

## **Determinants of Women's Participation in Self-Help Group (SHG)-Led Microfinance Programme in Tamil Nadu\***

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### **Abstract**

Factors determining participation of women in microfinance programme in Tamil Nadu have been identified following the multi-stage purposive and random sampling technique and selecting Coimbatore and Ramanathapuram districts for the study. It has been observed that socially backward, landless and marginal farm households participate more in this programme. Possession of livestock and consumer goods by the member households has been found to deter the joining of group. However, the number of households having informal borrowings, especially from moneylenders has been recorded to be higher among the members before joining the group. Analysis of determinants of women's participation in microfinance programme using probit model has revealed that the age of women and value of productive assets other than land have a significant negative influence on their participation. However, social backwardness, indebtedness and presence of other microcredit programmes in the same or nearby villages have a significant positive influence on women's participation in this programme.

### **Introduction**

Microfinance programme in India is growing rapidly and receiving increasing attention from the financial institutions, non-governmental organizations (NGOs) and the Government, as an instrument that can transform lives of the poor. A vibrant and developed microfinance sector

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\*The paper is based on the Ph.D. thesis of the first author under the guidance of second author, submitted to Tamil Nadu Agricultural University, Coimbatore in the year 2006.

The authors thank the referee for his valuable suggestions.

can significantly influence the economic development and distribution of wealth in the country. Microfinance took roots in 1992-93 with the launching of the Self-Help Group (SHG)-Bank linkage programme by the National Bank for Agriculture and Rural Development (NABARD). Up to March 2005, over 16.18 lakh SHGs had been linked with banks with 24.25 million poor families being brought within the fold of formal banking services. The cumulative bank loan disbursed since the inception of the programme stood at Rs 6,898.46 crores. Over 90 per cent of the SHGs linked to banks under this programme comprise women groups. In this process, 35294 branches of 560 banks comprising 48 commercial banks, 316 cooperative banks and 196 RRBS have been involved in disbursing credits to SHGs (Bhatia and Bhatia, 2005). The new concept of microfinance emphasizes on targeting rural women, provision of finance for creation of assets and their maintenance and bringing in better quality in the financial services (Microcredit Summit, 1997). The World Development Report (2001) has recognized microfinance as a market-based formal mechanism to mitigate the risks faced by the poor, as against the informal group-based mechanism like savings and credit associations (Nair, 2001).

The success of group lending by Grameen Bank has led its adoption by credit institutions across the country. Studies on group lending have revealed that peer monitoring and group pressure had higher significance on performance of the groups, whereas social ties had little significance (Wydick, 1999). Small amount of loan for a variety of purposes disbursed at shorter intervals is practised in the case of group lending. It is a better mechanism to reduce poverty against giving one time loan for productive assets (Madheswaran and Dharmadhikary, 2001). Asset creation and proportion of production loans at the household were found to have increased. Repayment of loan was 95-98 per cent and the social conditions of members have considerably improved after joining the group. Moreover, the dependence on outside borrowings by the households was reduced to an appreciable extent after joining the SHGs (Mathews, 2001; Nedumaran *et al.*, 2001; Anjugam and Alagumani, 2001; Padia, 2002).

A household participates in microfinance programme, if it actually borrows from that source of credit (Diagne and Zeller, 2001). The increased rate of saving, regularity in attending meetings and higher share of production credit than consumption credit were the important factors contributing to the higher participation level. Lack of effective leadership, less involvement of NGOs and consumption-oriented credit were the factors that influenced the lower participation level (Puhazhendhi and Jayaraman, 1999). Women's participation was 23 per cent higher among the households headed by women than those headed by men. Landholdings and villages that did not have

