

## Group Lending Model - A Panacea to Reduce Transaction Cost?

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**Abstract:** *Microfinance institutions (MFIs) have stepped up towards commercialization and sustainability yet they face challenges in terms of transaction cost that limit their growth prospects. Transaction cost is incurred in forming the group of members, searching for the potential clients, monitoring, and administration, in providing training to the clients etc. Group lending has emerged as an effective tool in reducing this cost by transferring its burden on the group. Though the concept of group lending is not new in micro finance but in India it was introduced by NABARD in 2004-05 owing to its key advantage of income generation. This paper aims to analyze whether group lending programme has some role to play in reducing transaction cost of MFIs. It also discusses the concept of transaction cost, characteristics of group lending as well as process of forming a group. The results reveal that internal management of small and medium MFIs is not working efficiently which results in increased costs. Large MFIs do not face such problems.*

**Keywords:** Micro Finance Institutions; Transaction cost; Joint Liability Group

**JEL Classification:** O, O1, O10

### Introduction

The formal financial institutions like Commercial Banks, Regional Rural Banks, and other institutions are hesitant in providing loans to poor as the latter carry high risk of non-repayment and are incapable of pledging any security against the loans provided. Such a resistance on the part of formal institutions necessitated the establish-

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ment of MFIs in India. The period of 1990s saw the emergence of MFIs intended for the sole purpose of providing loans to the poor through group lending system which acted as a substitute for collateral. Micro finance institutions provide both credit and non-credit products and are capable of reaching out to the vast section of poor people. MFIs have been taking progressive steps towards commercialization and sustainability. But they still face many impediments in terms of cost incurred in providing services to poor and this affect their efficiency and outreach<sup>1</sup>. One such cost is transaction cost. The cost can be defined as the cost of transferring resources between markets or between participants in the same market. In the field of finance, transaction cost refers to the resources required to transfer one unit of currency from the saver to a borrower, and recover that unit of currency at a later date with some agreed interest. Three types of costs are usually incurred by MFIs, namely, (i) in providing loans, (ii) on default, (iii) transaction cost. Transaction cost comprises the cost of identifying and screening the clients, processing the loan applications, completing the documentation, disbursing the loans, collecting repayments and following up the non-repayment (Savita Shankar, 2006).

Each Micro finance institution operates under one of three models of microfinance, namely, self- help group, joint liability group, and individual lending. Unlike self-help group, under which the sole motive to provide credit is to achieve self-sustainability, JLG model helps clients to generate permanent source of income. Though individual lending is better model than SHG and JLG yet it suffers from the problem of increasing transactions costs with each lending. Under JLG model, this problem can be handled by transferring the burden on the group members.

Through group lending, MFIs can transfer transaction cost on group that ultimately choose their own partner by gathering information about them and monitoring them. Different countries have adopted different versions of group lending programme best suited to their domestic environments. For instance, the solidarity group developed in Bolivia's BancoSol or village bank in Africa, Latin America, and Asia. In India, MFIs provide loans through Joint Liability Group which is a replica of Group Lending Programme of Grameen bank, Bangladesh. In India, Joint Liability Group was introduced in 2004-05. Joint Liability Group is an informal group that comprises of 4-10 members who receive loans from the bank on the basis of group mechanism against mutual guarantees<sup>2</sup>. Members of JLG take up different types of economic activities mainly for income generation that uplifts their financial status and welfare. The problem of default is handled through their group lending system in which the entire group is denied any future loans till they repay the existing one. Further, Transaction costs in JLG are subjected to adverse selection, moral hazard, auditing cost and enforcement problem.

Section II of the paper discusses group formation methodology as well as basic concepts of transaction cost and group lending. Section III of the paper is associated

with objective and methodology. Lastly, Section IV discusses the result of the paper as well as limitations of the study.

