

# **Transaction Costs in Group Microcredit in India**

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## *Transaction Costs in Group Microcredit in India*

Existing literature indicates that transaction costs are a major contributor to high interest rates on microcredit loans. A study was conducted using the case study method in order to examine the transaction costs of three established microfinance institutions. Transaction cost includes the costs of group formation, training, appraisal, documentation, disbursement and monitoring. First year and repeat loan transaction costs were studied. Life cycle transaction costs, namely the costs over the group's life cycle were also examined. Based on the findings, implications for policy makers and microfinance institutions (MFIs) were drawn.

*Key words: Microcredit, Transaction Costs, Group Lending, Microfinance institutions*

### **INTRODUCTION**

#### ***Transaction Costs In Microcredit***

There are three kinds of costs that a lending institution incurs when it provides a loan: the cost of the money that it lends; the cost of prudent financial practices such as provisioning for loan defaults; and the cost of transaction, which includes the costs of identifying and screening the client, processing the loan application, completing the documentation, disbursing the loan, collecting repayments and following up on non payment.

Unlike the cost of funds and the cost of defaults, transaction cost is not proportional to the amount lent. The average microfinance loan size being smaller than most other loans - corporate and personal - the transaction cost on a percentage basis for a microfinance loan tends to be higher.

The most popular model for dispensation of microcredit in India is the group-lending model. As per the website of Sa-dhan, (Industry Association of Community Development Finance Institutions in India), group loans account for 93% of the microfinance in India. The group lending model entails certain peculiar costs such as group formation costs and costs on training the borrowers prior to loan disbursement. The high degree of supervision and high frequency of installment payments (usually weekly or bi monthly) that are important features of group microcredit also contribute to costs.

#### ***Rationale For Study***

Though the microcredit sector, by definition, caters to the economically disadvantaged, there is a degree of support for the view that microcredit providers should charge interest rates so that the lending programs become "sustainable" (Adams and Von Pischke, 1992:1463-1470 and Yaron, 1992).

Sustainability enables operations on a larger scale and coverage of a larger segment of the population. With demand for microcredit far exceeding supply, sustainability and subsequent increase in scale are important objectives. As per the Microbanking Bulletin (2004)<sup>1</sup> data, the average operational self-sufficiency<sup>2</sup> of the 302 microfinance institutions (MFIs) on which data was presented was 123%, and the financial self sufficiency was 110%.

Setting sustainable interest rates has resulted in higher interest rates in microcredit. Chavan and Ramakumar (2004) observe that after the introduction of microcredit, an upward shift in the interest rates charged by formal institutions to rural borrowers in India has been noticed. Policymakers are concerned about the high interest rates since microcredit is meant for the economically weak. Helms and Reille (2004) and Fernando (2006) argue that, interest rate ceilings are not likely to be a solution to these concerns of the policy makers. This is because they will retard the long term growth of availability of credit for the target set of borrowers as if formal financial institutions are not able to cover their costs, they would tend to exit the market. This in turn would result in increase in dependence of the poor on informal sources of finance. It therefore follows that microcredit providers need to look at innovative ways to reduce costs, which would result in interest rates coming down in a sustainable manner.

Hence MFIs face the challenge of finding ways to reduce lending costs. While the cost of funds, default costs and transaction costs contribute to the total cost of lending in any sector, in the microcredit sector transaction costs have been identified as being an important contributor to lending costs (Goodwin-Groen, 2003). Rosenberg (2002) has outlined a method for estimating the interest rate that an MFI will need to realize on its loans if it wants to fund its growth primarily with commercial funds. In his model, he has stated that the administrative expenses of efficient, mature institutions tend to range between 10-25% of the average loan portfolio. Administrative expense covers all the annual recurrent costs – salaries, benefits, rents, utilities and depreciation - except the cost of funds and loan losses.

