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## **Group Dynamics and Collective Performance of Self-help Groups under Different Microcredit Delivery Models in Karnataka**

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### **Abstract**

Microcredit through self-help groups (SHGs) has emerged as a springboard to reach the rural poor. In India, it is being practised in different ways and monitored in three different arrangements based on the SHGs linkage with the supporting organizations. They are: Model-I: Bank-promoted, Model-II: Government-promoted, and Model-III: NGO-promoted. The paper has examined differences in the collective performance and the pattern of relationship of the individual characters, group variables and economic variables among the three micro-credit delivery models. The analysis is based on the data from 90 members from nine SHGs operating in three taluks in the Davanagere district of Karnataka state. The categorical regression has revealed that cooperation, consensus among members, knowledge on SHGs linkages and transparency in activities significantly influence the collective performance. It has also been found that SHGs can improve their performance by creating awareness in its members on the SHG purpose and by giving regular updates of information. The paper has recommended that, while dealing with the SHGs and its delivery models, context-specific difficulties and ground realities need to be taken care essentially.

**Key words:** Collective performance, self-help groups (SHGs), microcredit, categorical regression, India

**JEL Classification:** D02, D14 and G21

### **Introduction**

A self-help group, as an informal association of individuals who come together voluntarily for promotion of economic and social objectives (Singh, 1995), has been viewed as a major development tool for meeting the rural credit requirement and helping in poverty alleviation (Bi and Pandey, 2011). In India, the need for rural credit was recognised even before independence. Several efforts were made by the government to bring the rural sector under formal financial system and to meet its credit needs

(Bharamappanavara, 2013). However, these efforts have only been partially successful and India still has the second largest unbanked population in the world (RBI, 2007).

The first initiative on the use of self-help groups (SHGs) concept for banking, finance and development was taken up by the National Bank for Agriculture and Rural Development (NABARD) in 1986-87 on a pilot basis, and since 1991 it is being implemented by the Reserve Bank of India. It is viewed as a good means from the perspective of SHG members, who do not have direct access to bank loans, and also from the viewpoint of financial institutions in terms of loan recovery success, since members with loans will

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experience neighbourhood (group) pressure to repay the loans. In many of the cases, microcredit has helped the SHGs to start self-employment projects in groups. Presently, in India it is being practised in different ways and SHGs are categorised and monitored in three different arrangements based on how these are linked with their supporting organizations (Bharamappanavara *et al.*, 2014). They are: Model-I: Bank-promoted, Model-II: Government-promoted, and Model-III: NGO-promoted. In the paper, they are referred as Bank-promoted, Government-promoted and NGOs-promoted model. Today, financing through SHGs has become the best medium to include the rural poor in the formal financial sector. For the past one decade, SHG banking is becoming the primary mode of microfinance in India (Adolph 2003; Christen, 2005).

The microcredit through SHGs had a modest beginning in India and now it has become “macro” in its approach (Bharamappanavara, 2013; Kabir, 2002). The SHGs microcredit is reaching over six million families under the above-mentioned three models and is primarily evolved in linking them with banks (Adolph, 2003; Robert, 2005). Each of the microcredit models is operating under a different framework of rules and regulations, starting with group formation. These models differ in attributes like the amount of government support, main purpose of loans, amount of loan disbursement, interest rate, mode of repayment, purpose of group formation, functioning, etc. (Roul, 1996; UNESCO, 2004) and hence, they differ in their performance. Moreover, there are wide differences in the outreach of these models (NABARD, 2007). On the other hand, satisfaction with the supportive environment significantly contributes to the performance of SHGs, which indicates that satisfaction with the working nature of supporting institution plays an imperative role in functioning of SHGs (Singh *et al.*, 2007).

A performance analysis studies the factors and the relative importance (Pratt, 1987) of these factors, which are vital for the success of SHGs. Furthermore, the research emphasizes that certain indicators are of high relevance for SHG group cohesion and their efficient isolation, and control of these indicators influences the changes in performance and productivity of the group considerably (CGAP, 2007; Louis *et al.*, 2002; Purnima and Reddy, 2007)

Since past three decades, looking into the outreach of SHGs microfinance concept, several studies have been undertaken by many of the earlier researcher, especially studies related to economic performance of SHGs. Indeed, such studies are done focussing mainly on the loan repayment capacities and economic empowerment. There are also a few studies which focus on the performance of SHGs from the joint perspective of group characteristics and economic aspects (Government of Kerala, 2004; Singh *et al.*, 2007; Sultana *et al.*, 2011).