## **Basic Concepts and Group Formation Methodology**

**Joint Liability Group model of Microfinance Institutions:** Most of the microfinance institutions use Joint Liability Group model to provide micro finance to their clients. In this model, Compulsory Group Training (CGT) is conducted by the field staff to impart their clients with the knowledge about the nature of products, rules and regulations, policies and procedures and enable them to access the financial and social products. To enquire their knowledge levels, post training a Group Recognition Test (GRT) is conducted. This procedure helps the MFI staff in identifying the group of members who are interested in taking responsibility of each other and their credit absorption capacity. The detailed process of forming the group is as follows:

The group lending process is segmented into five key phases: (1) Client Recruitment & Application, (2) Compulsory Group Training & Group Recognition Test, (3) Group Loan Approval, (4) Disbursement & Customer Service, and (5) Collections & Recovery<sup>3</sup>.

The first phase is Client Recruitment & application- In this phase, the information relating to different products is given to the clients in a simple and easy to understand language as most of them are either illiterate or less educated. The marketing materials, like pamphlets, of MFIs explicitly specify the eligibility criteria for getting loans, contact information, and instruction about how to register complaints, form groups and identify safe borrowers. Clients are well informed beforehand about the full cost of the products, interest rate, fees, terms, and condition of the loan including necessary documentation, any compulsory program, use of clients' savings in the case of credit default, and use of clients' data etc. The group guarantees mechanism helps in forming a group with reliable members. Members are made fully aware of their rights and responsibility, attendance, group behavior etc. if payment is delay, what is the process of loan recovery, results of over-indebtedness through distribution of pamphlets. While applying for group loans, they are provided all the information about the client consent forms and what liabilities they have to bear after signing it.

The second phase deals with the process of the application for and approval of loans. The field staff conducts Compulsory Group Training (CGT), Group Recognizing Test (GRT) and visits the clients personally. CGT is conducted to acquaint clients with the information regarding loan products, filing complaints, importance of book entries, procedure of loan approval, evaluation of creditworthiness, learning about the repayment capacity of potential borrowers, handling the unethical behavior of staff, etc. The leader of the group is provided with special training to impart in him the skills related to cash management, to solve members' disputes, to manage

members cordially, multiple borrowings' policy of the MFI, handling of the members' grievances, etc. The staff indulges in explicit communication with the households regarding their current loan debt, product terms and conditions, verification of the assets claimed by them. This exercise helps the MFI to evaluate the repayment capacity of the borrowers. GRT is conducted to ascertain the understanding levels of the clients regarding the products and services, benefits, institutional policies and procedures, disciplinary issues and their responsibilities as a group member.

Phase three includes the task of financial analysis and data management. Though MFIs ignore the over-indebtedness of the clients, they make sure that the loan is given after considering the group guarantees mechanism and capacity to pay.

Phase four is related with disbursement of loans and customer services. MFIs verbally review important account information before opening a new account. The clients are provided with the documents that contain the information about rights and responsibility of the clients, groups and MFIs, repayment schedules, grievance redressal and collection practices. The clients are regularly updated with new information regarding changes in the above mentioned documents, if any.

The fifth phase is related to the collection and recovery of loans. Collection methods are always mentioned in the loan contracts and thus, clients know how these methods work well before the approval of loan. The provision for counseling of the defaulters is also present which helps such clients with the difficulties faced in repayment. The group leader also helps the MFIs in this process and it is assured that no force or any kind pressure is exercised.

### **Dimensions of Transaction Cost**

Transaction cost reflects the economic costs that organizations incur both internally and externally and is a way of measuring the efficiency of different institutions in a particular environment<sup>4</sup>. Transaction cost is incurred by the way of group development costs, administrative costs and monitoring costs. Group development cost is incurred in innovating new products, training the clients, supporting group formation, etc. However, the proportion of cost incurred in training the clients is more in comparison to other factors since MFIs have to hire consultants for this purpose which doubles their costs. Secondly, MFIs incur administrative costs on debt collection, in appraisal and documentation of client's loan application, in identifying and screening the clients and scrutinizing the potential clients. Further, administrative costs includes the cost of loan appraisal<sup>5</sup>, documentation<sup>6</sup> (report and format completion, disbursement, filling up expense claims for travel, bank related duties) and supervision (reporting to immediate supervisor, filling up movement registers). Finally, monitoring cost is incurred in visiting the clients' premises regularly, as compliance costs in

