

RESEARCH

Open Access

# Microfinance impact on women's decision making: a case study of Andhra Pradesh

Vachya Lavoori<sup>2</sup> and Rajendra Narayan Paramanik<sup>1\*</sup>

\* Correspondence:

raju.purulia@gmail.com

<sup>1</sup>Faculty of VJIM, Hyderabad and Research Scholar, School of Economics, University of Hyderabad, Hyderabad and , Prof. C.R. Rao Road, Gachibowli, Hyderabad 500 046, India

Full list of author information is available at the end of the article

## Abstract

The present study seeks to examine the impact of microfinance and other socio-economic factors on women empowerment as viewed from their participation in decision making, income as well as employment generation activities. The findings of the study based on a field study conducted in two villages of Andhra Pradesh suggest that factors such as member and her husband's income, family size and frequency of Self help group meetings have overall positive influence on women empowerment. In case of income and employment generation activities, age and income of Self help group members, their household income and amount of loan are found to have positive effect.

**Jel Codes:** D20; G34; L10

**Keywords:** Microfinance; Self help group-bank linkage program; Income/employment generation and women decision making

## Introduction

Indian banking system faces a lot of challenges in providing financial services to every strata of the society. At present, more than half of the population is excluded from the financial ambit and several socio-economic factors are directly or indirectly responsible for such a state of affairs. Microfinance institutions (MFIs) and several self help groups (SHGs) have emerged as subsector of financial system to provide service to the needy, especially the women. These institutions and organizations have been playing a crucial role in enriching an inclusive financial system of Indian economy and empowering women across the nation. Women, being an integral part of the socio-economic system needs more equitable distribution of power, a greater space in the critical decision making processes at home as well as in their professional, political and social life. Empowerment of women through legal, educational and social institutions will lead to a true and wholesome development of the society. Role of Self help group (SHG) and Microfinance Institution (MFI) in achieving the economic dimension of this goal is note-worthy.

Microfinance through self help groups (SHG) has been recognised internationally as the modern means to combat poverty and rural unemployment, especially among women. It has been accepted that microfinance plays a vital role in reducing poverty since it paves the way for employment which leads to economic development. The most effective tool for assessing the benefits of microfinance is the measurement of its

impact on the poor in terms of employment, income, consumption, assets, nutrition, children's schooling, fertility and use of contraceptives. The objective of microfinance is to help the poor to build their productive capacity, become self-employed and improve their quality of life.

In India, Andhra Pradesh has been playing a pioneering role in harvesting the potential of microfinance institution (MFI) and self help group (SHG) and therefore drew a lots of research attention. This paper focuses on analyzing the effect of some crucial socio-economic factors such as self help group members' age, education, marital status, members yearly income, type of family, member's husband education, husband income, household income, loan amount and number of meeting attended by members, and size of land which a play pivotal role in empowering women members and promoting employment and income generating activities. The data consists of a large sample of 237 households which belong to different social strata from two villages of Chittoor district of Andhra Pradesh, namely, Chinnathippasamudram (CTM) and Ankisettipalle.

### **Literature survey**

Before giving a brief sketch of the existing literature of microfinance studies, it is important to chart its historical evolution in the context of economics study. The concept of providing financial services to low-income people is very old. Informal credit groups have been operating in many countries for several years. These include: the 'Susus' in Nigeria and Ghana, chit funds and Rotating Savings and Credit Associations (ROSCAs) in India, 'tontines' in West Africa, 'pasanaku' in Bolivia, 'hui' in China, 'arisan' in Indonesia, and 'paluwagan' in Philippines. It is believed that, initially, the informal financial institutions emerged in Nigeria way back in the 15<sup>th</sup> century. Such type of institutions then started emerging in Europe during the 18<sup>th</sup> century. One such instance was in 1720, when the first loan fund targeting poor people was founded in Ireland (Seibel, 2005). In 1847, some credit cooperatives were created in Germany, which were serving 1.4 million people by 1910. In 1880s, the British-controlled Government of Madras, in South India, tried to use the German experiment to address poverty in India. This effort resulted in membership of more than 9 million poor to credit cooperatives by 1946. During the same time, the Dutch colonial administrators established a cooperative rural banking system in Indonesia, which eventually became Bank Rakyat Indonesia (BRI), now one of the largest MFI in the world (Schwiecker, 2004).

