Choice Between Microfinance System Operating on the Basis of Individual Liability Loan Contract or Through Joint Liability Loan Contract

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Abstract

In this paper we consider that a representative of a not so affluent rural household has three options. He (she) may join in a microfinance system operating on the basis of individual liability credit contract, or on the basis of joint liability loan contract through forming self-help group or may not participate in any type of microfinance system. This paper establishes that wealthier among the not so affluent rural household prefers to join microfinance system operating on the basis of individual liability loan contract, comparatively less wealthy prefers to join microfinance system operating on the basis of joint liability loan contract and ultra poor is less likely to join any type of microfinance system. This paper establishes that a household with high dependency ratio and higher intra-household decision making power of the head of the women of that household also influences the household to join microfinance system and in both the situations the probability of joining microfinance system operating on the basis of joint liability loan contract is slightly higher. It is also established that microfinance system fails to solve the ageing problem in rural areas because aged persons are less prone to join in any type of microfinance system.

Key Words: Microfinance, Individual liability, Joint Liability

JEL Classifications: G21, O16, P25, R21.

CHOICE BETWEEN MICROFINANCE SYSTEMS OPERATING ON THE BASIS OF INDIVIDUAL LIABILITY LOAN CONTRACT OR THROUGH JOINT LIABILITY LOAN CONTRACT

Introduction:

Microfinance is emerging as a popular instrument towards the main objective of financial inclusion to the growing share of poor households who have not yet reached directly to the bank. This is a unique method to enhance the income generating activities and to create self-employment among the poor in variety of informal ways through generating savings habit among themselves and providing them small size of credit. Microcredit program is operated either under joint-liability or under individual-liability loan contract. But in most part of the world, microfinance system is operated through group-lending program which is actually based on joint liability loan contract. Here all the group members linked by joint liability have to help through repaying the debt of any one of the group she belongs who fails to repay. Hence non-borrower co-members of the group will have to constantly monitor the borrower group-member(s). In the group lending under joint liability, that can be done most efficiently and at very minimum effort. As the lenders now have to bear fewer amounts of monitoring, she can charge low interest against loan. Another interesting factor in group lending system is that considering moral-hazard problems when the contracts are enforceable and peer monitoring is present, the borrower is not willing to take huge amount of loan rather prefers to take small amount of credit to invest in less risky project. But if the group members cannot observe each other's effort or are reluctant to punish the shirkers, then group-lending microcredit system may encourage 'free riding'. Now the group members are liable for a penalty when her co-members shirk and they cannot control that. Apart from that, there is confusion among the group members about getting credit at the time of their emergency. It is also observed that if multiple group members seek loan at a particular time, then it can not always be sanctioned due to lack of fund of the group. More over the loan size is limited by what the group can jointly guarantee. Heterogeneity in loan size can result in tension with in the group as clients and smaller loan holders are reluctant to serve as a guarantor for those with larger loans. In this situation clients dislike the tension caused by group liability. Excessive tension among the members is also responsible for voluntary dropout. To avoid this situation, during the time of group formation mainly through self-selection mechanism, positive assortative matching is observed where good credit risks come together. Thus group formation has the property that it can drive risky types out of the group otherwise some of the costs of riskiness have to be borne by all the group members instead of bank alone. So members sometimes reject close friends for fear of social sanction during the time of group formation. Some may be reluctant to borrow if information about other members is not properly available to him (her). So clients with growing business and those well ahead of their co-members in the economic activity may find that the group contract bogs everyone down. In recent years some micro lenders such as the Association for Social Advancement in Bangladesh or the Bank of Rakyat Indonesia, have expanded rapidly using individual liability loan. Even the Grameen Bank in Bangladesh has recently relaxed the group liability clause and encourage individual liability loan. In case of individual liability, each borrower is only responsible for her own loan. Here loan should be dearer, because the lender has to bear good amount on monitoring and that type of loan is comparatively more risky. But we cannot ignore micro-credit under individual liability, which looks no less successful particularly after observing the performance of Bank of Rakyat in Indonesia. Recently researchers have been interested in comparing group lending program to individual lending scheme. It is actually a neglected aspect of the research in microfinance to identify the factors which can motivate a rural household to join microfinance system operating on individual liability loan contract not under joint-liability loan contract through forming Self-Help Group.