acquiring information and making agreements accordingly, formulating policies for enforcement and loan recovery investigation and regular disclosure of their periodical reports.) Monitoring costs includes cost of loan utilization checks and collection of installments<sup>7</sup>. In addition to the above costs, MFIs also bear transaction costs in designing credit contracts, engaging in screening of members of the group, assessing project feasibility, evaluating loan applications, providing credit training to the staff and borrowers, and monitoring and enforcing loan contracts (B. Natamba, et.al 2013). Transaction cost comprises both direct and indirect costs. While direct costs imply cost of screening and scrutinizing the potential clients, forming, administrating and monitoring the group lending program and, indirect costs are associated with rent, electricity and facility maintenance (Savita Shanker 2006). Since it is difficult to measure indirect transaction costs, certain proxies like uncertainty, transaction frequencies, asset specificity, opportunism, etc are used to quantify the same. High average costs are borne by MFIs even for the small-sized loans making it hard to achieve efficiency, outreach, and financial viability.

### **Role of Group Lending**

Transaction cost is a part of all costs borne by MFIs. Some of these costs are the product of asymmetric information (adverse selection and moral hazard) on the part of these institutions, enforcement and auditing processes. MFIs follow a screening mechanism to identify the potential clients and accordingly design an optimal loan contract to reduce the risk involved. The difficulties faced in acquisition of information related to the clients have led MFIs to choose their members for the group all by themselves. This helps in mitigating the risk of default since clients possess more accurate information about their member partners than MFIs. Further, knowing the fact that all members share the equal liability to repay on default, it leads clients to choose good risk members. Moreover, the screening mechanism helps the MFIs in identifying the low risk and high risk borrowers. The low risk borrowers opt for group loans with low interest rates and high risk borrowers opt for individual loans bearing high interest rates. Penalties are also imposed on the group if they default deliberately. In case of full information, risky borrowers are not chosen<sup>8</sup>.

Though different norms of joint liability model help in mitigating the risk of non-repayment yet the prevalence of asymmetric information make it difficult to identify potential borrowers in the first place. The contractual arrangements don't work because the borrowers are too poor to be imposed upon with financial sanctions by MFIs. Thus, the provision of joint liability can achieve better screening to contend with adverse selection, encourages peer monitoring to reduce moral hazard, gives group members incentives to enforce the repayment of loans, and reduces the lender's

audit costs for cases where some group members claim not to be able to repay<sup>9</sup>. Social collateral too acts as a backup plan for enforcing repayment.

In group lending system, it is the clients who bear the cost of screening the potential group members, group formation, negotiation with the lender, filling out necessary paperwork, transportation of and from the lending agency, time spent on project appraisal and meetings, monitoring group activities, and enforcing group rules<sup>10</sup>. Following this model works in favor of MFIs as the burden of cost is shifted onto the members of the groups.

### **Role of Group Leader**

One of the members from the group is appointed as the group leader—a position for which anyone from the group can volunteer. The group leader may have different tasks to perform. Group leader's responsibilities give him/her an advantage in acquiring information regarding the reputation, effort levels, indebtedness, wealth, and other related aspects of the rest of the group members. Because the leader has to function as the group's representative and update the loan officer about any repayment difficulties, this could also intensify his/her incentives to enforce repayment. Apart from this intermediary effect, there may also be pressures arising due to the size of the leader's liability. However, the group leader usually is the intermediary between the group and the program staff, who regularly reports to the program's staff on the performance and sustainability of the group. Moreover, the group leader usually chairs group meetings, collects the installment payments from group members and transfers them to the credit officer, visits group members regularly and discusses business- and/or group-related problems, and calls for extra group meetings if repayment problems occur. Again, depending on the characteristics of the group lending program, group leaders may or may not be paid for their activities<sup>11</sup>.