### **Performance of SHG in India: Literature Insight**

The efficient functioning of SHGs depends on a mixed bag of factors which can be broadly summarized as: individual characteristics, group variables and economic variables (Singh *et al.*, 2007; Sultana *et al.*, 2011; Nagaraj *et al.*, 2009). The economic variables like risks involved in SHGs activities (Royal Tropical Institute, 1987), transparency in SHGs activities (CGAP, 2007), cost in acquiring the SHGs credit (Bardhan and Dabas, 2007) are important elements of collective action influencing group functioning and performance of SHGs.

The role of individual characteristics like trust across the members (Van Bastelaer, 2000; Jones, 2004), motivation to join SHGs (Purnima and Narayanareddy, 2007), attendance in SHG meetings and activities (Bardhan and Dabas, 2007) influence the performance of SHGs.

The performance of SHGs also differs depending on the influence of structural and functional characteristics of the group. The structural variables include transparency in administration and management, record keeping and leadership (CGAP, 2007; Sarada *et al.*, 2008; Narayanaswamy *et al.*, 2007). The functional variables that influence the SHG's performance are frequency of group meetings, timely action on training, support and service delivery.

The group characteristics such as group formation criteria, freedom of participation, decision-making, face-to-face communication, group homogeneity, conflict management and empathy have been found to play an important role in indicating the effectiveness that brings about group cohesion and better performance of SHGs (Kerr and Kaufman, 1994;

Purnima and Narayanareddy, 2007; Hare, 1976; Nixon II, 1979; Cole, 1987). Hence, conducting research with few important potential variables, which have been posited to have strong causal relationship, is recommended by several researchers (Agarwal, 2002; Gibson *et al.*, 2005; Hayes and Ostrom, 2005) forms the baseline for current study.

In this paper, after identifying the gap in past studies on SHGs performance, we have evaluated the factors influencing collective/ group functioning of the SHGs. By taking a holistic approach to analyse the functioning of SHG, the paper has been focused on a range of economic factors, group dynamics variables and also on the individual member characteristics. Since there exist considerable differences among the different models, promoting SHGs (bank-promoted, government-promoted and NGOs-promoted), we hypothesized that there also exists differences in group functioning and factors influencing functioning of these three types of SHGs. For analysing group functioning, a comparative approach among the three models has been adopted.

## Methodology

### Study Area

The study was conducted in three taluks, viz. Harapanahali, Jagalur and Davangere of the Davanagere district in Karnataka (India). Davanagere district was purposively selected based on the distribution of three microcredit models. Located in the central part of Karnataka, the Davanagere district with a geographical area of 0.6 Mha and 70 per cent rural population is predominantly agrarian (Government of Karnataka, 2008). The literacy rate of the district (67.2%) is on par with the literacy rate of India (63.0 %) (Government of India, 2014).

Although micro financing through SHGs has been existing in the district since 1992, only 50-60 per cent of its total rural credit demand is met by formal sources, and the rest is met by informal sources (NABARD, 2009). Establishment of linkages between banks and SHGs under three different microcredit models is intended to solve the problems encountered by banks in extending non-collateral credit to the rural poor. There are 19 NGOs operating in the district to organize and link rural people to SHGs and to establish their

linkage with nine banks. There are 5321 SHGs in the district which are credit linked under the above three different models (NABARD, 2013).

### Sample Frame and Data Source

Stratified random sampling was conducted based on the three-microcredit delivery models considered for the study. The sample frame consisted of three taluks, each with three randomly selected SHGs covering three different microcredit delivery models. Hence, a total of nine SHGs were sampled from the district. Further, 10 members from each SHG were selected randomly, reaching a total of 90 members as sample respondents. The required data were collected from these SHG members using structured comprehensive and pre-tested questionnaires by personal interview method. Apart from this, a semi-structured questionnaire was also used to collect detailed information about individual SHGs at group level.