Overview of literature:

Repayment is the only outcome of interest to the lender because of its ability to retain good borrowers. With this attract new ones is also equally important to access the overall profitability. Madajewicz (2008) established in her theoretical model that group liability loan is only desirable for the poor borrowers. In her model, below a certain level of wealth, group liability dominates individual liability. But above a certain wealth, individual liability will be preferred by rural households. More over she find that business funded with individual loans grow more than those funded with group loans. Lehner's (2008) result is quite different where he theoretically established that microfinance institutions offer group loans when size of credit is quite large. With a rather small loan size, all microfinance institutions offer individual loans. This paper is actually based from the point of view of a microfinance institution which offers individual loan as well as group loan. Empirical research on group versus individual liability borrowing has not provided policymakers and institutions the clear evidence needed to determine the relative merits of the two methodologies. The empirical literature instead has focused on related questions: which group characteristics lead to higher repayment (Ahiu, Townsend 2007). Borrowers who take individual liability loans look no different than same under joint liability when judged by repayment rates. The well behaved borrower both joint liabilities as well as individual liability has repayment rates as high as 95%. The repayment rate in each and every financial year of Bangladesh Grameen Bank and Bank of Rakyat establishes the fact. Gine and Karlan (2006) conducted a field experiment in Phillipines. They found that by offering individual loans a microfinance institution can attract relatively more clients. Yet both types of lending schemes do not differ in repayment rates. The basic question of the relative merits of group versus individual liability loan contract remains unanswered because almost all microcredit lenders offer only one type of contract either through joint liability or through individual liability and in a particular locality only one type of microcredit system is generally observable and most of the times that is through joint liability. But borrowers would be better off if he has a choice of microcredit contract between individual liability and joint liability. If that is available, then we have to identify the situation at which the borrower will choose microfinance system operating either through individual liability or through joint liability loan contract. In our investigation we will consider two separate types of microfinance institutions one is Vivekananda Sevekendra –O- Sishu Uddyan (VSSU), a microfinance institution operating on the basis of individual liability loan contract and government supported microfinance system under SGSY scheme which is operating through joint liability loan contract through forming Self Help Group mainly among the village married women. Before investigating the factors which can influence a rural household to join in any of the above type of microfinance system, initially we should require a brief idea about the operating procedure of both types of microfinance system.

Vivekananda Sevakendra–O-Sishu Uddyan (VSSU) is a microfinance institution operates the microfinance programme on the basis of individual lending in nine blocks of South 24 Parganas district of West Bengal. The blocks are Kulpi, Mandir Bazar, Pathar Pratima, Kakdeep, Sagar, Diamond Harbour, Mathurapur -1 and 2 and Raichak. VSSU is operating without any financial support from the government. Total number of members under VSSU in 2006-07 had crossed 45000. It is involved in the provision of small scale savings and loan to rural individuals and business enterprises. VSSU collects savings of its clients from their doorsteps through his employees called 'motivators'. The savings can be daily savings, weekly savings or monthly savings. In daily savings scheme, each client can save at least Rs.10 daily. The rate of interest against savings deposit is 4% per annum. After accumulation of certain amount of savings regularly that individual can get credit from the micro-finance institution at least six months after becoming member of VSSU. The repayment period is generally one to three years depending on the size of loan. The loan has to be repaid in installment where monthly interest rate varies between 2% to 2.5% provided the size of borrowing is more than the amount of his savings deposits in the financial institution. But if the size of borrowing is less than the amount of his savings deposit, then the interest rate charged by the financial institution is 1.5% per month. As reported, most of the borrowers from VSSU borrow more than their savings deposit. If a client takes Rs.10,000 as loan from VSSU, then he has to pay around Rs.600 per month if we wants to repay that loan with in two years and Rs.800 if he wants to repay that with in 18 months. Besides that the borrower has to save at least Rs.10 daily i.e. Rs.300 monthly. So a borrower has to deposit Rs.900 altogether to VSSU in a month if he borrows Rs.10000 and wants to repay that with in two years. The respondent can borrow more than his savings deposit provided he has good amount of assets with high collateral value and he can place a guarantor during the time of sanctioning loan. So the borrower is monitored not only by the motivators of VSSU but also by the guarantor. At the time of sanctioning individual loan by VSSU no specific preference is given to the female members of the households.