If being a leader does not confer any financial privileges, why would a borrower volunteer to be a group leader? There are four possible answers to this question. Firstly, in some cases, a member becomes a leader simply because someone has to fill this position implying that being a group leader is not purely voluntary. Secondly, becoming a group leader is seen to be a way of gaining social status within the group, among the pool of borrowers at the microfinance institutions, and within the staff of the microfinance institution. The fact that the group leader interacts and coordinates with group members, deals with the staff of the microfinance program, and may meet with other group leaders can be a source of happiness and pride for him/her. Thirdly, in some cases, the person who becomes the leader is the same person who has introduced the group lending program and its benefits among the members of the group. He/ she naturally become the obvious choice. Fourth, a member may volunteer for

leadership to guarantee good repayment. Repayment of the current loan is necessary for the group in order to get the next group loan. If one member is concerned about possible repayment difficulties, this member may volunteer for leadership if she thinks she has the right attributes that help in improving group repayment<sup>12</sup>.

## Objectives and Methodology

The objective of the study is to analysis the role of group lending in reducing transaction cost of the MFIs.

The time period of the study is from 2011-12 to 2014-15 and secondary data is used to conduct it. The data is acquired from the “Microscope Issue 2014-15” published by Micro Financial Institutions Network. In order to analyze the relationship between transaction cost and efficiency of MFIs we have used multiple regression model. To run multiple regression, SPSS software version 20 has been used in this paper. Administrative expense and personnel expense, that define the transaction cost, are taken to be dependent while Operating Self-Sufficiency (OSS), Clients per Employee (CPE), Clients per Loan Officer (CPO), Clients per Branch (CPB), Gross Loan Portfolio per Employee (GPE), Gross Loan Portfolio per Branch (GPB), Gross loan portfolio per officer (GLPO) being the independent variables are used as the indicators of the efficiency and productivity of a MFI. Among the independent variables, Operating Self-Sufficiency indicates the financial efficiency and the remaining variables are the indicators of the staff productivity in the MFIs. Productivity of the staff has a positive impact on the Operational Self Sufficiency. Clients per loan officer represent number of active clients on per loan officer who is field officer. As CPO increases to the optimal levels it reduces the transaction cost of the MFIs. Clients per employee indicate the efficient working of the internal management in the MFIs. The extent of transparency and the use of appropriate strategies in extending loan define this efficiency. Other indicators GPB, GPLO and GPB indicate that available loan amount managed by employee and officer for disbursement. Personnel expense includes the staff salaries, bonus, benefits or staff expense while administrative expenses includes specialized training to their existing employees. Microfinance Institutions are categorized as small, medium and large MFIs on the basis of Gross Loan Portfolio<sup>13</sup>.

In the first step, a linear regression is performed individually on each variable. In the next step, to run multiple regression, the variables with higher values of  $R^2$  were selected. Variable showing second next high R square is then added to the selected variables to check for the improvement in the value of  $R^2$ . The process is continuously repeated until those variables which have majorly contributed in explaining transaction cost are obtained.

In the study, linear regression is used with mathematical form of:

$$Y_1 = \beta_0 + \beta_1 X \quad (1)$$

$$Y_2 = \beta_0 + \beta_1 X \quad (2)$$

Where  $Y_1$  refers transaction cost of the MFIs i.e. Administrative Expenses;  $X$  represents independent variables and beta is related with Administrative Expenses.

$Y_2$  also represent transaction cost of MFI in terms of Personnel Expenses;  $X$  refers independent variables and beta is associated with personnel expenses.

In next step, multiple regression is used with mathematical form of:

$$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k \quad (3)$$

$$Y_2 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k \quad (4)$$

Where  $Y_1$  represent transaction cost of the MFIs i.e. Administrative Expenses while  $X_1, X_2, X_3, \dots, X_k$  represent independent variables such as OSS, CPE, CPO, CPB, GPE, GPB, and GPLO and beta is associated with Administrative Expenses.