The reasons for high transaction costs in microcredit are numerous - the most important being that the average microfinance loan size is small and hence the transaction cost on a percentage basis for a microfinance loan tends to be higher. Further, the group lending model adopted entails peculiar costs such as group formation costs, costs on training the borrowers on the procedures to be followed, a higher degree of supervision and a higher frequency of installment payments (usually weekly or bi monthly). Though the cost structure of such a model is higher, it ensures the high repayment rates that microfinance loans are reputed for (Besley and Coate, 1995:1-18 and Armendariz de Aghion, 1999: 79-104).

A better understanding of transaction costs – an important determinant of costs of an MFI - would be useful in evolving strategies to reduce lending costs in a sustainable manner.

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<sup>1</sup> Published by the Microfinance Information eXchange

<sup>2</sup> Computed as Operating revenue / (Financial expense + loan loss provision expense + operating expense)

## **REVIEW OF RELEVANT LITERATURE**

### ***Literature From India***

Puhazhendi (1995) and Srinivasan and Satish (2000) studied the microcredit programme of the nationalized commercial banks in India and concluded that the intermediation of non governmental organizations (NGOs) and self help groups (SHGs) in the credit delivery system reduced the transaction costs of both banks and borrowers. Tankha (2002) concluded that group formation costs are impacted by the number of groups handled by one field worker, transport costs, training costs and regional differences in average staff salaries due to differentials in local wage structure. Karduck and Siebel (2004) studied transaction costs of borrowers and concluded that weekly as against monthly meeting schedules increases transaction costs by 34%. The Microcredit Ratings International Ltd (M-CriI) Microfinance Review 2003 (revised February 2004) mentions that the cost per borrower for the Indian MFIs is on an average 12.2 US\$. All the group lending models incur more than half of total operating expenses on salaries.

### ***Other Literature***

Llanto and Chua (1996) studied the transaction costs of two Philippines based NGOs. They concluded that there is an inverse relationship between an organisation's transaction costs and its number of years in existence. Motivation and retention of NGO staff were critical for transaction costs. Gonzalez-Vega et al (1997) studied the transformation of BancoSol from an NGO MFI to a licensed commercial bank. The ratio of total costs to average number of loans outstanding increased from US\$ 149 (1992) to US\$ 242 (1994). Most of this increase came from higher cost of funds, but the ratio of operational costs to the average number of loans also increased from US\$103 to US\$ 135. One reason was that the transformation was accompanied by an increase in the number of branches from 4 to 32. The increased investment in infrastructure, monitoring and communication systems, and additional staff did not immediately generate sufficient number of loans. BancoSol compensated by increasing the revenue generating capacity of each loan by increasing loan sizes and increasing maturities.

## **CONSTRUCT DEFINITIONS**

### ***Transaction Cost***

Transaction Cost is defined as being composed of two components, direct and indirect.

#### **Direct transaction cost**

This is defined as the cost of the transactor (usually the field worker) doing the group loan transaction. Its three main components are: group formation costs, cost of direct administrative activities and cost of monitoring.

Cost of group formation and training is defined here as the cost of formation and training of the group with the objective of using it to deliver credit.

Cost of direct administrative activities comprises cost of appraisal, documentation, disbursement, other direct admin activities and the cost of branch manager supervision. Cost of appraisal is the cost of processes for appraising/ grading the group before sanction of loan. Cost of documentation is the cost of documents and completion of documentation formalities relating to the loan. Cost of disbursement is the cost of completing formalities relating to disbursement of funds. Cost of other direct administrative activities is the cost of time spent by the field personnel in completing administrative formalities such as report and format completion, reporting to immediate supervisor (usually the branch manager), filling up movement registers and filling up expense claims for travel and bank related duties. Since the branch manager closely supervises the entire loan process and in many cases also helps in appraisal / documentation / disbursement, the allocated (per loan) supervision cost of the branch manager is also included.

Monitoring cost is the cost of loan utilization checks and collection of installments. It was inferred from the field staff that additional time is spent with a group only if there was a problem / potential problem in the group – this varied from case to case. The cost of “avoiding default” is not taken into account in the study.