In those same blocks we also observe the existence of government supported microfinance programme under Swarnajayanti Grameen Swarojgari Yojana (SGSY) scheme operated by the Central government with the help of local panchayet and District

Rural Development Agency (DRDA). This programme is motivated by the concept of group lending adopted by Bangladesh Grameen Bank. Here each group consists of not more than 15 members. The members are homogeneous in nature and they belong to same socio-economic background. It is operating like ROSCA (Besley, Coat, Loury, 1993). Self Help Group is formed by the intended participants. They initially have to contribute a minimum amount in their respective groups regularly and on monthly (and sometimes on weekly) basis. The total collected amount is deposited in to nearby commercial bank. Each group has a group leader and a treasurer who are selected democratically by the group members. After accumulation of certain amount of group corpus, a member can take credit from the group she belongs. At the time of demanding loan she has to explain clearly in which purpose loan is required for her. If her explanation satisfies other group members, then only loan is granted where written consent of all the group members is necessary. This is required because all the group members are jointly responsible for repayment of that loan. The credit has to be repaid with in stipulated time period. Most of the times, the rate of interest is 2% per month. After six months of group formation, the commercial bank, DRDA officials and a representative of the panchayat will examine the performance of the group. If it is satisfactory, then that group will be qualified as Grade-1. After that, the group can get refundable financial help from DRDA and cash credit from commercial bank. The group has to repay the cash credit with interest but the contribution of DRDA is an interest free loan. Sum total of the two above mentioned fund is called revolving fund, which totally depends on accumulated group corpus prior to gradation test. So micro-credit under SGSY scheme is based on ‘Progressive lending’ which enables the lender to ‘test’ borrowers with small loans at the initial stage in order to screen out the worst prospects before expanding the loan scale. The revolving fund makes the financial condition of the group healthy and the group can then disburse larger amount of credit to it members so that more members can now invest the credit in different income generating activities. It is expected that higher investment means higher return and that can help the borrower to improve the livelihood of his (her) family.

Research Question and Sample Design:

Basic objective of a microfinance institution is often regarded as poverty alleviation, but financial inclusion subsumes this objective as long as reaching the poor or maximizing depth of outreach is given equal attention in product design, delivery systems and monitoring. Microfinance services include micro savings, microcredit and insurance. Actually before getting credit from any type of microfinance institution each would be borrower has to save in installment in that microfinance institution according to the terms and conditions decided by that institution. So before joining any microfinance system the borrower who is planning to borrow from that institution is clear enough about its savings capacity. Now he (she) will select his (her) preference among those two above mentioned types of microfinance system if both are easily available in the locality where he (she) belongs. In this paper we want to investigate '*whether the wealthy among the not so affluent rural people prefers to join in the microfinance system operating on the basis of individual liability loan contract, the comparatively less wealthy rural people prefers to choose microfinance system operating under joint liability loan contract through forming Self-Help Group and poor rural households have little chance to join in any above two types of microfinance system'*. It is obvious that affluent rural households have greater accessibility to banks and post offices and they have valued assets which can easily be considered as collateral at the time of drawing credit from the formal financial institutions like bank and most of the times their required size of credit is quite large. So only the 'not so affluent' rural households want to join any microfinance institution where the required size of credit is not so large. It is assumed that the upper limit of the market value of asset of the rural households is not more than Rs.300000[i] during the time of joining any microfinance system.