Where  $Y_2$  represent transaction cost of the MFIs i.e. Personnel Expenses while  $X_1, X_2, X_3, \dots, X_k$  represent independent variables such as OSS, CPE, CPO, CPB, GPE, GPB, and GPLO and beta is associated with Personnel Expenses.

The Hypothesis of this study is as follows:

$H_0$ : There exists a relationship between transaction costs and the independent variables selected for the study.

In this study, the presence of multicollinearity among the independent variables is also tested using Frisch's Confluence Analysis (or Bunch-Map Analysis).

After performing multiple regression, it was found that three out of seven variables were superfluous. These variables are:

In case of small MFIs: in the context of administrative expenses- CPB, CPE, OSS  
in context of personnel expenses- CPE, CPO, CPB

In case of medium MFIs: in context of administrative expenses- CPO, CPB, OSS  
in context of personnel expenses- CPB, CPE, OSS

In case of large MFIs: in context of administrative expenses- GPE, CPB, OSS  
In context of personnel expenses- OSS, GPE, GPB

Hence, these variables were dropped to avoid the problem of multicollinearity.



## Results and Discussion

The results of this study are illustrated in six tables. For small, medium and large MFIs, Tables 1 to 3, contain results for personnel expenses and table from 4 to 6 contain results for Administrative Expenses for the same. The results show that the value of R square is 1. This implies that the independent variables fully explain the variation in the dependent variables of this study.

Seven independent variables were selected to conduct this study, namely, Operational Self Sufficiency (OSS), Clients per Employee (CPE), Clients Per Loan Officer (CPO), Clients per Branch (CPB), Gross loan portfolio per Employee (GPE), Gross loan portfolio per officer (GLPO), Gross loan portfolio per branch (GPB). Out of these variables, only four variables have the most effect on transaction cost for all small, medium and large MFIs. However, these four variables are different for every category of MFIs.

Table 1 and 4, for small MFIs show that Administrative Expenses are highly affected by GPB that is reducing transaction cost and with increase in GPE transaction cost is increases. Other variables such as GPLO and CPO also contribute in reducing Transaction cost but effect is minor. Whereas in terms of personnel expenses small MFIs is experiencing positive effect in terms of GPB and GPE where GPB has large impact while GPLO and OSS have minor effect in increasing transaction cost.

Table 2 and 5, for Medium MFIs; shows that GPLO, GPE and CPE have negative impact on Administrative Expenses but GPB has contributed more in reducing Transaction Cost. On the other hand, with increase in GPB, GPE and CPO, Personnel Expenses also increases where GPB have more effect. Only GPLO has contributed in reducing transaction cost.

For large MFIs, Table 3 and 6 shows that with increase in GPLO, administrative cost reduces while with increase in GPB, AE increases. This shows that large MFIs are expanding their operations and largely focusing on hiring professionals to train their staff as well as clients. In terms of Personnel Expenses, all variables have minor effects on transaction Cost. Out of these, increase in GPLO and CPO reduces transaction cost of large MFIs. This shows that large MFIs have efficient internal management. It also implies that large MFIs are expanding their operational areas, get large amounts of funds from national as well as international sources due to strong credit ratings, conducting training programmes, etc. which leads to higher transaction cost.

Finally, it can be interpreted from the results that the efficient size for operation of MFIs is medium size. Since small MFIs suffers from technological constrains, less funds at disposal, low level of training of the staff, internal mismanagement, poor credit ratings etc., they fail to achieve operational self sufficiency and incur higher transaction cost. The large MFIs, on the other hand, also don't qualify for the optimal

size of operations as they incur higher transaction cost owing to increased outreach and other costs.

Though the large MFIs are efficient in the technical and operational front, the factors like the provision of training to the newly appointed staff, large funds at their disposal, increasing outreach, etc., increases their transaction costs.