### Dependent Variable

To measure and compare the collective group performance of the SHGs, an ordered nominal scale was developed. The variables used for scaling were modified and adapted for the study from CGAP (2007) (also see Bharamappanavara, 2010). The variables considered were: attendance in meetings, transparency in transactions, loan repayment, savings, existence and implementation of group norms and rules. Based on the response of the members to these variables, ordered nominal scale was constructed with equal weights. The dependent variable was developed on a 5-point scale as summarized in Table 1. The 'Outstanding' performance was represented by the highest value ('5') of the scale and 'poor' performance by the least value ('1') of the defined scale.

### Independent Variables

The variable determining the collective group performance was measured considering many of the variables. Further, during estimation, the collective group performance ( $y$ ) of SHGs, hypothesized to be influenced by individual/personal expectation indicators ( $x_i$ ), group dynamics indicators ( $w_j$ ), and economics indicators ( $v_k$ ) of the SHGs, which can be represented by Equation (1):

**Table 1. Description of scaling defining the collective group performance of the SHGs**

Ranks	Description
Outstanding	<ul style="list-style-type: none"> <li>All members attend scheduled meetings on a regular basis</li> <li>All members are aware of all transactions</li> <li>Regular savings and repayments of loan without any default</li> <li>Group norms exist and are followed strictly in the group</li> <li>SHG should have accessed atleast one loan cycle from bank or federation</li> </ul>
Above average	<ul style="list-style-type: none"> <li>Almost all members attend meetings on a regular basis</li> <li>Almost all members are aware of all transactions</li> <li>Regular meetings, savings and regular payments</li> <li>Group norms exist, most of them are implemented</li> <li>SHG should have been eligible for loan from bank or federation at least once</li> </ul>
Average	<ul style="list-style-type: none"> <li>More than half of the members attend meetings on a regular basis</li> <li>More than half of the members are aware of all transactions</li> <li>Regular, but unscheduled meetings</li> <li>Group norms exist but not all rules are properly implemented</li> <li>SHG should have applied for loans from banks or federation atleast once</li> </ul>
Below average	<ul style="list-style-type: none"> <li>Group meetings happen but many times members' participation is irregular</li> <li>Most of the members are not aware of most of the transactions</li> <li>Savings are done, but do not articulate the group norms</li> <li>Groups norms exists formally, but most of the rules are not properly implemented</li> </ul>
Poor	<ul style="list-style-type: none"> <li>Group functions, but many of the members do not attend meetings on a regular basis</li> <li>Savings and loan repayments are highly irregular</li> <li>Many members are not aware of all transactions</li> <li>Most of the rules are not properly implemented</li> </ul>

Source: Adapted from Bharamappanavara (2010)

$$y = f(x_i, w_j, v_k) \quad \dots(1)$$

The study considered four important independent variables under each of the three indicators that were measured categorically, as either nominal or ordinal. The description of these variables and the categories for generating the data are given in Table 2. Since, the collected independent variables were having mixed measurement scales, categorical regression was applied to analyse the factors influencing the collective group performance in the current paper.

### Empirical Estimation

Categorical regression can describe the relationship between a response variable and a set of predictors when data simultaneously includes nominal, ordinal, and numerical variables (Gifi, 1990; Meulman and Heiser, 2009). We used the CATREG (Categorical Regressing using Alternating Least Square) method by

using SPSS. The CATREG procedure can accommodate variables which are mixed at the measurement levels. This method quantifies the categorical data by rescaling the categories into numerical values in a non-arbitrary way, so that the quantifications reflect the characteristics of the original categories (Gifi, 1990). These transformed interval variables are analysed to find optimal linear regression equation such that model fit is maximized. The procedure is robust in results, even when there are more predictors in relation to the sample size (Meulman and Heiser, 2009). However the analysis yields coefficients, which are dependent on the arbitrary coding of the categorical variables, hence making comparison of the coefficients (of similar variables) across studies is difficult. The specifications of the variables used in the categorical regression for three SHG linkage models are given by Equation (2):