active labour markets for women were associated with increased participation. Poorest of the poor did not participate in the programme. Wages of adult labour in the village, irrigation intensity and roads were found to have negative association with the participation of women in the microfinance programme (Khandker, 1998). Economically weaker sections, i.e. scheduled castes and scheduled tribes accounted for a sizeable proportion of SHG membership (Borbora and Mohanty, 2001). The composition of household assets was found to be the most important determinant of household's access to formal credit than the total value of assets or land size. Higher share of land and livestock in the total value of household assets was negatively correlated with the access to formal credit (Diagne, 1999). A study on the participation of a rural household in SHG in Andhra Pradesh and Uttar Pradesh revealed that the number of SHGs in the village and the households in the second income quintile were the most significant factors influencing the probability of participation of a household in SHG. The access to formal and informal finances by the households decreased the participation of the household in SHGs (Basu and Srivastava, 2005). With this background, the present study was undertaken to analyze the factors determining participation of women in the microfinance programme in Tamil Nadu.

The specific objectives of the study were to (i) analyze the household characteristics, assets and liabilities of the members and non-members of self-help groups, (ii) identify the reasons for joining self-help group by the members, and (iii) analyze the factors determining the women's participation in the microfinance programme.

## **Data Sources and Methodology**

### **Sampling**

The multi-stage purposive and random sampling was followed in the selection of districts, blocks, SHGs and respondents for the present study. Two districts in Tamil Nadu, viz. Coimbatore and Ramanathapuram, representing more and less number of groups linked with bank to the state average under SHG-Bank Linkage programme were selected. Two blocks per district, i.e. blocks with the highest number of SHGs having more than three years of existence and linked with banks were purposively selected. In each block, five SHGs were selected based on the above criteria. In addition, two SHG-Bank linkage models (LM) were chosen for the study, as mentioned below:

- (1) LM-I: BANK-NGO- SHG;
- (2) LM-II: BANK - (NGO + DRDA / MATHI)- SHG

In LM-I, SHGs were formed by the NGOs and they were directly linked with banks for financial assistance. In LM-II, government machinery such as District Rural Development Agency (DRDA), Mahalir Thittam (MATHI) and Block Development Officials were involved in providing training and linking of groups with banks along with NGOs. In each SHG, four members were selected randomly. Apart from this, in each block 20 non-members of SHG were also selected in order to analyze the determinants of participation of households in the microfinance programme. In total, 140 SHG members and 80 non-SHG members were selected. The information related to the study was collected using a well-defined and pre-tested questionnaire by the personal interview method. Detailed information was collected and it pertained to the agricultural year 2003-2004.

### Tools of Analysis

Average and percentage analysis was carried out to draw meaningful interpretation of the results. To analyze the reasons for joining the group by the member households, all the possible reasons were made known to the members of self-help groups. They were asked to rank the reasons in the order of their importance. The ranks given by them were quantified using the Garrett Ranking Technique (Garrett, 1969) using formula (1):

$$\text{Per cent position} = \sum_{j=1}^n [(R_{ij} - 0.5) / N_j] \times 100 \quad \dots(1)$$

where,

$R_{ij}$  = Rank given for the  $i^{\text{th}}$  item by the  $j^{\text{th}}$  individual, and

$N_j$  = Number of items ranked by the  $j^{\text{th}}$  individual.

### Modelling the Determinants of Women's Participation

In the present study, probit model was applied to identify the factors influencing women's participation in the microfinance programme. All the households in a village did not participate in the programme. Thus, the dependent variable was the participation of women in the microfinance programme and it took the value one or zero (participation or non-participation in the programme).

Probit model was explained on the basis of utility theory or rational choice perspective on the behaviour (Mc Fadden, 1981; Gujarati, 2003). It was assumed that participation or non-participation in the microfinance programme depended on an unobservable utility index ( $I_i$ ) that was explained by an explanatory variable ( $X_i$ ) in such a way that larger the value of index

$I_i$ , greater was the probability of participation in the microfinance programme. The index  $I_i$  was expressed as per Equation (2):

$$I_i = \beta_1 + \beta_2 X_i + U \quad \dots(2)$$

where,  $X_i$  is the vector of explanatory variable;  $\beta_1$  is the constant;  $\beta_2$  is the coefficient; and  $U$  is the random disturbance.