#### **Indirect transaction costs**

While direct transaction costs capture the human resource cost of the branch, there are other costs of the branch such as rent, electricity and facility maintenance, which also need to be allocated. Further there are regional offices and head offices, which do not do direct business but supervise the branches - which also needs to be taken into account. Indirect transaction cost basically includes allocated fixed costs of the branch office, regional office and head office. However depreciation and taxation costs have not been included since these would make the results between MFIs less comparable.

#### ***Method Of Expression Of Costs***

The various costs have been calculated for the first year of formation of a group and expressed as a percentage of the typical first loan given. Costs have also been expressed on a life cycle basis. It is observed that most groups do not break up after the first loan but are in existence for a longer period of time and avail several repeat loans. Life cycle is the length of time that the groups are commonly in existence and life cycle costs are taken as a percentage of the typical loan amounts given over the life cycle. MFI personnel at different levels estimated the length of time that groups are commonly in existence. Similarly typical loan amounts given by each MFI in each loan cycle were arrived at based on discussions with MFI. The cost of a repeat loan is assumed to be similar to the cost of a first cycle loan except that the costs of group formation and training are absent. The difference in other costs such as collection and administrative costs was not observed. Interviews with field personnel also confirmed that the difference might be very minor or absent.

In order to calculate the life cycle cost of a loan, the following method was adopted: The present value (PV) of the costs and that of the loan amounts were calculated. The PV of costs was expressed as a percentage of the PV of the loan amount. For purposes of calculation of PV a discount rate of 8% p.a. was applied as that was approximately the prevailing cost of funds of the MFIs studied.

## **RESEARCH METHODOLOGY**

### ***Research Method***

Since the objective of the study was to gain in-depth insights based on observations and discussions on the processes being followed within each organization, the case study method was used. A questionnaire-based survey may have covered a larger number of organizations but the quality of data may have been dubious since the details about time being spent on each activity would have been entirely self-reported. The advantage of case research is that it can delve more deeply into motivations and actions than structured surveys (Yin, 1994).

### ***Sample Characteristics***

Three established MFIs mainly engaged in microcredit – using group lending model- were studied. Rosenberg (2002) mentions that most MFIs tend to capture most of their economies of scale by the time they reach about 5,000 to 10,000 clients. All the MFIs studied had more than 10,000 clients each.

### ***Selection Of MFIs***

One MFI in North India and two MFIs in South India were selected. As per data from Sa-dhan (Industry Association of Community Development Finance Institutions in India), South India is where 70% of Indian microcredit takes place.

The MFI chosen in North India is one, which works in a state, which ranks low on human development indicators while the MFIs in South India are in a state with high human development indicators. The two MFIs are located in the same state but have reported different costs per borrower. Hence the two MFIs when studied together could give us insights into possible reasons why there is variation in cost structure among MFIs.

### ***Selection Of Branches Within MFIs***

In each MFI at least two branches were studied to ensure width of coverage. They, according to the senior officials of the MFI were “typical branches” whose cost structure could be taken as being representative of the category they were in.

In MFI 1, which functioned mainly in rural areas, there were two models: one with 5 member groups and another with 14-20 member groups; hence one of each kind was studied. Since MFI 2, functioned in semi-urban and rural areas, one semi-urban branch and one rural branch were studied. In MFI3, which functioned mainly in semi-urban areas, a typical mature branch was studied. In addition, two branches started less than a year ago were studied. While both branches were started at around the same time, one

was in an area where there was no competition and the other in an area where there was intense competition.

### ***Method For Estimation Of Costs***

#### **Direct transaction cost**

In MFI 1 and MFI 2, a field worker was paid a fixed salary on a monthly basis; hence the cost of that salary was allocated to different activities, depending on the time he/she spent on them. In addition to the fixed salary, an incentive for particular activities such as group formation and monitoring was also paid, and it was added to the salary component in calculating the cost of that activity. In MFI 3, a field worker did not earn a fixed salary but was paid a fixed component for each activity that he/ she does. In this case, the fixed payment for the activity is the cost of that activity.

