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Factors Determining Member's Participation in Microfinance Programme in Andhra Pradesh

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ABSTRACT

The factors determining member's participation in microfinance programme in Andhra Pradesh have been identified following the multi-stage purposive and random sampling technique. Probit analysis was employed to know the factors determining the member's participation in both SHG and JLG programmes and participation in only SHG programme. The analysis of determinants of member's participation in microfinance programme revealed that social backwardness of the household, households with farming as main occupation and higher family expenditure had significant positive influence on participation in both SHG and JLG programmes and only SHG progrmme. The age of the respondents had significant negative influence on participation in only SHG programme.

Key words : Joint liability groups, Microfinance, Probit model, Self-help groups.

India is home to the worldwide largest microfinance sector having grown rapidly in recent years and received increasing attention as a tool for rural development and poverty alleviation. Two delivery models dominate the sector: the microfinance institution (MFI) model and the self-help group (SHG) model. Both these models contributed to the observed growth of the sector. The SHG model was a proposed solution by the National Bank of Agriculture and Rural Development (NABARD) for the failed attempts of the Indian Government to reach financial deepening. Their suggestion made in the early 1990s was to link informal credit groups –the SHGs –to formal banks. By the 1990s economic reforms in India opened up space for the private sector to play a larger role in the banking system. Amidist these reforms a new breed of private microfinance provider emerged: Microfinance institutions (MFIs), which originally operated as non-profits, but soon transferred as for-profit NBFCs (Non-banking Financial Corporations). The majority of the MFIs follow the JLG approach for micro-lending. Up to March 2011 over 4.81 million SHGs had been credit linked with banks with 62.5 million poor families being brought within the fold of formal banking services. MFIs achieved a client outreach of 31.4 million up to March 2011. 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). Small amount of loan for a variety of purposes disbursed at shorter intervals is practiced 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). Through SHGs rural poor not only developed confidence in the members but also cultivated the habit of thrift / saving and utilization of collective wisdom to tackle their own problems (Kundu *et al,* 2001)

Age of the 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 near by villages were the most significant factors influencing the women's participation in the microfinance programme (Anjugam and Ramasamy, 2007). The access to formal and informal finances by the households decreased the participation of the household in SHGs (Basu and Srivastava, 2005). 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 lower participation level of women SHG members (Puhazhendhi and Jayaraman, 1999). With this background the present study was carried out to know the factors determining the member's participation in the microfinance programme.

MATERIAL AND METHODS

The multi stage purposive random sampling was followed in the selection of districts, mandals, villages and sample respondents. Two districts in Andhra Pradesh, viz. Kadapa and Kurnool where SHG and MFI programmes successfully operated, were selected. Three mandals from each district with maximum number of SHGs and MFI borrowers were selected. From each mandal two villages were selected randomly. In each village, 10 members who participated in both SHG and MFI programmes represented as category I, 10 members who participated in SHG programme represented as category II and 5 non-participants represented as category III were selected. In all 120 SHG and JLG borrowers, 120 SHG borrowers and 60 non-participants were selected. The detailed information was collected during the period of 2010-2011.

In the present study probit model was used to identify the factors responsible for household's participation in MFI programme in addition to the SHG programme and also factors determining the member's participation in the SHG 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.

$$I_i = \beta_1 + \beta_2 X_i \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where, X_i is the vector of explanatory variable. β_1 is the constant, β_2 is the coefficient.

There was a critical or 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 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 the equation (2).

$$P_i = P(Y=1/X) = P(I_i^* \leq Ii) = P(Z_i \leq \beta_1+\beta_2 X_i) = F(\beta_1+\beta_2 X_i) \quad \ldots\ldots\ldots (2)$$

Where P(Y=1/X) means the probability that the women will participate in the microfinance programme given the values of the X, or explanatory variables and where Z_i was the standard normal variable, i.e., $Z \sim N(0, \acute{o}^2)$. F was the standard normal variable CDF, which would be written as

$$F(I_i) = \frac{1}{\sqrt{2\pi}} \int_{-\alpha}^{I_i} e^{-z^2/2} dz \quad \ldots\ldots\ldots (3)$$

$$F(I_i) = \frac{1}{\sqrt{2\pi}} \int_{-\alpha}^{\beta_1+\beta_2 X_i} e^{-z^2/2} dz \quad \ldots (4)$$

To obtain information on I_i, the utility index as well as on β's, the inverse of the function was obtained

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

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 (N.E.D) 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 N.E.D and the result was called probit (6).

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

To estimate β_1 and β_2, it was written as equation (7).

$$Ii = \beta_1 + \beta_2 X_i + U_i \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

Where,

the explanatory variables considered were

X_1 =Age of the borrower

X_2 =Education of the borrower

X_3 =Caste of the borrower

X_4 =Marital status of customer, 1 if married, 0, otherwise,

X_5 =Household size

Table 1. General characteristics of the household.