**Table 2. Description of independent variables and scale considered in the analysis**

Indicator	Vector	Independent variable	Scale
Group dynamics	$w_1$	Nature of SHG	Caste-based:1, Occupation-based: 2, Age-based: 3, Location-based: 4
	$w_2$	Freedom of participation	Very actively: 1, Actively: 2, Seldom: 3, Never: 4
	$w_3$	Communication in SHG	Very good: 1, Always: 2, Sometime: 3, Very bad: 4, Never: 5
	$w_4$	Decisions taken in the SHG	Common consensus after discussion -1; Decided by majority-2; Leaders and committee members-3; As per norms from authority-4
Individual preference	$x_1$	Purpose for joining	Financial security-1; To enhance social status-2; To increase social participation-3; To increase family business-4
	$x_2$	Motivation to become member	Neighbours-1; Friends-2; SHG members-3; Officials of NGO-4/bank-5/government-6; Relatives-7
	$x_3$	Attending meetings	Always-1; Sometimes-2; Rarely-3; Never-4
	$x_4$	Trust in other members	Very good-1; Always-2; Sometime-3; Very bad-4, Never-5
Economic	$v_1$	Risk involved	Least risk-1; Less risk-2; Some risk-3; More risk-4; Most risk-5
	$v_2$	Credit/saving transparency in activities	Always-1; Sometimes-2; Rarely-3; Never-4
	$v_3$	Cost involved in acquiring credit	Least expensive-1; Less expensive-2; Expensive-3; Most expensive-4
	$v_4$	Record maintenance	Marginal-1; Below average-2; Average-3; Above average-4; Complete and up-to-date-5; Virtually no errors-6

$$y = \sum_{i=1}^4 \beta_i x_i + \sum_{j=1}^4 \beta_j w_j + \sum_{k=1}^4 \beta_k v_k + \epsilon \quad \dots(2)$$

where,  $y$  is the collective group performance,  $\epsilon$  is the stochastic error;  $x_i$ ,  $w_j$ , and  $v_k$  are the vectors of dependent variables as defined before. The estimated standardized coefficients ( $\beta$ ) indicate whether the predicted response increases or decreases when the predictor increases if all other predictors are constant. The category coding used determines the interpretation of the coefficients, as well as the meaning of a change in a predictor. The value of the coefficient reflects the amount of change in the predicted preference ranking. The procedure standardizes all variables and hence the estimated coefficients are standardized coefficients (Clarkberg *et al.*, 2008).

In addition to the regression coefficients, Pratt's measure of relative importance — greater individual importance relative to other variable (Pratt, 1987) — helps in interpreting predictor contributions to the

regression. In contrast to the standardized coefficients, Pratt's measure can define the importance of predictors additively, meaning that importance of a group of regressors is the summation of individual regressors in the group. Partt's measure can be negative, which does not signify negative importance, but a regression situation which is complex for a single measure (Thomas *et al.*, 1998).

**Results and Discussion**

The relative and absolute frequencies of key socioeconomic characteristics such as age, education, marital status, type of family, family size, occupation, caste and annual income are summarized in Table 3. It is evident that on average the respondent members were relatively similar across models in many of their socioeconomic conditions, yet, some differences existed with respect to their caste and occupation. Although, the proportion of respondents working as agricultural labour seemed to be different across

**Table 3. Socio-economic profile of sample members of SHGs**

(n=30, N=90)

Particulars	Bank-promoted model	Government-promoted model	NGO-promoted model
<b>Age</b>			
Young (below 35 years)	10 (33.33)	6 (20.00)	10 (33.33)
Middle (36–55 years)	17 (56.67)	20 (66.67)	20 (66.67)
Old (56 years & above)	3 (10.00)	4 (13.33)	-
<b>Education</b>			
Illiterate	20 (66.67)	20 (66.67)	22 (73.33)
Primary school	6 (20.00)	8 (26.67)	4 (13.33)
High school and above	4 (13.33)	2 (6.67)	4 (13.33)
<b>Marital status</b>			
Unmarried	4 (13.33)	1 (3.33)	-
Married	24 (80.00)	26 (86.67)	23 (76.67)
Widows	1 (3.33)	3 (10.00)	6 (20.00)
Divorced	1 (3.33)	-	1 (3.33)
<b>Type of family</b>			
Nuclear	21 (70.00)	29 (96.67)	30 (100.00)
Joint	9 (30.00)	1 (3.33)	-
<b>Family size</b>			
Small (up to 4 members)	3 (10.00)	7 (23.33)	6 (20.00)
Medium (4–6 members)	24 (80.00)	18 (60.00)	18 (60.00)
Large (7 and above members)	3 (10.00)	5 (16.67)	6 (20.00)
<b>Occupation</b>			
Agriculture	11 (36.67)	17 (56.67)	6 (20.00)
Agricultural labour	16 (53.33)	12 (40.00)	22 (73.33)
Housewife	2 (6.67)	-	-
Non-agricultural labour	1 (3.33)	1 (3.33)	2 (6.67)
<b>Religion</b>			
Hindu	29 (96.67)	29 (96.67)	26 (86.67)
Muslim	1 (3.33)	1 (3.33)	4 (13.33)
<b>Caste</b>			
SC/ST	10 (33.33)	14 (46.67)	26 (86.67)
OBC	9 (30.00)	16 (53.33)	4 (13.33)
General	11 (36.67)	-	-
<b>Annual income (₹)</b>			
Up to 11,500	8 (26.67)	12 (40.00)	13 (43.33)
11,500–30,000	19 (63.33)	15 (50.00)	15 (50.00)
Above 30,000	3 (10.00)	3 (10.00)	2 (6.67)
Average members/SHG	16	16	17