Table 1: Small Microfinance Institutions

Variables	Combined R Squares	Unstandardized Beta	Standardized Beta
GPLO	1	-.109	-3.739
GPB		-1.780	-1.789
GPE		.445	8.465
CPO		-.013	-2.573

NOTES: (Transaction Cost refer to Administrative Expenses in respect of independent variables such as Gross Loan Portfolio per officer (GPLO), Gross loan Portfolio Per Branch (GPB), Gross loan portfolio per Employee (GPE), Clients Per Officer (CPO)

(Table 1) Equation:  $Y = -.109(GPLO) - 1.780(GPB) + .445(GPE) - .013(CPO)$

Source: Microfinance Institutions Network. "The Micro Scape" 2014-15

Table 2: Medium Microfinance Institutions

Variables	Combined R Squares	Unstandardized Beta	Standardized Beta
GPLO	1	.005	.081
GPB		-11.385	-6.558
GPE		.459	4.614
CPE		.030	1.068

NOTES: (Transaction Cost refer to Administrative Expenses in respect of independent variables such as Gross Loan Portfolio per Officer (GPLO), Gross loan Portfolio Per Branch (GPB), Gross loan Portfolio Per Employee (GPE), Clients per Employee (CPE)

(Table 2) Equation:  $Y = .005(GPLO) - 11.385(GPB) + .459(GPE) + .030(CPE)$

Source: Microfinance Institutions Network. "The Micro Scape" 2014-15

Table 3: Large Microfinance Institutions

Variables	Combined R Squares	Unstandardized Beta	Standardized Beta
GPLO	1	-.680	-10891
GPB		9.465	8.528
CPO		.068	3.118
CPE		-.043	-1.214

NOTES: (Transaction Cost refer to Administrative Expenses in respect of independent variables such as Gross Loan Portfolio per officer (GPLO), Gross loan Portfolio Per Branch (GPB), Clients Per Officer (CPO), Clients per Employee (CPE)

(Table 3) Equation:  $Y = -.680(GPLO) + 9.465(GPB) + .068(CPO) - .043(CPE)$

Source: Microfinance Institutions Network. "The Micro Scape" 2014-15

Table 4: Small Microfinance Institutions

Variables	Combined R Squares	Unstandardized Beta	Standardized Beta
GPLO	1	1.833	11.405
GPB		-48.227	-8.782
GPE		-.948	-3.265
OSS		.252	.861

NOTES: (Transaction Cost refer to Personnel Expenses in respect of independent variables such as Gross Loan Portfolio per officer (GPLO), Gross loan Portfolio Per Branch (GPB), Gross loan portfolio per Employee (GPE), Operational Self Sufficiency (OSS)

(Table 4) Equation:  $Y = 1.833(\text{GPLO}) - 48.227(\text{GPB}) - .948(\text{GPE}) + .252(\text{OSS})$

Source: Microfinance Institutions Network. "The Micro Scape" 2014-15

Table 5: Medium Microfinance Institutions

Variables	Combined R Squares	Unstandardized Beta	Standardized Beta
GPLO	1	-.668	-5.632
GPB		14.337	4.064
GPE		.064	.317
CPO		.014	.405

NOTES: (Transaction Cost refer to Personnel Expenses in respect of independent variables such as Gross Loan Portfolio per officer (GPLO), Gross loan Portfolio Per Branch (GPB), Gross loan portfolio per Employee (GPE), Clients Per Officer (CPO)

(Table 5) Equation:  $Y = -.668(\text{GPLO}) + 14.337(\text{GPB}) + .064(\text{GPE}) + .014(\text{CPO})$

Source: Microfinance Institutions Network. "The Micro Scape" 2014-15

Table 6: Large Microfinance Institutions

Variables	Combined R Squares	Unstandardized Beta	Standardized Beta
GPLO	1	-.072	-.523
CPO		-.048	-.991
CPE		.019	.250
CPB		.002	.257

NOTES: (Transaction Cost refer to Personnel Expenses in respect of independent variables such as Gross Loan Portfolio per officer (GPLO), Clients per Officer (CPO), Clients Per Employee (CPE), Clients per Branch (CPB)

(Table 6) Equation:  $Y = -.072(\text{GPLO}) - .048(\text{CPO}) + .019(\text{CPE}) + .002(\text{CPB})$

Source: Microfinance Institutions Network. "The Micro Scape" 2014-15

**Limitation of the study:** We have grouped the MFIs into three categories i.e., small, medium and large MFIs. The efficiency of MFIs is not analyzed individually due to non-availability of data.