We initially have chosen three-gram panchayets Gabberia, Ghateswar, Krishnapur of *Mandirbazar Block* of South 24 Parganas district of West Bengal where we observe simultaneous existence of both types of microfinance systems. The sample villages are Gabberia, Tajpur, Raghunathpur, Raipur and Bhagirathpur of Gabberia gram panchayet, Ghateswar, Polerhat, Bijoygaunj, and Baidyapara of Ghateswar Gram panchayet and Krishnapur and Madhabpur of Krishnapur Gram panchayet. The block, gram panchayets and villages under the sample gram panchayets were chosen randomly. In our sample villages the rural household has a choice and he (she) can participate in microfinance system operating either on the basis of individual liability loan contract or under joint liability loan contract. He (she) may not participate or fails to participate in any above-mentioned type of microfinance programme also. If we look at the economic conditions of the sample villages we observe mono cropping is a common feature in all three gram-panchayets of Mandir Bazar block because agricultural land is not so fertile and irrigation facilities are also not very developed. The agricultural wage rate is Rs.70 per day. All the wages are paid in cash. Due to pre-dominance of marginal farming in those sample blocks the agricultural laborers fail to get even 60 full man-days of employment annually. So to supplement their income they have to work either non-farm sector or urban informal sector mainly in and around Kolkata. The female members of the households fail to get sufficient number of days of employment in the farm sector. A large number of them are working as domestic workers in and around Kolkata. There is little job opportunity in non-farm sector. A large number of agricultural workers are working as rickshaw van-puller in the agricultural slack season and earns around Rs.40 per day.

Initially we have to draw samples of the rural households of those sample villages from its voter list randomly. After that each representative of the sample household is asked whether he (she) a member of VSSU or Self-Help Group (SHG) under SGSY scheme or not. If the household belongs to any microfinance system then he (she) is asked whether he (she) joined in any of the above microfinance institution around August to October 2007 (which is here represented as t^{th} time period) because to identify the factors which can influence the individuals at the time of taking decision about joining any microfinance system a specific time period is required and in our investigation August to October in 2007 is considered that particular time periods[ii]. If the household has joined in any microfinance system during that specific time period then he (she) was asked his details socio-economic conditions during the time of joining the programme. So total sample is divided in to three following groups.

1. The sample respondents joined in VSSU in the t^{th} period.
2. The sample respondents who have formed SHG under SGSY scheme of the government in the t^{th} period.

3. A non-participants household in any type of microfinance programme belongs to almost same socio-economic background and have not joined in any type of microfinance system in the t^{th} period but have the eligibility criterion for joining any type of microfinance system.

The first two categories of samples belong to the *treatment group* while the last category of samples belongs to the *reference group*. During the time of considering the treatment group, we have to consider sample households belong to both types of group separately. Total sample size of the treatment group is 244. Out of which 121 belongs to first treatment group, 123 belongs to second treatment group (drawn randomly from 22 Self-Help Groups under SGSY scheme where 18 are totally women groups and 4 are male groups)**.** Total sample size of non-participant households (control group) is 90. During the time of drawing samples of the treatment group we ignore the households who are involved in both types of microfinance programme though total number of such households in those three gram panchayets is very few. If that happens, then there is a possibility that the borrowers will become over indebted and they may have the intension through paying one lender's instalment by taking a loan from another.

Choice of a Rural Household between VSSU and SHG under SGSY:

To test the above mentioned hypothesis, we initially have to estimate the value of wealth of the sample respondents both belong to treatment group and control group. Here to estimate the value of wealth of the respondent households in monetary terms we have to consider the market value of land that respondent household owns[iii], the market value of the existing business the respondent households runs in the t^{th} period, and (or) the market value of two-wheeler, pump set, poultry, bullock and (or) cycle respectively in the t^{th} period. Here we do not consider the market value of the homestead that the respondent rural household owns.

Initially we consider the following linear equation and want to estimate that through Multinomial Logit Regression method.

$$Y_j = \alpha_0 + \alpha_1 VASSET_{jt} + u_j \dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Here the dependent variable Y_j can be expressed in the following way:

Y_j =1 If the respondent joined VSSU in the t^{th} period, $Y_j - 2$ if the respondent joined in SGSY scheme through forming SHG in the t^{th} period and $Y_j = 3$ if the respondent did not join in any type of microfinance system in the t^{th} period. Here the first two groups belong to treatment group and the last one belongs to reference group or control group. $VASSET_{jt}$ is the value of asset of the j^{th} household in the t^{th} period and u_j is the disturbance term. Here $VASSET_{jt} \in [0, Rs. 300{,}000]$. The regression result can be expressed in Table-1