S.No	Particulars	Category-I		Category-II		Category-III		Pooled	
		No	Percent	No	Percent	No	Percent	Average	Percent
1.	Average age of the member (years)	35.48		36.61		37.63			
2.	Average age of the spouse (years)	40.85		42.73		42.69			
3.	Marital status								
	Married	116	96.67	110	91.67	59	98.33	102.20	95.56
	Unmarried	0	0	0	0	0	0	0.00	0.00
	Widow	4	3.33	10	8.33	1	1.67	5.80	4.44
	Total	120	100.00	120	100.00	60	100.00		
4.	Average size of the family	4.5	100	4.32	100.00	3.88	100.00	4.23	100.00
5.	Earning members	2.71	60.22	2.57	59.49	2.33	60.05	2.54	59.92
6.	Ratio of earners to non earners	1.51		1.47		1.5		1.49	
III.	Material assets (Rs)	17180		42712		46692		33295	

X_6 =Spouse age
X_7 =Spouse low education
X_8 =Spouse occupation
X_9 =Number of persons working in the family
X_{10} = Ownership of the house, 1 if owned, 0, otherwise,
X_{11} =House type, 1 if pucca, 0, otherwise,
X_{12} =Value of consumer assets (Rs)
X_{13} =Value of productive assets (Rs)
X_{14} =Total land holding (ha)
X_{15} =Total family expenditure per annum (Rs)
X_{16} =Total income per annum (Rs)
X_{17} =Ratio of expenditure to total income
X_{18} =Number of sources of income
X_{19} =Total debt of the family (Rs)
X_{20} =Savings of the household (Rs)
and U_i is the stochastic disturbance term.

RESULTS AND DISCUSSION

General characteristics of the household

The average age of sample rural women was 35.48, 36.61 and 37.63 in category I, II and III respectively (Table 1) and the average age of the spouse was 40.85, 42.73 and 42.69 years for the said categories respectively. Overall 95 per cent of the sample respondents were married and 5 per cent were widows in the study area. The main reason for sample respondents not representing from unmarried category was that the girls got married at a very early age. The average family size was 4.5, 4.32 and 3.88 in category I, II and III respectively. The ratio of earning to non-earning members was highest in category I with 1.51 and lowest in category II i.e. 1.47. This ratio was 1.50 in the case of category III. The value of material assets for category I, II and III was Rs.46,692, Rs.42,712 and Rs.17,180 respectively.

Factors Determining Member's Participation in MFI Programme in Addition to SHG

The factors determining the member's participation in the MFI programme in addition to the SHG were analyzed using the probit regression function and the results are presented in Table 2.

Social backwardness of the households had the significant positive influence on the probability of participation in MFI programme in addition to the SHG programme. Socially backward people were 32.8 per cent more likely to be a member of both the microfinance programmes because of lower income and asset position. On the other hand if the household was from other backward caste (OBC) category, then the respondent was less likely to be in both

Table 2. Factors determining member's participation in an MFI programme in addition to SHG

Variables	Coefficient	Std. Err.	Z	P>Z
Age	-0.021	0.103	-0.200	0.839
Education	-0.035	0.120	-0.290	0.769
Caste				
SC	0.328	0.129*	2.360	0.018
OBC	-0.333	0.124*	-2.450	0.014
OC	-0.091	0.151	-0.600	0.550
Marital status	-0.585	0.180	-0.510	0.609
Household size	0.070	0.047	1.500	0.134
Spouse age	0.087	0.097	0.890	0.372
Spouse low education	0.192	0.114***	1.660	0.097
Spouse occupation	0	0	0	0
Farming	0.242	0.120***	1.930	0.053
Farm labour	-0.178	0.157	-1.070	0.283
Dairy	0.033	0.216	0.150	0.880
Number of persons working in the family	0.301	0.258	1.160	0.245
Ownership of the house	0.317	0.149	1.640	0.101
House type	-0.202	0.184	-1.030	0.303
Consumer assets	-0.185	0.051**	-3.630	0.000
Productive assets	-0.018	0.049	-0.370	0.712
Land holding	-0.391	0.101**	-3.530	0.000
Family Expenditure	0.568	0.291***	1.950	0.052
Total income	-0.332	0.294	-1.130	0.260
Ratio of expenditure to total income	-1.188	0.561*	-2.110	0.035
Number of income sources	-0.225	0.135***	-1.660	0.096
Debt	0.886	0.143**	6.170	0.000
Savings	-0.391	0.105**	-3.710	0.000

Note: **, *, *** Significant at 1 %, 5% and 10% level

programmes, and more likely to be in only SHG programme.