The details regarding compensation levels were obtained from senior officials in the MFI. The time spent on each activity was based on observations by tracking field workers, interviews with field personnel and employee logs.

#### **Indirect transaction cost**

Fixed costs were allocated on a per loan basis over the tenure. The fixed cost allocation was done at all levels, branch, regional office and head office, since these offices have been primarily set up to oversee microcredit.

Data on the profiles of the MFIs and their branches have been obtained from senior MFI officials.

## **TYPICAL PROCESSES IN AN MFI**

### ***Village Selection***

The branch manager does a village survey and thereafter selects certain villages where there is scope for promotion of groups. A number of village meetings are conducted in the selected villages.

### ***Group Formation And Training***

After a number of meetings, one or more groups are formed. Each MFI has its own norm for the number of members in a group. A number of MFIs have a norm of 5 members per group. Each group usually has two leaders. On forming a group, the field worker commences training of the group members and the group leaders. On completion of the training, a Group Recognition Test (GRT) is held. As part of the GRT there are visits to the residences of the members. The field worker's supervisor may also be involved in the GRT. The members are tested on MFI principles taught during the training.

### ***Monitoring And Collection***

The field worker after disbursement makes loan utilization checks (usually one or more depending on the MFI norms). The loans are usually for a period of 50 to 55 weeks with weekly collections. Hence the groups meet every week.

### *Schedule Of Field Workers*

Most group meetings are held in the early morning hours. Each field worker has a schedule of group meetings to attend in the mornings. Thereafter he/she goes to the office to complete the administrative tasks. The evenings are kept for fieldwork, either to form new groups or to provide training to newly formed groups.

### **TRANSACTION COST ANALYSIS**

	<b>MF11 (North India Based)</b>	<b>MF12 (South India Based)</b>	<b>MF13 (South India Based)</b>
Differentiating factor among branches studied	A: 5 member group B:14 member group	A: Semi-urban B: Rural	A: Mature Branch B: New Branch in competitive environment C: New branch in non competitive environment
A: First Year Group Formation Cost	Branch A 2.0% Branch B. 1.3%	Branch A: 0.6% Branch B: 0.7%	Branch A 0.2% Branch B:0.4% Branch C:0.8%
B: First Year Administrative Cost	Branch A: 1.8% Branch B:1.3%	Branch A: 0.8% Branch B: 0.9%	Branch A 0.5 % Branch B:0.5% Branch C:0.5%
C: First Year Monitoring Cost	Branch A: 2.3% Branch B:1.1%	Branch A: 1.0% Branch B: 1.0%	Branch A 1.2% Branch B:1.3% Branch C:1.7%
D: First Year Total Direct Transaction Cost (A+B+C)	Branch A: 6.2% Branch B: 3.7%	Branch A: 2.4% Branch B: 2.6%	Branch A 1.9% Branch B:2.1% Branch C:2.9%

	<b>MF11 (North India Based)</b>	<b>MF12 (South India Based)</b>	<b>MF13 (South India Based)</b>
E: First Year Total Indirect Transaction Cost	Branch A: 5.1% Branch B: 4.4%	Branch A: 1.8% Branch B: 1.6%	Branch A 1.3% Branch B: 4.2% Branch C: 5.7%
F: First Year Total Transaction Cost (as % of first loan) (D+E)	Branch A: 11.3% Branch B: 8.1%	Branch A: 4.2% Branch B: 4.2%	Branch A 3.2% Branch B: 6.3% Branch C: 8.6%
G: Life cycle transaction Costs (as a % of loans given over life cycle)	Branch A: 7.0% Branch B: 5.0%	Branch A: 1.6% Branch B: 1.6%	Branch A 1.8% Branch B: 3.6% Branch C: 4.7%

### ***Direct transaction cost***

A major proportion of direct transaction cost goes towards compensating the field worker. It is found that MFI 1, which works in a difficult location, has to pay a higher compensation level for its employees.