Source: Authors' compilation (2009)

Note: Figures within the parentheses indicate the percentage of the respective sample sizes. "n" indicates delivery model-wise sample.

"N" indicates total study sample.

models, it did not have strong effects on income. Then, the summary statistics on the variables selected to study the collective group performance across three microcredit models is presented in Table 4. The key observation is that there is no strong confounding of the variables across models. The collective group performance was the lowest in government-promoted model and highest in bank model. Further, the value of R-square of the fitted regression (Table 5) of the optimally transformed predictors in all the models suggested an overall good fit.

In the bank-promoted model, the individual preference indicator variables had a higher collective influence on the group performance of the SHG, followed by the group dynamics. Across them, the motivation to join SHG had the highest relative importance. The performance was reported to be high if the motivation was by family members/relatives, followed by motivation from supporting agencies and other members. In the bank-promoted model, nature of SHG formation ( $w_1$ ) was the second most influential factor affecting the group performance and location-based SHGs performed better than age-, occupation- and caste-based groups. Active participation ( $w_2$ ) and very good trust ( $x_4$ ) among the members also enhanced the group performance of bank-promoted SHGs. Even though the relative importance of the purpose of joining the SHG and the cost of acquiring credit was lower than the above variables, they had a significant role in explaining the performance of SHG. Members who joined the SHG with the purpose of financial security contributed significantly to the better performance of the group in bank-promoted SHGs than members joining with the intention of attaining social status. Similarly, least expensive credit options could achieve higher collective performance than expensive credit options in all the three models.

In government-promoted model, the individual preference indicators showed a higher relative importance, where the groups with members attending the meetings regularly are exhibiting higher contribution to the group performance, followed by the groups where members attending the meetings was sometimes, rarely, and never. This indicated that equality in responsibility among members was a significant factor. Supporting the present results, Bardhan and Dabas (2007) have also reported that groups can perform better if they ensure compulsory

attendance of the members in the regularly held meetings. When the nature of SHG was caste- and location-based, the group performance increased in the government-promoted model. The performance of the government-promoted SHGs increased with decrease in the risk involved.

In NGO-promoted model, trust among the members, communication among the members and the process of decision-making, which indicated transparency in the group, were the most important determinants of group performance. The performance of the group was found to be highest if the transparency in SHG activities was always ensured. These findings are in conformity with the Narayanaswamy *et al.* (2007) study stating that transparency in the functioning of SHGs significantly contributes to the variation in the performance of SHGs at the group level.

Decision-making and activeness of the group were more in the bank-promoted model and government-promoted model, compared to NGO-promoted model. The group performance in bank-promoted and government-promoted models was observed to be the highest where members participation was very active.

The results have revealed that trust across members had a direct impact on the social performance. As the trust weakened, the collective group functioning also declined in all the three models, indicating that the social performance of groups is directly related to the trust among members of SHGs. Similar results were observed by Jones (2004), who explained how decreased trust reduces the cooperation in the group and, in turn, its performance.