There was a critical threshold level of the index  $I_i$  such that if  $I_i$  exceeded  $I_i^*$ , households will have participation in the microfinance programme, otherwise not. Though the threshold  $I_i^*$  as if  $I_i$  was not observable, it was possible to estimate the parameters of the index if we assumed that  $I_i$  was normally distributed with the same mean and variance. Given the assumption of normality, the probabilities that  $I_i^*$  was less than or equal to  $I_i$  could be computed from the standardized normal cumulative distributive function (cdf) as given by Equation (3):

$$P_i = P_r (Y=1) = P_r (I_i^* < I_i) = F (I_i) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{I_i} e^{-t^2/2} dt \quad \dots(3)$$

$$P_i = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\beta_1 + \beta_2 X_i} e^{-t^2/2} dt \quad \dots(4)$$

where, 't' is a standardized normal variable, i.e.  $N(0,1)$ .

To obtain information on  $I_i$ , the utility index, as well as the coefficients  $\beta_1$  and  $\beta_2$ , inverse was taken.

$$I_i = F^{-1} (I_i) = F^{-1} (P_i) = \beta_1 + \beta_2 X_i \quad \dots(5)$$

where,  $F^{-1}$  is the inverse of the normal cdf.

In probit analysis, the unobservable utility index  $I_i$  was simply known as Normal Equivalent Deviate (NED) or simply Normit. Since the  $I_i$  would be negative, i.e.  $P_i < 0.5$  in practice, the number 5 was added to the NED and the result was called probit [Equation (6)]:

$$\text{Probit} = \text{N.E.D.} + 5 = I_i + 5 \quad \dots(6)$$

To estimate  $\beta_1$  and  $\beta_2$ , it was written as Equation (7):

$$I_i = \beta_1 + \beta_2 X_i + U_i \quad \dots(7)$$

where,  $U_i$  is the stochastic disturbance-term.

The model specified in the present study was given by Equation (8):

$$\text{PAWMF} = \beta_0 + \beta_1 \text{AW} + \beta_2 \text{D}_1 + \beta_3 \text{LH} + \beta_4 \text{VPA} + \beta_5 \text{PI} + \beta_6 \text{D}_2 + U_i \quad \dots(8)$$

where,

PAWMF = Participation of women in microfinance programme, it was 1 if the women participated in the microfinance programme; 0, otherwise

AW = Age of women (years)

$D_1$  = Dummy variable indicating 1 if of socially backward caste; 0, otherwise

LH = Landholding (acres)

VPA = Value of productive assets other than land (Rs)

PI = Prior indebtedness (Rs)

$D_2$  = Dummy variable indicating 1 if the presence of other microcredit programme / SHGs in the same or nearby village; 0, otherwise

$\beta_0$  = Constant and

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  and  $\beta_6$  = Respective coefficients

## Results and Discussion

### (a) General Characteristics of Sample Households

The family composition of member and non-member households in the study area is described in Table 1. The average size of family was bigger (around 4.3) in the Ramanathapuram district than Coimbatore district (less than four) across the models. The same pattern was observed in the case of non-member households also. This might be due to the higher rural population in Ramanathapuram (75 per cent) than Coimbatore (34 per cent). On an average, the age of the women in SHGs was around 37 years, indicating that the middle-aged women represented the SHGs across models. The age of women in non-member households also varied from 36 years to 40 years. The literacy rate was higher (73 per cent) in Ramanathapuram than Coimbatore (69 per cent). Though the literacy rate was high, the level of education among the women was middle school level only, irrespective of the member and non-member households.