In the 1970s, a paradigm shift started taking place. The failure of subsidized government or donor-driven institutions to meet the demand for financial services in developing countries led to several new approaches. Bank Dagan Bali (BDB), established in Indonesia in 1970, was the earliest banks to introduce commercial microfinance (Schwiecker, 2004). In 1973, ACCION International, a USA-based NGO, disbursed its first loan in Brazil at commercial interest rate to start a microenterprise. A year later, in 1974, the Self-Employed Women's Association of India (SEWA) started a bank to provide loans to poor women. In 1976, Muhammad Yunus, a professor of Economics at Chittagong University, Bangladesh, initiated an experimental research project of providing credit to the rural poor. He gave a small loan of 856 taka (\$27) from his pocket to 42 poor bamboo weavers and found that the small loan radically changed the lives of these people and they were able to pay back the loan with interest. The success of this idea led Yunus to establish Grameen Bank in 1983 in Bangladesh. This program

showed astonishing growth rates in Bangladesh, particularly during the 1980s and 1990s. It encouraged social innovators and organizations all over the world to begin experiments with different microfinance delivery methods to bring financial services within the ambit of the poor. It has now been adopted worldwide in different countries.

In India, the first initiative to introduce microfinance was the establishment of SEWA in Gujarat. SEWA was registered as a trade union of self-employed women workers of the unorganized sector, in 1972. This trade union established their bank, known as SEWA Bank, in 1974. To establish this bank, 4,000 union members contributed Rs.10 each as share capital. Since then, this bank is registered as a cooperative bank and has been providing banking services to poor women and has also become a viable financial venture. In the midst of the apparent inadequacies of the formal financial system to cater to the financial needs of the rural poor, the first official interest in informal group lending in India took shape during 1986–87 when NABARD supported and funded an action research project on savings and credit management of SHGs of Mysore Resettlement and Development Agency (MYRADA) in Karnataka and Professional Assistance for Development Action (PRADAN) in Rajasthan. For this purpose, a grant of Rs.1 Million (mn) was provided to MYRADA. The results were found to be encouraging. In 1988–89, NABARD undertook a survey of 43 NGOs, spread over 11 states in India, to study the functioning of SHGs and possibilities of collaboration between the banks and SHGs in the mobilization of rural savings and for improving the delivery of credit to the poor (NABARD, 1995). Encouraged by the results of the field-level experiments in group-based approach for lending to the poor, NABARD launched a pilot project of linking 500 SHGs with banks in 1991–1992, in partnership with NGOs, for promoting and grooming SHGs of socioeconomically homogeneous members. In order to meet their credit requirements, in July 1991, Reserve Bank of India (RBI) issued a circular to the commercial banks to extend credit to the SHGs formed under the pilot project of NABARD. During the project period, different NGOs, like Association of Sarva Seva Farms (ASSEFA), Madras, People's Rural Education Movement (PREM), Behrampur, PRADAN, Madurai, and Community Development Society (CDS), Kerala, promoted hundreds of groups. The results were very encouraging. In February 1992, the launching of the pilot phase of the SHG-Bank Linkage Program (SHG-BLP) could be considered as a landmark development in banking with the poor. The pilot project was further extended to Regional-Rural Banks (RRBs) and cooperative banks in 1993. To formalize the mechanism further, the RBI constituted a Working Group in November 1994 to review the functioning of NGOs and SHGs and make suitable recommendations for expanding their activities in the rural areas. Accepting the recommendations of the Working Group in April 1995, Reserve Bank of India (RBI) integrated the SHGs with the mainstream credit operation in rural sector. Further, RBI established a 'Micro Credit Cell' in April 1999 to strengthen credit delivery system for the rural poor and the Government of India accorded national priority to the program through its recognition in the Union Budget. With support from both the government and RBI, NABARD successfully spearheaded the program through partnership with various stakeholders in the formal and informal sectors. Since the time of its origin, NABARD has provided policy guidance, and technical and promotional support mainly for capacity-building of NGOs and SHGs. Realizing the potential in the field of microfinance, the government allowed various private players to provide microfinance in the country.

In response to this requirement, the microfinance movement started in India, with the introduction of self help group-bank linkage programme (SHG-BLP) in the early 1990s. The SHG-BLP model has emerged as the dominant model in terms of number of borrowers and loans outstanding. In terms of coverage, this model is considered to be the largest microfinance model in the world. In India, a range of microfinance models exists. Microfinance services are provided in India through a variety of delivery models ranging from the very popular SHG and cooperative to the adapted models like Grameen Bank and for-profit corporate models. But at present, there are two main models of microfinance delivery in India, viz., the SHG-BLP model and MFI model. Out of these two models, the SHG-BLP model has emerged as the more dominant one, due to its adoption by formal financial institutions like commercial banks, RRBs and cooperative banks (Karmakar, 2010).