Table-1

Explanatory Variable	Y_i=1	Odd Ratio	$Y_i = 2$	Odd Ratio
Constant	-.045*		.124*	
$VASSET_1$	.000141*	1.0254	.0000107	1.000

Pseudo R^2 : Cox and Snell = .28, Nagel Kerke = .301 Mc Fadden = .191

From Table-1 it is clear that 'odd ratio' in both the situations ≥ 1.000 . So the above regression result shows higher the value of asset higher will be the probability of the rural households to join microfinance programme operating both through individual liability as well as under joint liability loan contract. But with the increase of the value of asset the probability of joining VSSU will be comparatively higher than joining under SGSY scheme because the odd ratio of the first one is 1.0254 and that of second is 1.000. Table-2 shows how the value of probability of joining two different types of microfinance system changes with the increase of the value of assets of the sample households.

Table-2: Probability of Joining VSSU or SHG for different values of Asset.

Value of Asset (Rs.)	Probability(j=1) VSSU	Probability (j=2) SGSY	Probability (j=3) Non Participant
0	.30	.37	.33
60,000	.42	.39	.19
90,000	.46	.40	.14
120000	.52	.38	.10

From the above table it is clear that at lower value of Asset there is little difference in terms of probability when j=1, j=2 or j=3. But with the increase of the value of asset the probability of joining of a sample rural household in microfinance system operating on the basis of individual liability loan contract is much higher than that operating through joint-liability loan contract. Effective individual lending models across the world have few characteristics such as guarantees of loan repayment by a co-signer or through collateral, close personal relationship with individual clients and frequent close contracts with individual clients. Everything is done by VSSU for its clients mainly through the 'door step' service with the help of *motivators*. Again from the client's point of view high value of asset indicates higher value of collateral. As income is highly correlated with the value of asset and savings depend upon income it is obvious that savings capacity of a rural household with higher value of asset is also much higher. Besides that due to availability of door step service that can be done much easier way. Hence comparatively wealthy among the not so affluent rural households prefer to join VSSU, a microfinance system operating on the basis of individual liability loan contract.

But as the value of Pseudo R^2 in the above Multinomial logit model is low, we are now trying to find out other factors apart from $VASSET_{jt}$ which can play a significant role at the time of taking decision on joining any type of microfinance programme mainly under individual liability loan contract. So we consider the following extended Multinomial Logit regression model.

$$Y_j = \alpha_0 + \alpha_1 Age_j + \alpha_2 Edu_j + \alpha_3 VASSET_{jt} + \alpha_4 DRatio_{jt} + \alpha_5 Skill_j + \alpha_6 WEMP_{jt} + u_j \qquad \text{……………………(2)}$$

Here apart from value of asset, Age, Educational Level of the sample respondent (Edu) in terms of total number of years spent on education, Dependency ratio[iv] of the sample household in the t^{th} period ($DRatio_{jt}$), Skill or existing entrepreneurial activity of the sample house hold ($Skill_j$) and the value of Women's Empowerment Index of the main woman of the sample household ($WEMP_{jt}$) in the t^{th} period are considered as explanatory variables.

Skill here is treated as dummy variable and = 1 if the respondent has few entrepreneurial activity or technical skill which he (she) can properly expand and utilize through investment after taking credit from the microfinance institution. It will be considered as '0' if the respondent does not have such skill or entrepreneurial ability in the t^{th} period. We have also calculated Women's Empowerment Index at the t^{th} period (the method of calculating the Index is shown in Appendix-1). During the time of calculating the Empowerment Index, we consider the woman who intends to join in any type of microfinance programme or the wife of the respondent who intends to join in any type of microfinance programme or head of the women of the sample households belong to control group. The Multinomial Logit Regression result is shown in Table-3

Table-3 Factors which influence a household to choose either VSSU or SHG or nothing.

Regressor	$Y_i = 1$ (VSSU)	Odd Ratio	$Y_i = 2$ (SGSY)	Odd Ratio
Constant	.574**		4.154**	
Age	-.0918*	.91	-.184*	.873
Edu	.056	1.50	.0971	1.001
$VASSET_1$	.000012*	1.0256	.0000102**	1.00
$DRatio_i$	.489**	1.631	.428**	2.213
$Skill_i$	2.931**	16.958	3.056**	51.808
$WEMP_i$	.117*	1.124	.195*	1.348
N	121			123

Pseudo R^2 = Cox and Snell = .474, Nagel Kerke = .534 , Mc Fadden = .295

*=> significant at 1% level and **=>significant at 5% level.