The number of dependents in the family was higher, i.e. 1.07 and 1.25, in the Ramanathapuram district under LM-I and LM-II, whereas in the Coimbatore district, it was found to be equal to one in both the models. This might be due to the bigger family size and more number of children in the Ramanathapuram district. In the case of non-member households, it was on

Table 1. General characteristics of members and non-members of SHGs

Particulars	LM-I*		LM-II**		Non-members	
	Ramanathapuram	Coimbatore	Ramanathapuram	Coimbatore	Ramanathapuram	Coimbatore
Average family size (Number)	4.30	3.95	4.43	3.78	3.98	3.73
Age of the women (Years)	33.58	36.75	36.90	39.15	35.80	39.90
Literacy of women	6.63	7.05	4.73	5.10	3.70	5.90
Eamer-dependent ratio	1:1.07	1:0.99	1:1.25	1:0.85	1:1.01	1:1.22
Percentage of scheduled caste to total members	40	5	45	12.50	45	37.50
Percentage of female-headed family	5	5	..	15	10	5
<b>Landholdings (per cent)</b>						
Owner	17.5	..	17.5	2.50	22.5	22.5
Tenants	10.0	5.0	12.5	7.50	..	..
Owner-cum-tenants	..	..	5.0	..	7.5	2.5
Landless	72.5	95.0	65.0	95.0	72.5	75.0
<b>Occupation (per cent)</b>						
Agricultural labour households	40	15	20	25	12.5	50
Non-farm households	53	70	60	50	62.5	45
Farm households	7	..	15	..	20.0	..
Households engaged in organized sector	..	15	5	25	5.0	5.0

Note: \*LM-I: BANK-NGO-SHG; \*\*LM-II: BANK-(NGO+DRDA+MATHI)-SHG

the reverse side, i.e. higher in Coimabtoire than Ramanathapuram. Scheduled caste population accounted for 45 per cent, irrespective of the member and non-member households to the total sample. In addition, the share of female-headed family in the total SHG member households was five per cent in both the districts, whereas only Coimbatore district under LM-II had about 15 per cent. It showed that a substantial portion of economically and socially backward people participated in this programme. Landless households accounted for the major share in the total sample, irrespective of the member and non-member of SHGs. Of the total sample households, landowners accounted for 17.5 and 2.5 per cent, respectively in Ramanathapuram district and Coimbatore district; only 2.5 per cent of them owned less than one hectare of land, irrespective of the models. It clearly showed that the landless households and marginal farm households participated in this programme to the maximum extent.

Based on the economic activity, which gave more than 50 per cent of the total household income, households were classified into four categories. The households who derived major share of income from non-farm activity accounted for the larger share, followed by agricultural labour households across models, member and non-member households. The households who derived the major share of income from the farming activity accounted for less than 15 per cent in the Ramanathapuram district, whereas it was nil in the case of Coimbatore district. Since majority of the households belonged to landless households, they depended more on non-farm activity, followed by agriculture for deriving income.

### **(b) Assets and Liabilities**

The assets including livestock and other material or consumer assets owned by the sample households prior to group formation are provided in Tables 2 and 3.

#### **Livestock Ownership**

Livestock ownership by the member households prior to joining SHG was less than 7.5 per cent in the Ramanathapuram district, and 25-30 per cent in the Coimbatore district. The higher livestock ownership in the Coimbatore district among the member households might be due to more availability of fodder and better health care facilities in this district. Goat and sheep population accounted for the major share in the total livestock ownership among the member households. In the case of non-members, the percentage of households owning livestock was 40 in Ramanathapuram and 36 in Coimbatore districts. It showed that the livestock ownership prior



**Table 2. Livestock ownership by sample households prior to group formation**

Particulars	LM- I		LM- II		Non-members	
	Ramanath- apuram	Coimb- atore	Ramanath- apuram	Coimb- atore	Ramanath- apuram	Coimb- atore
Milch animals- Herd size (No.)	..	0.50	0.29	0.29	0.23	0.40
Value (Rs)	..	4475 (20.0)	2537 (10.0)	2927 (20.00)	1975 (4.00)	3463 (32.5)
Calves - Herd size (No.)	..	0.25	0.15	0.1	0.25	0.08
Value (Rs)	..	460 (15.0)	268 (10.0)	122 (10.00)	500 (45.0)	56 (7.5)
Goat / sheep - Herd size (No.)	0.45	3.45	0.98	0.54	1.03	0.3
Value (Rs)	575 (10.0)	3600 (15.0)	1181 (12.5)	444 (20.00)	1165 (45.00)	275 (5.00)
Total livestock value (Rs)	575 (7.5)	8535 (25.0)	3985 (5.0)	3493 (30.00)	3640 (40.00)	3794 (35.5)