The research works pertaining to the very theme of interdependence between microfinance and some socio-economic factors is very rich and it is imperative to sketch a brief narrative of this literature. A survey conducted by the (World Bank in 1999) for the mid-term review of poverty alleviation and microfinance project among 675 micro-credit borrowers in Bangladesh showed that there had been positive change in the economic and social status of the surveyed borrowers. The improvements had been mainly achieved due to the increased level of self-employment of women participants. In Bangladesh, (Khandker et al., 1998) find that program participation has positive impacts on household income, production, and employment, particularly in the rural non-farm sector and that the growth in self-employment was achieved at the expense of wage employment which implies an increase in rural wages. Similarly, (Borbora and Mahanta, 2001) examined the role of microcredit in the generation of income for the poor and assessed the role of SHGs in promoting the savings habit among them.

A considerable increase in annual income of the self help group (SHG) members was found by (Dahiya et al., 2001) in the post-SHG period. The overall increase in annual income was 94.3% in the post-linkage period. The social impact was deep in the form of empowerment of women, educational development of children, and emancipation from social evils like drunkenness of male household members. Puhazehdhi and Sai (2001) found that the involvement of the rural poor in SHGs significantly contributed to their social empowerment, as measured by improvement in their confidence, their position within the family, improved communication skills and other behavioral changes. They found that SHG, as an institutional arrangement, could positively contribute to the economic as well as social empowerment of the rural poor and the impact on the latter was more pronounced than the former. Puhazhendhi and Badatya (2002) stressed on the also social empowerment of sample SHG members, in terms of self-confidence, involvement in decision making, better communication, etc., improved in a significant way.

Sharma (2001) focused on the exclusive role of self help group (SHG) in women empowerment and found that significant changes in the living standard of SHG members have taken place, in terms of increase in income levels, assets, savings, borrowing capacity and income generating activities. Similarly, (Sudha Rani et al. 2002) found that participation of women in the SHGs led to their empowerment in areas like, house-management, leadership, economic status, health and sanitation. The self-confidence among women increased due to participation in the SHGs. Conspicuously, women

were more empowered when their participation was high in meetings and interactions with different officials. Further a few studies an attempt to study the impact of SHGs on the generation of income and employment was done by (Gangaiah et al., 2006), who found that the loans provided by SHGs had a favorable impact on income generation in the village. Kumar et al. (2008) analyzed the impact of microfinance on employment, income and empowerment in Himachal Pradesh. The study found that the first round loan impact is observed in the easy and timely availability of small amount of loans to rural poor women to meet their day-to-day urgent consumption requirements. The study also found that credit alone is not enough to graduate rural households successfully from 'survival activities' (yielding moderate returns) to more productive enterprises. The second round impact is addressed by the improvement of skills, enhancement of production skills and increase in income and employment.

### **Scope of the study**

SHGs are fast emerging as a powerful tool for socioeconomic empowerment of the poor in the rural areas. In India, SHGs represent a unique approach to financial intermediation. The approach combines access to low-cost financial services with a process of self management and development for the women who are SHG members. SHGs are seen to confer many benefits, both economic and social. It enables women to expand their savings and access the credit which banks are increasingly willing to lend. SHGs can also be community platforms from which women become active in village affairs, stand for local elections or take action to address social or community issues. The present study aims to examine how far the program has helped in raising the income and employment levels of rural women. It examines how far the microfinance could explore the possibility of women's participation in decision making, relating to family affairs.

Several studies indicate that self help group programmes often in the form of credit or micro credit schemes and savings have succeeded in changing the lives of poor women by making way for enhanced income and increased self esteem. This is a testable proposition for the state of Andhra Pradesh in India since it has been witnessing a massive growth in SHGs in last few years. This study is undertaken to analyse the structure, conduct and performance of self help groups and their impact on women in two villages in Chittoor district of Andhra Pradesh. In the light of the background provided above, the present study seeks to examine the process of women empowerment and changes in the economic status of SHG members in particular and rural women in general.