The communication in the SHG directly influenced the overall performance of the group in government-promoted and NGO-promoted models, which could be due to less interaction by the government agency workers and NGO officials with all the members. These results are in line with Kerr and Kaufman's (1994) findings that face-to-face communication enhances solidarity in the group and enhances better functioning through good cooperation. The performance in NGO-promoted and government-promoted models was observed to be more, and the decisions were taken based on the consensus, arrived at after discussing the matter in the SHG meeting. This was followed by the groups which took decisions based on the majority after discussing the matter in the SHG and based on leaders



Table 4. Summary statistics of model variables

Variables	Bank-promoted model			Government-promoted model			NGO-promoted model		
	Mean	S.D.	Max	Mean	S.D.	Max	Mean	S.D.	Max
Collective group performance	4.133	0.346	5	3.011	0.011	3	3.333	0.479	3
Nature of SHG ( $w_1$ )	2.267	1.143	1	2.333	1.348	1	1.733	1.202	1
Freedom of participation ( $w_2$ )	1.200	0.153	1	1.291	0.193	1	1.310	0.280	1
Communication in SHG ( $w_3$ )	1.600	0.675	1	1.367	0.615	1	1.633	0.556	1
Decisions taken in the SHG ( $w_4$ )	2.133	0.937	1	2.400	0.675	1	2.367	0.890	1
Purpose for joining ( $x_1$ )	2.467	3.803	1	1.600	2.078	1	1.067	0.254	1
Motivation to join ( $x_2$ )	2.100	1.494	1	2.767	2.029	1	1.867	1.042	1
Attending meetings ( $x_3$ )	1.133	0.434	1	1.101	0.109	1	1.187	0.110	1
Trust in other members ( $x_4$ )	1.400	0.563	1	1.133	0.346	1	1.400	0.563	1
Risk involved ( $v_1$ )	1.400	0.724	1	2.067	1.015	1	1.833	1.020	1
Credit/saving transparency ( $v_2$ )	1.101	0.305	1	1.000	0.000	1	1.099	0.191	1
Cost of acquiring the credit ( $v_3$ )	1.667	0.479	1	1.333	0.479	1	2.000	0.830	1
Record maintenance ( $v_4$ )	1.133	0.434	1	1.133	0.507	1	1.200	0.551	1

**Table 5. Categorical regression results for social performance (Collective group functioning as dependent variable)**

Predictors	Bank-promoted model		Government-promoted model		NGO- promoted model	
	Std. $\beta$	Pratt's	Std. $\beta$	Pratt's	Std. $\beta$	Pratt's
<b>Group dynamics</b>						
Nature of SHG ( $w_1$ )	0.517* (0.126)	0.307	-1.280* (0.222)	0.191	0.278 (0.161)	0.047
Freedom of participation ( $w_2$ )	-0.316* (0.118)	0.129	-0.929* (0.208)	0.005	-0.053 (0.153)	0.004
Communication in SHG ( $w_3$ )	0.217 (0.123)	0.089	-0.547* (0.159)	-0.185	-1.047* (0.284)	0.137
Decisions taken in the SHG ( $w_4$ )	-0.036 (0.147)	-0.013	-0.458* (0.118)	0.07	-1.028* (0.214)	0.399
<b>Individual preference</b>						
Purpose for joining ( $x_1$ )	-0.327** (0.159)	0.042	-0.552* (0.123)	0.11	-0.016 (0.162)	0.002
Motivation to join ( $x_2$ )	0.632* (0.128)	0.364	-0.312 (0.150)	0.025	-0.052 (0.150)	-0.012
Attending meetings ( $x_3$ )	0.069 (0.161)	0.009	-1.214* (0.150)	0.808	0.195 (0.255)	-0.043
Trust in other members ( $x_4$ )	-0.311* (0.126)	0.146	-0.813* (0.154)	0.234	-0.506* (0.130)	0.262
<b>Economic</b>						
Risk involved ( $v_1$ )	0.110 (0.121)	0.006	0.654* (0.138)	0.112	0.213 (0.129)	0.036
Credit/saving transparency ( $v_2$ )	0.050 (0.152)	-0.002	-0.206 (0.130)	-0.004	0.370 (0.208)	0.012
Cost of acquiring the credit ( $v_3$ )	-0.332* (0.134)	-0.077	-0.462* (0.180)	-0.133	-0.477** (0.163)	0.183
Record maintenance ( $v_4$ )	0.266 (0.161)	0.017	-0.168 (0.117)	-0.013	-0.414* (0.173)	-0.029
R <sup>2</sup> value	0.734		0.776		0.697	

Source: Authors' calculation (2009)

Notes: \* and \*\* denote significance at 5 per cent and 10 per cent levels, respectively.