The above result can be interpreted in the following way:

1. Aged persons are less likely to join in any type of microfinance programme. Actually with the increase of age an individual becomes less motivated to initiate a new or expand his (her) existing income generating activity after taking credit from any financial institution particularly from the microfinance institution where the rate of interest against credit is high and that has to be repaid with in a very short period. So microfinance programme can not be considered as a good instrument to remove the ageing problem among the rural households.
2. Education level of the respondent does not play any significant role at time of taking decision about joining any microfinance programme.
3. Higher dependency ratio influences the rural households to join in any type of microfinance programme operating either through individual liability loan contract or through joint liability loan contract. But the probability of joining in SGSY is more than VSSU (as shown through odd ratios). A household with high dependency ratio has to spend major part of its income for consumption purposes (mainly for food consumption) and very few amounts are left for savings purposes. It is already mentioned that the minimum required size of compulsory savings of a rural household who wants to join

microfinance system operating under joint liability loan contract under SGSY scheme is far less than that who wants to join VSSU. So the probability that a household with high dependency ratio prefers to form Self-Help Group under SGSY scheme is slightly higher than joining VSSU.

4. A household with some technical skill and (or) entrepreneurial ability as well as existing activity is always more prone to join in any type of microfinance system but at unchanged $VASSET_t$ and other explanatory variables, the probability of forming Self-Help Group in SGSY scheme is more than joining in VSSU. Actually a purely landless agricultural labour household or a household who is earning its livelihood through non-farm activities but do not have any entrepreneurial ability and technical skill have less incentive to join in microfinance program because it has little opportunity to expand or start a new business through utilizing the microcredit for investment. Few such individuals have joined in microfinance system in order to take credit in future for emergency purposes or during the time of distress as they almost have no accessibility to get credit from organized credit sector. It is observed from my survey data that 73.14% of the total new entrants under SGSY scheme, 62% of the new entrants of VSSU and only 12% of the total sample respondents in reference category have some technical skill and (or) entrepreneurial ability in the t^{th} period. A sizable number of rural households without any technical skill or entrepreneurial activity have joined VSSU in the t^{th} period mainly to save part of their income regularly through door step service. They do not have any future specific plan to take credit from VSSU. But major percentage of new entrants have joined SGSY scheme to improve their economic condition after taking credit from their respective group in future and to invest that in income generating activities using their little technical know-how or for expanding their own small business. Their requirement of credit is also not so high and their accessibility in the organized credit sector is low but they have clear vision about their future plan. So the possibility of a rural household with skill or entrepreneurial ability to join Self-Help Group under SGSY scheme is slightly higher though they have a clear idea about the drawbacks of group lending system.

5. Woman's empowerment always plays a significant role at the time of taking decision about joining the microfinance program. The above Multinomial Logit regression shows higher the value of Woman's

Empowerment Index or higher intra household decision making power of the head of the women of the household, higher will be the probability of the respondent rural household to join microfinance program where the probability is slightly higher for joining SGSY scheme than joining VSSU. This is because local married rural women are giving preference during the time of forming self-help group under SGSY scheme.