## Conclusion

In this paper it was found that group lending model helps in reducing transaction costs better than other models of microfinance. The group lending model eliminates the intermediary role of field officer between the MFIs and clients which perhaps helps in such reduction. Moreover, the direct link between the branch and clients help these institutions to better understand their clients' needs and improves operational efficiency. Also, incurring high transaction costs by MFIs necessitates the adoption of new and innovative techniques. Technology plays an important role in managing information system, cash handling and data capturing. Due to the low connectivity to the rural areas, MFIs resort to taking help of telecom companies and internet service providers to overcome this problem. Other devices can be used to reduce transaction cost of the MFIs such as low cost ATMs, low cost computing devices, mobile and internet based transaction platforms etc. MFIs have started using the advanced technology in their delivering methods but they still fail to reach their goal of achieving self-sustainability. There is need to build up a strong management information system to scale up the operation of the MFIs. There challenges include high cost and limited availability of existing technological solutions, lack of widely available local technical support to support Management Information System software, consumer adoption rate of technology, lack of basic communication infrastructure and inadequate policy environment. Improved technology will lead to more transparency in delivering financial services. As a consequence, low costs would be incurred and access to clients earning low income would increase. Use of Point of Sale (POS) devices and branchless banking strategies will result in reduction in personnel and administrative expenses. Biometric technology, which requires individual's unique physical or behavioural characteristics and voice pattern for confirming the identity, can also be used to lower the expenses.

These above mentioned measures, when followed, would help MFIs to lower their transaction costs and step up on the path of self-sustaining and operational efficiency.

## APPENDIX

*Adverse selection:* Considering the fact that furnishing the small-sized loans implies incurring high transaction cost, MFIs abate this cost by following the group lending model. Unlike individual model, this reduces the cost per loan. Post training, the potential clients become eligible to form their own groups after checking for their creditworthiness. This helps reducing the cost of screening the members, processing and collecting loans after maturity. Safe borrowers will ultimately end up with the safe ones since they would be more credible than the risky ones. Each member of

the group possesses the information about the creditability of the others owing to the social ties that binds them all. This further helps in reducing the risk of default in future. Due to this assortative matching, MFI offers two types of loan contracts- (i) in which safer borrowers choose high joint liability with low interest rate thus increasing the repayment rate (ii) in which riskier borrowers choose low joint liability matched with high interest rates.

*Moral hazard:* Monitoring the groups' activities after providing loans results in lowering the costs that may arise from moral hazard on the part of clients. The borrowers may take up the projects without carrying out the cost-benefit analysis. The problem of moral hazard surfaces when the loan is used for activities other than mentioned in the contract. However, ex post moral hazard relates to the strategic default, i.e., defaulting deliberately even when the current project is doing well. It may also result when one of the members default just to avoid the responsibility of other members. Though there is a provision of imposing non-monetary penalties within the groups, it is highly recommended that MFIs should also keep a check on such defaulters.

*Auditing cost:* These costs come into picture when the borrowers default intentionally. They are incurred in verifying the authenticity of the reasons behind such delinquency. Considering that in group lending model all the members bear equal liability in case of default MFIs are assured of repayment.

*Enforcement problem:* In some cases, even after auditing, the members of the groups don't repay despite of getting high payoffs from their projects. It is then when enforcement problem comes into light. The option of imposing penalties cannot be exercised on the already poor members. Hence, this problem is survived by enforcing them to repay through peer pressure and social sanctions i.e., exercising ostracism on the defaulter. Such sanctions can be more severe in close-knit poor communities where people rely on each other in their daily lives, and, to an even larger extent, in the time of distress.

## NOTES

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