When the field worker compensation does not have a fixed component, the MFI incurs the same cost for a particular activity irrespective of the time taken by the field worker to perform the activity. This may result in field workers being more productive as it is in their interest to reduce the time spent on the various activities. This could be one reason for MFI 3 having lowest first year direct transaction costs. However in difficult locations it may be difficult to attract employees in case there is no fixed component due to the uncertainty involved in forming groups.

In cases where there is a fixed component to field worker compensation, the more the number of members the field worker handles, the lower the cost. In the case of MFI 2, a field worker handles around 500 members as against MFI 1, where a field worker handles around 220 members. However, the population density of the region dictates the number of members that a field worker can handle. When groups are spread out over wider areas, the field worker can only handle fewer groups than when they are clustered together.

Group formation time is lesser in areas where there is greater awareness about micro credit. This can be observed from the time taken for group formation in semi-urban areas vis a vis rural areas in the case of MF1 2, and from the comparison of the two new branches in MF1 3.

It is found that the single activity that contributes the maximum to direct transaction cost is collection. In all the MFIs the field worker effectively has only a couple of hours in the morning and couple of hours in the evening for field work – these are the times when the borrowers / potential borrowers can be reached. During the day the field worker is supposedly engaged in administrative activities in the office, but it is not clear if the time is effectively utilised.

#### ***Indirect transaction cost***

Indirect transaction costs are linked to the number of layers of fixed costs in the system. The benefits of fewer number of layers is obvious from the study of MFI 1, where the model having fewer number of layers had lower indirect transaction costs. Indirect transaction costs may be marginally lower in rural areas, as is clear from MFI 2. The study of MFI 3 clearly illustrates the benefits of mature branches since the fixed cost is allocated over more number of loans.

#### ***Life cycle transaction cost***

As may be expected, for all the three MFIs the transaction costs are lower when viewed on a life cycle basis as compared to the costs in the first year of giving the loan. This is because the first year costs include group formation and training costs, which are not incurred in the subsequent years.

The benefit of having a longer life cycle for the group from the cost perspective is evident from the comparison of MFI 2 and MFI 3. MFI 2 has a higher first year transaction cost than MFI 3; however, the situation reverses on a life cycle basis since the expected life of a group for MFI 2 is eight years as compared to four years in the case of MFI 3.

### **IMPLICATIONS FOR MFIS**

#### ***Direct transaction cost***

##### **Field worker productivity**

MFIs may not have much leeway on compensation levels since they are dictated by the market to a large extent. One important way to increase number of groups per field worker and reduce conveyance costs is to have higher number of groups per square kilometer. This means that MFIs must aggressively look at increasing the intensity of coverage of a particular village before spreading to neighboring villages. Increasing the number of groups may require some flexibility in the working hours of the employees. For example, in case there are some potential borrowers who work in distant places and are free only on Sundays, group meetings should be held on Sundays for groups of such borrowers.

Since most of the fieldwork is done in the early hours of the morning or in the evening, the field workers should be trained to do other tasks such as accounting, data entry and audit of other branches during the day. They should also be encouraged to systematically collate daily the data gathered during the field visits, which should be built up as a database within the MFI. The data would be available even in case of

employee turnover. MFIs could also look at sharing such data for a fee with companies interested in rural markets.

**Employee incentives based on profit.**

Most employee incentives are linked to the number of new groups formed or number of groups monitored. Instead, linking incentives to profit from portfolio of clients would make the employees more cost conscious.

**Collection costs**

Collection costs being the largest contributor to costs, MFIs need to examine if the same repayment rates can be achieved by switching over to fortnightly repayment schedules, thereby halving the collection costs.

***Indirect transaction cost***

**Minimal Layers of fixed costs**

MFIs need to ensure that there are minimal layers of fixed costs in their system.

**Branch viability**

In order to be more viable, branches need to engage in other activities such as individual collateral based loans, insurance products and other products. While there may be initial costs involved in training the personnel to handle the new products, branch viability can be increased in the long run. Since MFIs already have a good presence in the villages, they could also look at becoming agents of general and life insurance companies, credit card companies and mutual funds, which could be offered to even those who are not customers. Insurance companies in particular would be interested in using their services since they also have to statutorily meet rural targets.