Conclusions: This paper empirically supports Madajewicz (2008). Here also wealthier among the less affluent rural households prefer to join microfinance system operating on the basis of individual liability loan contract (here VSSU) and comparatively less wealthy households prefer to join microfinance system operating on the basis of joint liability loan contract (through forming Self-Help Group under SGSY scheme). But households with no asset or little valued asset are less possible to join in any microfinance system. The valued asset of the wealthier rural households can any time be considered as collateral at the time of drawing micro credit. Here, as their activities after taking credit is monitored by the microfinance institution itself with the help of its motivators, the disbursement of loan is not time taking and does not depend on the consent of other rural households which we observe in group-lending system. Besides that their demand of micro credit is comparatively more (on an average Rs.4000) than the new entrants in SGSY scheme whose demand for credit is not more than Rs.2000. We have already mentioned that one of the drawbacks of microfinance system under joint liability is size of credit offered to a self-help group member is relatively small because here total group is responsible for repayment of that loan with interest if that borrower defaults. So the group does not take any risk through granting larger size of loan to a borrower in fear of default. Hence, a household who has few assets and have the opportunity to expand his small business and want to do that taking larger size of credit prefers to join microfinance system operating on the basis of individual liability loan contract. The required size of compulsory savings here also plays the role of decision making factor because wealthier rural households have the capability to save regularly in VSSU where the minimum size of monthly micro-savings is Rs.300. But for new clients of SGSY scheme the size of compulsory savings is around Rs.40 which is easily affordable for the poorer rural households. As size of credit depends of accumulated savings of that household in any type of microfinance system and capacity of savings of a household depends on income which itself is highly correlated with the value of asset of that household, we can claim that probability of wealthier among not so affluent rural households to join VSSU is much more than joining government supported SGSY scheme through forming SHG. It is also established that aged persons are less prone to join in any type of microfinance program and households with high dependency ratio and entrepreneurial activity and (or) any technical skill and with higher value of Woman's Empowerment Index is slightly more prone to join microfinance system operating on the basis of joint liability loan contract.

Appendix-1

Calculation of Women's Empowerment Index: (Asked either the member or wife (mother) of the member

Name of the Variable	Points
1. Decision about utilization of Micro-credit	Female:-2, Both:-1, Male:-0
2. Decision on purchase of daily food items	Female:-2, Both:-1, Male:-0
3. Decision on purchase of live stock	Female:-2, Both:-1, Male:-0
4. Decision on purchase of utensils and other household items	Female:-2, Both:-1, Male:-0
5. Decision on child education, child vaccination and other health related matters	Female:-2, Both:-1, Male:-0
6. Does she earn regularly and contribute in her family?	Yes:- 2, No:-0
7. Can she participate in different gram sabhas according to her will?	Yes: -1, No:-0
8. Can she spend for consumable goods (cosmetics) according to her will?	Yes: -1, No:-0
9. Can she go outside without taking permission from her husband or elder son?	Yes: -1, No:-0
10. Can she caste her vote according to her will?	Yes: -2, No:-0
11. Can she protect herself against domestic violence?	Yes: -1, No:-0
12. Decision on Family Planning	Female:-2, Both:-1, Male:-0

Maximum point is 20 and more point indicates more Empowerment of Woman or more intra-household decision making power of the main woman of the sample household.

Reference:

Ahin. C. and R. Townsend (2007). 'Using Repayment Data to Test Across Models of Joint Liability Lending' Economic Journal February pp. F11-F51

Armendariz, de, Aghion .B. and J. Morduch (2005): 'The Economics of Micro Finance' MIT Press

Besley Timothy, S.Coat and G.Loury (1993), 'The Economics of Rotating Savings and Credit Association', American Economic Review, 83(4), 792-810

Gine X. and Karlan D. (2006): 'Group versus Individual Liability – A Field Experiment in Philippines', World Bank Policy Working Paper, 4008 Washington.

Madajewicz Malgosia (2008), "Joint Liability versus Individual Liability in Credit Contract", Discussion Paper , Columbia University, Department of Economics

Maria Lehner (Nov. 2008): 'Group versus Individual Lending in Microfinance', Discussion paper 2008-24, Department of Economics, University of Munich

Townsend.R. (1994), "Risk and Insurance in Village India", Econometrica 62: 3, 539-91.

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[i] The assumption is based from our experience collected from field survey.

[ii] The survey was conducted between August to December in 2008. This time period was considered in order to minimize the recall period of each respondent.

[iii] The market value of land in Mandir Bazar block was Rs.30,000 per bigha in August to October 2007 . Here 33 decimals = 1 bigha.

[iv] Dependency ratio of a household is the ratio between total number of adult equivalent family members, and total adult equivalent earning member of that respondent household. Following Townsend (1994) we have considered 1 for any adult family member (both male and female), .25 for any member of that household up to six years of old and .50 for any member of the household between 6 to 14 years of old.