### **Data and methodology**

The study is based on primary data and has used multi-stage stratified proportionate random sampling technique for selection of representative district, mandal/taluka, villages and households. The study is conducted on two villages in Chittoor district of Andhra Pradesh namely Chinnathippasamudram (CTM) and Ankisettipalle since these villages accounted for the largest proportion of the SHGs in the district. The primary data was collected with the help of a structured questionnaire with 237 sample SHG households functioning in two villages representing the Madanapally mandal of Chittoor district. The SHG groups are formed and promoted by Self-help group-bank linkages programme (SHG-BLP). The total sample size is 237, out of which 51 are Scheduled Caste/ Scheduled Tribes (SC/STs), 86 are Backward Castes (BCs), 82 are Other Castes

(OCs) and 18 belong to the minority community. The primary data pertains to the year 2010–11. The study is based on a field survey which was conducted during the period May 1 to August 31, 2011.

### Empirical analysis

Since two dependent variables namely, women decision making and income/employment generation activity are qualitative variable, logistic regression<sup>a</sup> model has been employed for analysis of impact of some socio-economic factors on two dependent variables.

### Proximate determinants of women decision making

It is possible that decision making behavior of the SHG members may have undergone changes after the SHG respondents are exposed to the microfinance activities. It is expected that socio-economic factors like SHG member age, marital status, husband's education and training etc. exert considerable influence on the member decision making. It is now hypothesised that the decision making by the SHG members is influenced by socio economic factors like SHG members age, SHG members education, SHG member marital status, SHG members yearly income, SHG member type of family, SHG member's husband education, SHG member's husband income, household income, loan amount and number of meeting attended by SHG members, and size of land owned by them. Accordingly, the following logit model is formulated:

$$\begin{aligned}
 &= a_0 + a_1SHGMAGE_i + a_2SHGMEDCN + a_3MSTATUS \\
 &+ a_4SHGMINCM + a_5FTYPE + a_6HEDCN + a_7HINCOME \\
 &+ a_8HHINCOME + a_9LOANAMT + a_{10}MEETING \\
 &+ a_{11}SIZEOFLAND + Ut
 \end{aligned} \tag{3}$$

where  $e$  = probability (DESMAK = Decision of member to participate in SHG |  $X_i = x_i$  for all  $i$ ) and  $X_i$  denotes  $i$  th explanatory variables.

In the above model, the variables are described as follows:

Binary Variable

DESMAK (Women taken decision in household matters)

= 1 if decision taken by SHG member in household matters

= 0 otherwise

Exploratory Variables

SHGMAGE = SHG members age (in years)

SHGMEDCN = SHG members education (in years)

MSTATUS = 1 if SHG member married

=0 , otherwise (widows)

SHGMINCM = SHG members yearly income (in Rs)

FTYPE = 1 if size of family is more than 3.

=0 otherwise

HEDCN = SHG member's husband education (in years)

HINCOME = SHG member's husband income (in Rs)

HHINCOME = Household Income (in Rs)

LOANAMT = Loan amount (in Rs)

MEETING = 1 if SHG member attending meeting

=0 ,other wise



SIZEOFLAND = land size

$U_t$  = Error term

#### Impact of microfinance on income/employment generation activity

Similarly it is anticipated that income/employment generation activities may also undergo changes as SHG respondents are exposed to the microfinance activities. It is observed that factors such as SHG members age, SHG members education, SHG member marital status, SHG members yearly income, SHG member's husband education, SHG member's husband income, SHG members attending meeting, frequency of taking loan, loan amount, member participating training program, size of land and household assets exert considerable influence on the member generating income/employment. In the light of this background, the following logit model is formulated:

$$\begin{aligned}
 &= a_0 + a_1SHGMAGE_i + a_2SHGMEDCN + a_3MSTATUS \\
 &+ a_4SHGMINCM + a_5HEDCN + a_6HINCOME + a_7HHINCOME \\
 &+ a_8LOANAMT + a_9TRAINING + a_{10}SIZEOFLAND + a_{11}HHASSETS \\
 &+ U_t
 \end{aligned} \tag{4}$$

Where e = probability (ACTIVITY = income/employment generation |  $X_i = x_i$  for all i)

In the above model, the variables are described as follows:

Binary Variable

ACTIVITY = SHG member started income and employment activity

=1 if SHG members started income and employment activity.

=0, otherwise

Exploratory Variables

SHGMAGE = SHG members age (in years)

SHGMEDCN = SHG members education (in years)

MSTATUS = 1 if SHG member married

=0, otherwise (widows)

SHGMINCM = SHG members yearly income (in Rs)

HEDCN = SHG member's husband education (in years)

HINCOME = SHG member's husband income (in Rs)

HHINCOME = household income (in Rs)

LOANAMT = Loan amount (in Rs)

TRAINING = 1 if SHG member participating training program

=0, otherwise

SIZEOFLAND = land size

HHASSET = j = household asset

$U_t$  = Error term

#### Empirical results

The models formulated above [equation (3) and (4)] are estimated with logistic regression technique since in both cases the dependent variables are qualitative in nature. When standard logistic regression technique is employed for both equations log of odd ratio in favour of the event under consideration becomes the dependent variable in both equations. For example, in the first equation dependent variable is the log of odd ratio in favour of taking decision by the member in respect of household activities.