Figures within the parentheses are the standard errors.

and committee members – as per norms from authorities or any others in the order – indicating that the cooperation and consent of all the members was equally important for the group performance.

The performance of SHGs was observed to be better in all the three models when the cost involved in acquiring the credit was most expensive, compared to the lesser cost in acquiring the credit through SHGs, indicating the increased cost in getting credit forces the members to bind themselves more to the group to do better, thereby increasing the performance. In the study area, the performance of SHGs in government-

promoted and NGO-promoted models was observed to be exceptionally good when the record maintenance was better with virtually no errors. If records were maintained at the marginal level, the performance of these SHGs reduced. However, bank-promoted model did not show this trend. This result might be because the group members had self-interest in bank-promoted model and had comparatively more trust, belief, and peer pressure within the group, which was positive for the collective group functioning and has no external actors involved in the group activity, unlike the involvement of government workers in government-promoted model and NGO workers in NGO-promoted model.

## Conclusions

The study had analysed the nature and pattern of relationship of the variables influencing the group performance of SHGs under the three microcredit delivery models (bank-promoted, government-promoted and NGO-promoted). Some meaningful insights from the study are:

- (i) Groups formed on location/ neighbourhood basis have a better performance than groups formed based on other factors in bank-promoted and NGO-promoted models, and vice versa in government-promoted model.
- (ii) In all the three models, groups with the purpose of joining SHGs for financial security have increased the collective performance of the groups, followed by the SHGs formed for other purposes.
- (iii) The motivation factor for becoming an SHG member also influences the performance of the group – the highest performance has been observed if motivated by neighbours, followed by friends, SHG members, officials of bank/ government /NGO, relatives, or any other in bank-promoted model, whereas it is vice versa in government-promoted and NGO-promoted models.
- (iv) The groups with members always attending the meetings have shown a better performance, followed by the groups where members attended meetings sometimes, rarely, and or never in bank-promoted and government-promoted models, and vice versa in NGO-promoted model. It shows that equal responsibility of members in decision-making in the group and activeness of the group is higher in bank-promoted and government-promoted models as compared to NGO-promoted model.
- (v) The collective performance of the groups in all the three models has been observed highest where members participation was very active, followed by the performance of groups having actively, seldom, and never had freedom of participation, articulating the importance of freedom of participation of members for group performance.
- (vi) The performance of the group has been found highest if the transparency in SHG activities was

ensured always, followed by reduced performance if the transparency in SHG was sometimes or never, inferring that transparency in functioning of the SHGs is an important factor in the performance of SHGs at the group level in all the models.

- (vii) Trust among members has shown a direct impact on collective performance of the groups in all the models, and is better when the trust across members is very good and decreases as trust decreases.
- (viii) A better performance in all the models has been observed in the SHGs that took decisions based on the consensus, indicating that the cooperation and consent of all the members is equally important for the group performance.
- (ix) In all the models, it has been observed that least the risk involved in acquiring the credit, highest is the collective performance of the groups and vice versa, indicating risk involved in acquiring the credit through an SHG is also a crucial factor.
- (x) The performance of SHGs has been observed to be better in all three models when the cost involved in acquiring the credit was most expensive, compared to performance of SHGs involving the lower cost in acquiring the credit, inferring that the increased cost in getting credit helps the members to understand the value of credit, thereby binding them more with the group to do better, in turn increasing the performance.

In summary, all the three microcredit models have proved their ability in reaching the rural poor in a large and diverse country like India. Answering our hypothesis of the study- since they work in different modes and perform at different levels, the relationship between the variables and repayment status and also the social performance differs from model to model. Eventually, success or failure of SHGs will be determined by the so far discussed variables to a large extent. Hence, while dealing with the SHG microcredit it is necessary to know the context-specific difficulties and ground realities related to the variables. So integrated and comprehensive functioning of all the three microcredit delivery models is essential to achieve a better outcome of the SHGs.

