to the intermediation of these international partners (e.g. the Social Innovation Teams – SIT – platform and the Project for People – P4P – association). This paper stems from one of these collaborations.

2.1.2. The microcredit program

In 1999, IIMC launched a microcredit program, named Mahila Udyog. Each of its eight branches now lends to rural women (men are not eligible for these loans), and provides micro-savings for their customers. In general, each branch operates within a radius of 10 km; on average, each branch serves 46 villages. A borrower is expected to repay her loan in 12 months (i.e. within 52 weeks after the loan is disbursed). Customers usually repay in fixed weekly installments, typically starting 4 weeks after the loan disbursement date. Holidays considered, borrowers repay the loan with 44 weekly installments.

If a borrower does not pay back her loan after 12 months, she will be considered a late borrower. When a late borrower does not pay back her loan within 15 months, she will be considered a defaulter (Table 2).

In order to be eligible for loan receipt, each customer must be a member of a group. Groups typically consist of 20–25 women living in the same neighborhood. All adult women can join a group but only married women or widows can apply for a loan. To be eligible for a loan, after joining a group, a woman has to attend the weekly meetings and make savings at least for three months. Savings must be at least 10 Indian rupees (INR) each week. After

Table 1
Examples of two loan distance variables.

Year	2005	2006	2007	2008	2009	2010	2011	2012
Distance variable	−5	−5	−3	−2	−1	0	1	2
Client A – Chakberia branch (maximum available loan = 11,000)								
Loan Size (client A)	2200	3300	5500	7700	8800	11,000	11,000	8800
Client B – Hatgacha branch (maximum available loan = 16,500)								
Loan Size (client B)	4400	6600	8800	11,000	13,200	16,500	14,300	16,500

Source: Authors' elaboration.