Similarly, in the second equation log of odd ratio in favour of starting employment/ income creation activity against non-generation, is the dependent variable. Estimates of equation (3) are given in Table 1.

A woman is an important player in household matters. It is she who primarily runs the kitchen and looks after the family members-her husband, children, younger siblings and elders (in case it is a joint family). Since she has the basic responsibility of running the household, she can logically expect to have a reasonable say in matters concerning the family. The issues may include: food, clothing, education of children, saving and expenditure to meet social obligations.

Microfinance through SHGs can contribute to women empowerment. Empowerment is a slow and continuous process and the mere joining of SHG does not lead to empowerment. It takes some time to get the full benefits of the programme. This study shows that microfinance program has helped women in increasing their economic empowerment and as a result they have started taking some household firm decisions independently. From table 1 it is evident that out of eleven socio economic factors, six have statistically significant impact on decision making of SHG members. Reported coefficients signify change in log of odd ratio in favour of the decision of member to participate in SHG due to one unit change in each explanatory variable. If income of SHG member grows by one rupee then log of odd ratio in favour of taking decision to join SHG increases by 0.001 units. In a family where the male is the sole earner, he may assert that he alone is 'empowered' to decide on family issues (especially the financial ones). Today, financial stringency is forcing many women to start earning money. There is every possibility that such women would feel that they should have a reasonable say in household issues. Their argument may be that since they too are earning money and are not solely dependent on the male members of the family, they should be allowed to have an important role in household matters. Similarly log of odd ratio

**Table 1 Estimates of impact of social and economic factors on decision making**

Variables	Coefficients	Std. Err	P > Z
Smemage	-0.0096	0.0168	0.567
Smemedcn	-0.0910	0.3464	0.793
Mstatus	-0.8544	0.7823	0.275
Smincome	0.0010	0.0002	0.000
Ftype	0.8372	0.3481	0.016
Hedcn	-0.0802	0.4518	0.859
Hincome	0.0006	0.0002	0.007
Hhincome	-0.0007	0.0002	0.002
Loanamt	-0.0002	0.0010	0.007
Meeting	1.1160	0.5064	0.027
Sizeofland	0.1107	0.0879	0.208
Constant	0.6231	1.0460	0.552
Number of observation	237		
LR chi2 (11)	36.9200		
Prob > chi2	0.0001		
Pseudo R2	0.1177		
Log likelihood	-138.3936		



goes up by 0.8372 units if family size under consideration is large. Family is usually of two types, joint family and nuclear family. Similarly, the study observes that most of the nuclear families have been having more monthly saving than joint families. Log of odd ratio also increases marginally by 0.0006 units if husband's income of the SHG member increases by one rupee. The level of income of a family can have an important bearing on its quality of life. When the income level is low, the expenditure pattern should logically be expected to be low as well (granted that the family does not take loans to meet its expenses and fall into further financial stringency). However, a high level of income does not always guarantee a high quality of life. There is always the risk of the family indulging in wasteful expenditure-at the cost of meeting the more pressing needs. A possible scenario is that in low income families, most of the decisions are 'enforced' ones- to primarily meet the pressing needs. On the other hand, in a high income family, women could enjoy a greater say in household matters. Attending one extra meeting of SHG is found to have positive impact by 0.1160 units over log of odd ratio. In recent times, meetings have come to assume a lot of significance for women. Here, they are able to share experiences and learn about a number of useful issues. Meetings also help in improving the communication skills of the members. The confidence gained from attending meetings can help a woman to become a more important player in domestic matters. However, a negative aspect can come to the fore when the husband starts resenting his wife staying out of the house for a considerable period of time. Household income is found to affect log of odd ratio adversely. This finding is in consonance with economic intuition since a member of any well off family will have lesser chance to join the SHG. Increase in loan amount affects odd ratio adversely. Other variables like marital status of members and their age as well education status, husbands' education status, size of land holding etc. have no considerable impact on decision making of SHG membership. Similarly estimates of equation (4) are given in Table 2.