*Note:* Figures within the parentheses indicate the per cent of ownership

**Table 3. Asset ownership by member and non-member households**

(per cent)

Particulars	LM- I		LM- II		Non-members	
	Ramanath- apuram	Coimb- atore	Ramanath- apuram	Coimb- atore	Ramanath- apuram	Coimb- atore
<b>Type of house</b>						
Thatched	52.5	5.0	20.0	22.5	15.0	10.0
Tiled	12.5	55.0	47.5	45.0	42.5	75.0
Concrete	35.0	40.0	32.5	32.5	32.5	15.0
Material assets <sup>a</sup>	5.0	12.5	..	20.0	12.5	25.0
Amount per capita (Rs)	2150	2850	..	1850	2550	3200
LPG gas connection	..	5.0	15.0	10.0	15.0	20.0

*Note:* <sup>a</sup> Material assets included television set, mixer, grinder, steel items and gold ornaments.

to group formation was low by member households than non-members of SHG.

#### Material or Consumer Assets

Table 3 reveals that 60 per cent of the households possessed thatched/tilled houses and the possession of material goods ranged from 5 to 20 per

cent only. The members having LPG gas connection for cooking purpose were less than 20 per cent, which showed that a majority of the households met their fuel requirement on their own, mainly from the nearby areas and they did not have the capacity to purchase LPG connection. In the case of non-members, more than 65 per cent of the households possessed thatched/tiled houses. Households owning consumer durables were 12.5 per cent in Ramanathapuram and 25.0 per cent in Coimbatore; possession of LPG connection was found to be 15 per cent and 10 per cent, respectively.

### **(c) Indebtedness of Sample Households**

The members who had previous debts from the informal sources were categorized into loans availed from moneylenders in cash, mortgaging their material assets to the pawnbrokers and relatives or friends. The rate of interest charged by the moneylenders was found to be higher than other sources. In the case of moneylenders, it came to 120 per cent and it was collected in weekly installments, whereas in the case of pawnbrokers, the rate of interest was 60 per cent, and from relatives/friends, it varied from 24 to 60 per cent. Of the total number of loans availed from informal sources, borrowings from moneylenders accounted for a major share of 50 per cent in both the districts, followed by relatives. The details are given in Table 4.

It showed that the dependence on informal sources for credit was 78 per cent and 60 per cent in Ramanathapuram and Coimbatore districts, respectively under LM-I, whereas it was around 43 per cent each under LM-II. The per capita loan was found to be higher in Ramanathapuram than Coimbatore, which might be due to the prevalence of more poverty in this district. Loan from moneylenders formed the major source of borrowing, followed by relatives in both the member and non-member households. It clearly showed that the member households depended more on informal sources for meeting their credit needs than the non-members of SHG, which might be the reason for the members to participate in the microfinance programme in order to get relieved from the clutches of moneylenders.

## **2. Reasons for Joining Self-help Group**

For carrying out this analysis, the members of SHGs were asked to prioritize the specific reasons for joining the groups. The data were analyzed using Garrett ranking technique and the results have been presented in Table 5. It was observed that of the four reasons identified by the sample households, getting loan from the group or bank, followed by promotion of income-generating activities were the major reasons for joining self-help groups in Ramanathapuram and Coimbatore districts under both the models. Two