If the spouse of the sample respondent was illiterate, then the respondent was 19 per cent more likely to be in both the programmes than a respondent with educated spouse. Also households which had farming as the main occupation were 24 per cent more likely to be in both the microfinance programmes than only in a SHG. The households which had higher consumer assets were 18 per cent less likely to be in both programmes and those with land holding were 39 per cent less likely to be in both the programmes.

The households with high total expenditure were 56 per cent more likely to be in both the programmes. The results further revealed that the households which spend higher percentage of their total income are less likely to be members in both the programmes as compared to only SHG.

Higher the income and number of income sources the households were less likely to be in both the microfinance programmes. Higher the level of debt, the households were 88 per cent more likely to be in both the microfinance programme than in SHG.

Finally higher the savings, the households were less likely to be in both the microfinance programmes, hence more likely to be only in a SHG. The reason was the amount of loan given by a bank through SHG was depended on the amount of

Table 3. Factors determining member's participation in SHG programme.

Variables	Coefficient	Std. Err.	Z	P>Z
Age	-0.433	0.694**	-2.95	0.003
Education	0.081	0.112	0.740	0.460
Caste				
SC	0.325	0.231***	1.91	0.056
OBC	-0.211	0.166	-1.280	0.200
OC	-0.273	0.202	-1.450	0.146
Marital status	-0.016	0.041	-0.380	0.702
Household size	0.013	0.064	0.200	0.839
Age of the spouse	0.000	0.001	-0.040	0.966
Low education of the spouse	0.041	0.107	0.370	0.708
Occupation of the spouse				
Farming	0.224	0.074*	1.96	0.050
Farm labour	0.084	0.121	0.610	0.544
Dairy	0.037	0.257	0.140	0.886
Number of persons working in the family	0.148	0.184	0.890	0.376
Ownership of the house	0.388	0.204	0.7	0.482
House type	0.073	0.043	0.08	0.937
Consumer assets	-0.043	0.040	-1.050	0.296
Productive assets	-0.022	0.093	-0.230	0.815
Land holding	-0.124	0.250***	-1.87	0.062
Expenditure	0.533	0.262***	1.930	0.054
Total income	0.673	0.427	1.510	0.131
Ratio of expenditure to total income	0.075	0.136	0.550	0.581
Number of income sources	0.293	0.104**	2.730	0.006
Debt	0.235	0.095*	2.430	0.015

Note: **, *, *** Significant at 1%, 5% and 10 % level

savings. Higher the savings, higher the loan amount given by the bank and lower the participation in the MFI programme.

Factors Determining Member's Participation in SHG Programme

The factors determining the participation of women in the SHG programme were analysed using the probit regression function and the results presented in Table 3.

From the results it is observed that age of the sample respondent had significant negative influence on participation in the SHG programme. If the age of the women increased by one per cent, the probability of participation in the SHG programme decreased by 0.43 per cent, which indicated that as the age of women increased, they could not participate in the programme effectively.

Social backwardness of the household had the significant positive relationship with the probability of participation of women. It indicated that socially backward people were 32 per cent more likely to participate in the SHG programme because of lower income and asset position.

The households with farming as main occupation were 22 per cent more likely to be in the SHG programme. The households with higher number of income sources were 29 per cent more

likely to be in SHG programme. Similarly, debt of the household had a significant positive impact on participation of women in the SHG programme. As the debt amount increased by one per cent, the probability of participation of women in the SHG programme increasd by 0.23 per cent.

The results are in line with the results of Anjugam and Ramasamy (2007) who 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 microcredit programmes or SHGs in the same or nearby villages were the most significant factors influencing the women's participation in the microfinance programme.

From the above discussion it is revealed that social backwardness of the household had a significant positive influence on the participation in both SHG and MFI programmes and participation in only SHG programme. Households with farming as main occupation had positive and significant influence on participation in both SHG and MFI programmes and participation in only SHG programme. The households with land holding were less likely to be in both the microfinance programmes and only in SHG programme. The households with higher family expenditure had significant positive influence on participation in both SHG and MFI programmes and participation in only SHG programme. Higher the number of income sources, lower the participation in both the microfinance programmes and higher the participation in only SHG programme. This indicated that higher the number of income sources, higher the level of income and the participants were more likely to be in only SHG programme and less likely to be in both SHG and MFI programme. The debt of the household had a significant positive influence on the participation in both SHG and MFI programmes and participation in only SHG programme.

The age of the household had significant negative influence with the participation in only SHG programme. The same pattern existed for participation in both SHG and MFI programmes, but the result was not significant. The households from other backward caste category had significant negative influence on participation in both the MFI and SHG programmes. The same pattern existed for participation in only SHG programme but the result was not significant. Higher the level of savings, lower the participation in both the microfinance programmes and higher the participation in only SHG programme.

CONCLUSION

Social backwardness of the households had a significant positive influence in participation in both SHG and MFI programmes. Hence, higher number of self-help groups were promoted by the government among the 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.

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