Microfinance helps the poor in financial distress to become self-employed through rural non-farm sector activities of their choice. Moreover, microfinance is not limited to rural society or developing countries only. It is equally applicable to semi-urban areas and developed countries. Unemployment and poverty pose major challenges for any developing country and India is no exception to this phenomenon. This is because of the gap between demand for and supply of credit for the poor to start economic activities. The rural non-farm employment has acquired greater importance in economic development in recent times. It plays a positive role in the alleviation of poverty and generation of employment. The growth of the rural non-farm sector had a positive impact on poverty alleviation and benefited many sections of the rural society. The growth of rural non-farm sector can provide assets, employment and income to the rural poor. It also provides an opportunity for rural women to take up remunerative work beyond casual labor and household labor. In India, a large section of the population suffers from malnutrition, unemployment and lack of education and healthcare. In rural India, the high rates of illiteracy and low economic status of poor people underline the need for increasing their earning capacity by providing income-generating avenues. Rural non-farm sector provides opportunities to the rural poor to improve their nutritional level, health, education and social status. As employment opportunities increase, automatically purchasing power will increase which in turn will lead to economic growth.

**Table 2 Estimates of impact of social and economic factors on income/employment generation activity**

Variables	Coefficients	Std. Err	P > Z
Smemage	0.0777	0.0264	0.003
Smemedcn	0.5443	0.4958	0.272
Mstatus	1.2740	1.0200	0.213
Smincome	0.0019	0.0003	0.000
Hedcn	1.1270	0.6520	0.084
Hincome	-0.0014	0.0004	0.000
Hhincome	0.0002	0.0002	0.401
Loanamt	0.0005	0.0001	0.001
Training	0.3718	0.5862	0.526
Sizeofland	-0.2101	0.1604	0.190
Hhassets	0.0001	3.51e-06	0.003
Constant	-8.7800	1.7370	0.000
Number of observation	237		
LR chi2 (11)	182.64		
Prob > chi2	0.0000		
Pseudo R2	0.5559		
Log likelihood	-72.95193		

The most effective tool for assessing the benefits of microfinance is the measurement of its impact on the poor in terms of employment, income, consumption, assets, nutrition, children's schooling, fertility and use of contraceptives. The objective of microfinance is to help the poor people to build their productive capacity, become self-employed and improve their quality of life. Rural Non-Farm (RNF) sector, by providing employment to the rural population reduces poverty and improves employment opportunities for the people from countryside, especially when it takes place in a relatively egalitarian structure. RNF sector also equalizes income distribution both between rural and urban areas as well as within the rural areas. In any activity, be it agriculture or non-farm sector, increase in income and employment opportunities depends on the potential of employment. It has been documented that the loans provided by the SHGs had a positive impact on different socioeconomic groups in generating income and employment.

From Table 2 it is observed that income/employment generation activity is significantly influenced by five socio-economic factors namely, age (smemage) and annual income of the SHG member (smincome), income of member's household (hincome), amount of loan, and household assets (hhassets). Apart from these, educational status of husband (hedcn) of the SHG member has near-significant impact on income/employment generation. From the table it can be inferred that log of odd ratio in favour of income/employment generation goes up by 0.078 units and 0.002 units if age of SHG member increases by one year and income of member goes up by one rupee respectively. Increase in members household income has detrimental impact on log of odd ratio in favour of employment/income generation by 0.0002 units whereas one unit increase in household asset has small positive effect of 0.0001 units on log of odd ratio. Other socio-economic factors are found to be statistically

insignificant. It concluded that microfinance programme has helped the women participations to increase their contribution to the household income. There is a substantial increase in income of the participant women due to adoption of the programme. The contribution to the family income helps women to become economically independent and a decision making in the household expenditure.

### **Concluding remarks**

Microfinance system has brought about an unprecedented change in the life style of women in rural areas. If the credit system is streamlined and effectively run, it will transform rural life. The great poet Gurajada said that modern women would rewrite history in a new way. Empowerment through SHGs would impact rural women by giving them immense confidence to mould their lives and that of their families. One should be cautious of middlemen in this system since the very performance of the system will be sapped if corruption creeps into the microfinance system. The present study analyses the manner in which the credit system was operating in the regions and the data given at every point illustrates the functioning of the system in different regions among the regions. In a country like India, there are innumerable divisions in the social system; it is not an easy to bring change all of a sudden, but initiatives like the SHG microfinance credit system can remove many hurdles in the path of progress. So, proper management and leadership will contribute to realize the ideals. On the other hand, the liberalized banking system also should be better geared to meet the needs of the poor and deprived people. Just as water should irrigate the parched land, but not the wet land, the banks should do the function like ensuring water flowing to areas where there is scarcity than abundance. Banks should take a liberal view in extending their cooperation in rebuilding rural areas. The government also should take the steps to direct the banks and make it mandatory to accord greater priority to rural India.