Table 4. Indebtedness of member and non-member households

Sources of borrowing	LM-I		LM-II		Non-members	
	Ramanathapuram	Coimbatore	Ramanathapuram	Coimbatore	Ramanathapuram	Coimbatore
<b>Moneylenders</b>						
No. of loans	18	10	12	17	20	14
Per capita loan (Rs)	(45.00)	(50.00)	(30.00)	(42.50)	(50.00)	(35.00)
	2210	1250	2500	1868	950	750
	(38.04)	(62.5)	(61.70)	(100.00)	(20.65)	(27.27)
<b>Pawnbrokers</b>						
No. of loans	3	..	2	..	2	10
Per capita loan (Rs)	(7.50)	..	(24.7)	..	(5.00)	(25.00)
	1600	..		..	2450	1200
	(27.54)	..		..	(53.26)	(43.64)
<b>Relatives</b>						
No. of loans	10	2	3	..	8	3
Per capita loan (Rs)		(10.00)	(13.60)	..	(20.00)	(7.50)
	2000	750	..	..	1200	800
	(34.42)	(37.50)	..	..	(26.09)	(29.09)
<b>Total</b>						
No. of loans	31	12	17	17	30	27
Per capita loan (Rs)	(77.50)	(60.00)	(42.50)	(42.50)	(75.00)	(67.50)
	5810	2000	3500	1868	4600	2750
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)

Note: Figures within the parentheses indicate the per cent to respective totals

**Table 5. Rank order of reasons for joining self-help group by member households**

N=140

Reasons	LM-I				LM-II				All members	
	Ramanathapuram		Coimbatore		Ramanathapuram		Coimbatore		Score	Rank
	Score	Rank	Score	Rank	Score	Rank	Score	Rank		
To get loan from the group	58.75	I	62.00	I	63.80	I	58.35	I	57.69	I
To take up income-generating activity	49.45	II	57.80	II	53.70	II	53.85	II	53.10	II
To mobilize savings	46.35	IV	47.60	III	44.00	IV	47.60	III	47.62	III
To reduce old debts	46.70	III	36.10	IV	51.40	III	42.20	IV	43.22	IV

other reasons, viz. mobilization of savings and redemption of old debts were ranked III and IV in Coimbatore and IV and III in Ramanathapuram districts.

### 3. Determinants of Participation of Women in Microfinance Programme

The factors determining the participation of women in the microfinance programme were analyzed using the probit regression function and the results are given in Table 6. The results indicated that the age of women, caste position, value of productive assets other than land, households having indebtedness prior to group formation and the presence of other micro-credit programmes or SHGs in the same or nearby villages were the most significant factors influencing the women's participation in the microfinance programme. All the variables included in the analysis had the expected signs.

As the age of women increased by one per cent, the probability of participation of women in the microfinance programme decreased by 0.60 per cent, indicating that as the age of women increased, they could not participate in the programme effectively.

The dummy variable indicating social backwardness of the households had the significant positive relationship with the probability of participation of women. It indicated that socially backward people were more likely to participate in the programme because of lower income and asset position. This was borne out by the fact that the proportion of scheduled caste members to the total membership was 45 per cent in the selected districts.

**Table 6. Determinants of women's participation in microfinance programme — Estimates of probit function**

Variables	Expected Sign	Coefficient	Elasticity	't' ratio
Constant		1.1510**	0.6230	2.44
Age of women	(-)	-0.0310**	-0.6038	-2.65
Social backwardness	(+)	0.6591**	0.1184	3.07
Landholding	(-)	0.0730	0.0148	0.67
Value of productive assets other than land	(-)	-0.0339**	-0.0731	-2.88
Prior indebtedness	(+)	0.7247**	0.2335	3.52
Presence of other micro-credit programmes	(+)	0.8188**	0.1612	2.44

log-likelihood function = -115.59; Likelihood ratio test = 57.24

\*\* Refers to significance at one per cent level

The value of productive assets other than land was found to have the significant negative impact on the participation of women in the microfinance programme. As the value of productive assets increased by one per cent, the probability of participation of women in the microfinance programme decreased by 0.07 per cent. If the value of productive assets in the household increased, they might keep off from participating in the programme because they might have access to formal credit by giving collateral security against the loan.

Similarly, prior indebtedness among households had a significant positive impact on the participation of women in the microfinance programme. As the outside loan amount in the household increased by one per cent, the probability of participation of women in the microfinance programme increased by 0.23 per cent.