**Alternatives to the Branch Model**

MFIs could have mobile branches which function at a particular location on a particular day of the week so that field workers working in the area can report to the office on that very day and complete their administrative tasks. Fully equipped vans can make excellent mobile branches; MFIs are thus saved the cost of setting up branches in each location.

***Life Cycle Transaction Cost***

While it is clear that the longer the time period for which a group lasts, the lower the transaction costs on a life cycle basis, MFIs need to examine if there is variation in asset quality with age of the group. This could enable them to arrive at estimations of life cycle cost including the default cost.

MFI should also take into account the life cycle cost when pricing the loans. Merely looking at first year costs may result in overpricing of loans, which may have the effect of driving away some good borrowers. (Armendariz de Aghion and Morduch 2005)

## **IMPLICATIONS FOR POLICY MAKERS**

The Government needs to take into account transaction costs when examining the interest rates charged by microfinance institutions. Regional variations in transaction costs - higher in less developed areas - indicate that a uniform cap on interest rates may in fact drive away MFIs from difficult locations

Since group formation time and consequently group formation cost is lower in areas where awareness about microcredit is high, the MFI industry would benefit if there is a campaign spreading basic awareness about the concepts of group microcredit in remote areas through local print / radio media. The costs of this campaign could perhaps be borne or shared by the Government.

## **LIMITATIONS AND SCOPE FOR FURTHER STUDY**

Generalisations based on the case studies should be done with caution. The study is cross sectional and hence reflects the costs that during the period March-December 2005. The effects of inflation have not been considered in projecting costs.

Since increase in number of members reduces transaction costs significantly, experimental research on optimal group size - which minimizes transaction cost without sacrificing asset quality - would be useful.

Collection contributes to the highest cost; therefore studies on the efficacy of fortnightly repayment schedules would be useful.

While it is clear that the longer the time period for which a group lasts, the lower the transaction costs on a life cycle basis, further research needs to be done on variation of asset quality with age of the group. This would enable conclusions to be drawn on whether extending the life of the group, is useful when default costs are also included in the analysis.

## **CONCLUSION**

Existing literature indicates that transaction costs are a major contributor to high interest rates on microcredit loans. Hence a study using the case study method was done to examine the transaction costs of three established microfinance institutions.

Direct, indirect and life cycle transaction costs were examined. The results of the study indicate that the key drivers of direct transaction costs are field worker compensation and number of groups handled per field worker. While the market dictates the compensation level; geography and density of population dictate the number of groups handled per field worker. Group formation time is found to be less in areas having greater awareness about microcredit. Collection activity is the single largest contributor to direct transaction cost.

Based on the above findings, implications are drawn for MFIs. It is suggested that MFIs in order to reduce direct transaction costs should increase the number of groups per square kilometer, as this will save both field worker time and conveyance cost. MFIs should examine the possibility of reducing the collection frequency and the impact it could have on repayment. The ways in which field worker

productivity could be improved are by utilizing them better during the day hours when they are not in the field and linking their incentives to profit from their portfolio rather than merely to number of groups formed and repayment levels.

The key drivers of indirect transaction cost for an MFI are number of layers of fixed cost in the MFI system, geographical location of the MFI and proportion of mature branches. In order to reduce indirect costs, MFIs should minimize the number of layers of fixed costs in their system. It is also suggested that MFI branches examine alternative revenue generating activities that can be undertaken with minimal incremental costs. MFIs should also look at alternatives to the branch model.

Lifecycle transaction costs are found to be lower than first year transaction costs. MFIs need to examine life cycle costs including default costs over the group life cycle and take these into account when pricing loans.

The study also has implications for policymakers. Policymakers need to take into account transaction costs when examining the interest rates charged by microfinance institutions. The regional variation in transaction costs that the study has found is an important factor that suggests that no uniform view can be taken on the rates charged by MFIs in different regions. In order to spread microcredit to newer areas, Government funded information campaigns could help in bringing down group formation costs thereby attracting MFIs to these areas.

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