This paper examines the influence of some important social and economic factors on two qualitative variables, namely, decision making in the family and participation in income/ employment generating activities of SHG members in two villages of Chittoor district of Andhra Pradesh. Empirical findings suggest that participation and decision making by women members is positively influenced by family size, income of the members as well as their husbands, and number of meetings attended by SHG members, whereas amount of loan granted, and total household assets are found to affect the decisions making of women members adversely. In case of income/employment generation activities, age and income of the member, amount of loan and household assets have positive impacts but husband's income causes a detrimental effect. Policy measures such as increase in frequency of SHG meeting, SHG training programme, increase in loan amount and ensuring effective utilization of the loan, may be the useful initiatives to enhance women empowerment, income/employment opportunities.

### **Endnote**

<sup>a</sup>A note on logit model is briefed in the Appendix.

### **Appendix**

#### **The Logit Model**

Logistic regression was proposed in the year 1970 as an extension of traditional ordinary least square method and to overcome its limitation in incorporating dichotomous or

binary variables as dependent variables. The logit models become extremely popular in the fields of social sciences because a large number of variables like gender, caste, marital or educational status etc., come under its domain are qualitative in nature. Social scientists like (Afifi and Clerk, 1990), (Ryan, 1997) and (Tabachnick and Fidell, 2001) recognised and acknowledged the importance of logit model as a useful alternative to linear regression modeling technique.

Let us consider a binary response variable  $Y$  and an explanatory factor, say,  $X_i$ . A logit model predicts the log of odd ratio of  $Y$  from predetermined variable  $X_i$ . A simple logit model can be represented as:

$$= \alpha + \beta x = \log(\text{odds}) \quad (1)$$

Where  $e$  = probability ( $Y = \text{outcome of interest} | X = x$ ) =

Extending the logit model for multiple predictors, a complex logistic model can be constricted as follows-

$$= \alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k \quad (2)$$

Where  $e$  is the probability of occurrence of the event and all  $\beta_i$  are slope coefficients capturing marginal effect of each explanatory variables and  $\alpha$  is intercept term. All the parameters are estimated by maximum likelihood (ML) method.  $(e/1-e)$  is called odd ratio in favour of the event under consideration. Interpretation of all  $\beta_i$  coefficients is a little tricky in logit models. For example interpretation of coefficient  $\beta_2$  in equation 2 is as follows- a unit change in  $x_2$  will cause  $(e^{\beta_2} - 1) * 100$  percentage change in odd ratio in favour of the event under consideration. Similarly other slope coefficients can be interpreted in the model.

#### Abbreviations

ACCION: Americans for Community Co-operation in Other Nations; ASSEFA: Association of Sarva Seva Farms; BC: Backward Class; BDB: Bank Dagan Bali; BRI: Bank Rakyat Indonesia; CDS: Community Development Society; CTM: Chinnathippasamudram; DESMAK: Women taken decision in household matters; FTYPE: Type of family; HEDCN: Husband education; HHINCOME: Household Income; HHASSET: Household asset; HINCOME: Husband income; LOANAMT: Loan amount; MCP: Micro Credit Programme; MFI: Microfinance Institution; mn: Million; MSTATUS: Marital Status; MYRADA: Mysore Resettlement and Development Authority; NABARD: National Bank for Agriculture and Rural Development; NGO: Non-Governmental Organization; OC: Other Class; PRADAN: Professional Assistance for Development Action; PREM: People's Rural Education Movement; RBI: Reserve Bank of India; RNF: Rural Non-Farm; ROSCAs: Rotating Savings and Credit Associations; RRB: Regional Rural Bank; SC: Scheduled Caste; SC/STs: Scheduled Caste/Scheduled Tribes; SEWA: Self-Employed Women's Association; SHG: Self-Help Group; SHG-BLM: Self-Help Group-Bank Linkage Model; SHG-BLP: Self-Help Group- Bank Linkage Programme; SHGMAGE: Self-Help Group members age; SHGMEDCN: Self-Help Group members education; SHGMINCM: Self-Help Group members yearly income; USA: United State of America; ST: Scheduled Tribe; U: Error term.

#### Competing interests

The authors declare that they have no competing interests.

#### Authors' contributions

VL collected primary data, RNP did empirical analysis, VL and RNP together have worked the whole paper. Both authors read and approved the final manuscript.