Finally, the presence of other micro credit programmes or self-help groups in the same or nearby villages had a significant positive influence on the participation of women in the microfinance programme. It implied that the participation of women in microfinance programme was influenced by “demonstration effect” of the programme.

## **Conclusions**

The study has revealed that landless and marginal farm households and socially backward households participate more in the SHG-led microfinance programme. Livestock and the material goods ownership by the member households have been found to be less prior to the group formation. Moreover, households having informal borrowings have been found to have higher priority to the group formation. Analysis on the determinants of women’s participation in the microfinance programme has revealed that the age of women and value of productive assets other than land have negative relationship with the participation of women, whereas social backwardness, indebtedness and presence of other micro credit programmes in the same or nearby villages have positive association with women’s participation in the microfinance programme. It has been suggested that higher number of self-help groups may be formed among the economically and socially disadvantaged households in order to relieve them from the clutches of moneylenders and at the same time to bring the poor under the fold of formal banking institutions.

## **References**

- Anjugam, M and T. Alagumani, (2001) Impact of microfinance through self-help groups – A case study, *Indian Journal of Agricultural Economics*, **56** (3): 458.

- Basu, P. and P. Srivastava, (2005) Exploring possibilities: Microfinance and rural credit access for the poor in India, *Economic and Political Weekly*, **XL** (17): 1747-1756.
- Bhatia, Navin and Anju Bhatia, (2005) Microfinance — Overcoming the mismatches, *The Hindu Business Line*, 18 November. .
- Borbora, S. and R. Mohanty, (2001) Microfinance through self-help groups and its Impact: A case of Rashtriya Gramin Bank Vikas Nidhi Credit and Saving Programme in Assam, *Indian Journal of Agricultural Economics*, **56**(3): 449-450.
- Diagne, A., (1999) Determinants of household access to and participation in formal and informal credit markets in Malawi, *FCND Discussion Paper No.67*, International Food Policy Research Institute, Washington, DC, USA.
- Diagne, A. and M. Zeller, (2001) Access to credit and its impact on welfare in Malawi, *Report No.116*, International Food Policy Research Institute, Washington, DC, USA.
- Garrett, E. and R.S. Woodworth, (1969) *Statistics in Psychology and Education*, Bombay: Vakils Feffer and Simons Private Limited, 329p.
- Gujarati, N. Damodar, (2003) *Basic Econometrics*, New York: McGraw Hill Companies Inc.
- Khandker, R.S. (1998) *Fighting Poverty with Microcredit: Experience in Bangladesh*, New York: Oxford University Press, World Bank, 228p.
- Madeshwaran, S. and A. Dharmadhikary, (2001) Empowering rural women through self-help groups: Lessons from Maharashtra rural credit project, *Indian Journal of Agricultural Economics*, **56** (3): 427-443.
- Mathews, S., (2001), *A Comparative Study on Working of Women SHGs in Kerala and Tamil Nadu*, M.Sc. (Ag). Thesis. Department of Agriculture and Rural Management, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu.
- Mc Fadden, M. L., (1981) *Econometric Models of Probabilistic Choice Structural Analysis of Discrete Data*, Cambridge: MIT Press.
- Microcredit Summit Report*, (1997), Washington, DC, USA.
- Nair, S. Tara, (2001) Institutionalizing microfinance in India — An overview of strategic issues, *Economic and Political Weekly*, special articles, 27 January.
- Nedumaran, S., K. Palanisami and L.P. Swaminathan, (2001) Performance and impact of self-help groups in Tamil Nadu, *Indian Journal of Agricultural Economics*, **56** (3): 471-472.

Padia, Veena, ( 2002) *Study on Microfinance and Social Mobilization for Empowerment of Women: A Case Study of Dhan Foundation*, UNDP Report, New Delhi.

Puhazhendhi, V. and B. Jayaraman, (1999) Increasing women's participation and employment generation among rural poor: An approach through informal groups, *Indian Journal of Agricultural Economics*, **54**(3):287-295.

Wydick, Bruce, (1999) Group lending: The significance of microcredit as a tool of the third world development, *Economic Journal*, **109**(457):463-475.