#### Author details

<sup>1</sup>Faculty of VJIM, Hyderabad and Research Scholar, School of Economics, University of Hyderabad, Hyderabad and , Prof. C.R. Rao Road, Gachibowli, Hyderabad 500 046, India. <sup>2</sup>Research Scholar, School of Economics, University of Hyderabad, Prof. C.R. Rao Road, Gachibowli, Hyderabad 500 046, India.

Received: 28 February 2014 Accepted: 2 July 2014

Published online: 29 August 2014

#### References

Afifi, A. A., & Clerk, V. (1990). *Computer Aided Multivariate Analysis* (2nd ed.). New York: Va Nostrand Reinhold.

- Borbora, S., Mahanta R. (2001). Micro Finance Through Self-Help Groups and its Impact: A Case of Rashtriya Gramin Vikas Nidhi Credit and Saving Programme in Assam (2001). *Indian Journal of Agricultural Economics*, 56(3), 449–450.
- Dahiya, P. S., Pandey, N. K., Anshuman, K. (2001). Socio-economic evaluation of self-help groups in solan district of himachal pradesh: impact, issues and policy implications. *Indian Journal of Agricultural Economics*, 56(3), 486–487.
- Gangaiah, C., Nagaraja, B., & Vasudevulu Naidu, C. (2006). *Impact of Self-Help Groups on Income and Employment: A Case Study, Kurukshetra* (pp. 18–23).
- Karmakar, K. G. (2010). *Micro Finance in India*. New Delhi: Sage Publications.
- Khandker, S. R., Hussain, S., & Zahed, K. (1998). Income and employment effects of microcredit programmes: village-level evidence from Bangladesh. *Journal of Development Studies*, 35(2), 96–124.
- Kumar, V., Sharma, R. K., & Sharma, H. R. (2008). Impact of micro financing on income and employment: micro evidence from Himachal Pradesh. *Financing Agriculture: A National Journal of Agriculture and Rural Development*, 40(1), 3–8.
- Puhazhendhi, V., & Badatya, K. C. (2002). *SHG-Bank Linkage Programme for Rural Poor in India: An Impact Assessment*. Mumbai: Microcredit Innovations Department, National Bank for Agriculture and Rural Development.
- Puhazhendhi, V., & Sai, S. (2001). Economic and Social Empowerment of Rural Poor Through Self-Help Groups. *Indian Journal of Agricultural Economics*, 56(3), 450–452.
- NABARD. (1995). *Report of the Working Group on Non-Governmental Organisations and Self-Help Groups*. Mumbai: National Bank for Agriculture and Rural Development.
- Ryan, T. P. (1997). *Modern Regression Method*. New York: Wiley.
- Schwiecker, S. (2004). *The Impact and Outreach of Microfinance Institutions: The Effect of Interest Rates*. Germany: Masters Degree Thesis, University of Tübingen. <http://www.scribd.com/doc/92714/Microfinance>.
- Seibel, H. D. (2005). *Does History Matter? The Old and the New World of Microfinance in Europe and Asia*, Working paper/ University of Cologne, Development Research Center, No. 2005, 10. [https://www.econstor.eu/dspace/bitstream/10419/23654/1/2005-10\\_The\\_Old\\_and\\_the\\_New\\_World\\_in\\_Europe\\_and\\_Asia.pdf](https://www.econstor.eu/dspace/bitstream/10419/23654/1/2005-10_The_Old_and_the_New_World_in_Europe_and_Asia.pdf).
- Sharma, K. C. (2001). Micro financing through self- help groups. *Indian Journal of Agricultural Economics*, 56(3), 460–461.
- Sudha Rani, K., Uma Devi, D., & Surendra, G. (2002). SHGs-Micro-credit an empowerment. *Social Welfare*, 48(11), 18–22.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics* (3rd ed.). Needham Heights, MA: Allyn and Bacon.
- World Bank. (1999). *Mid-Term Review of the Poverty Alleviation and Microfinance Project Dhaka*, World Bank.

doi:10.1186/s40497-014-0011-6

**Cite this article as:** Lavoori and Paramanik: Microfinance impact on women's decision making: a case study of Andhra Pradesh. *Journal of Global Entrepreneurship Research* 2014 **4**:11.

Submit your manuscript to a SpringerOpen<sup>®</sup> journal and benefit from:

- Convenient online submission
- Rigorous peer review
- Immediate publication on acceptance
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your next manuscript at ► [springeropen.com](http://springeropen.com)