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## References

- Adolph, B. (2003) *The Role of Self-help Groups in Rural Non-farm Employment, Rural Non-Farm Economy: Access Factors*. Discussion paper, Department of International Development, Natural Resource Institute, Kent, UK.
- Agarwal, A. (2002) Common resources and institutional sustainability. In: *The Drama of the Commons*. Eds: . E. Ostrom, T. Dietz, N. Dolsak, P.C. Stern, S. Stonich, and E. Weber. National Research Council, Committee on the Human Dimensions of Global Change. National Academy Press, Washington, DC. pp. 41-85.
- Bardhan, D. and Dabas, Y.P.S. (2007) Microfinance initiatives through self-help groups: Some issues. *Agricultural Extension Review*, (January-June): 24-29.
- Bharamappanavara, S.C. (2010) The performance of microcredit organisations. Stuttgart, Germany.
- Bharamappanavara, S.C. (2013) Growth and outreach of Self-help groups microcredit models in India: A literature insight. *International Journal of Social and Economic Research*, **3** (1): 1-14.
- Bharamappanavara, S.C., Hanisch, M. and Rommel, J. (2014) The effect of heterogeneity and freedom of participation on collective action in rural self-help groups: Combining in-depth interviews with curve estimation. *Journal of Mixed Methods Research*, 1-21.
- Bi, Z. and Pandey, L.S.D. (2011) Comparison of performance of microfinance institutions with commercial banks in India. *Australian Journal of Business and Management Research*, **1**(6): 110-120.
- CGAP (Consultative Group to Assist the Poor) (2007) *Sustainability of Self-help Groups in India: Two Analyses*. CGAP Occasional Paper No. 12. Washington DC.
- Christen, R. (2005) Microfinance and sustainability: International experiences and lessons for India. Paper for NABARD workshop, *Microfinance: Challenges for the Future*. New Delhi. 3–6 May.
- Clarkberg, M., Robertson, D. and Einarson, M. (2008) *Engagement and Student Surveys: Non-response and Implications for Reporting Survey Data*. Paper presented at the Annual Forum of the Association for Institutional Research, Seattle, WA
- Cole, S. N. (1987) *Task Role Communication and Ecology of Mind*. Chandler Publication Co., San Francisco.
- Gibson, C., Williams, J. and Ostrom, E. (2005) Local enforcement and better forests. *World Development*, **33** (2): 273-284.
- Gifi, A. (1990) *Nonlinear Multivariate Analysis*. Wiley, Chichester, New York.
- GoI (Government of India) (2014) *Primary Census Abstract Data (Final Population)-2011*. Ministry of Home Affairs, New Delhi. Available at [http://www.censusindia.gov.in/2011census/population\\_enumeration.aspx](http://www.censusindia.gov.in/2011census/population_enumeration.aspx) (accessed 4 Dec 2014).
- Government of Karnataka (2004) *Government of Karnataka Report*. Bangalore.
- Government of Kerala (2004) *A Comparative Study of Self-help Groups Organized and Promoted by NGOs and Kudumbasree (A government-organised NGO) in Kerala*.
- Hare, T. (1976) *Leadership Style and People*. McGraw Hill, Washington, USA.
- Hayes, T.M. and Ostrom, E. (2005) Conserving the world’s forests: Are protected areas the only way? *Indiana Law Review*, **37** (3): 595-617.
- Jones, C. E. (2004) Wealth-based trust and the development of collective action. *World Development*, **32**(4): 691-711.
- Kabir, H. (2002) The experience revolution and the grameen bank experience in Bangladesh. *Financial Markets Institutions and Instruments*, **3**: 11.
- Kerr, N.L. and Kaufman-Gilliland, C.M. (1994) Communication, commitment and co-operation in social dilemmas. *Journal of Personality and Social Psychology*, **66**: 513–29.

- Louis H.G.S., Cornelis G.V.K. and Pavel S. (2002) Institutions of sustainability in central and eastern European countries. Paper presented at X<sup>th</sup> EAAE Congress on Exploring Diversity in the European Agri-food System. Zaragoza (Spain), 28-31 August.
- Meulman, J.J. and Heiser, J.W. (2009) PASW® Categories 18. SPSS Inc., Chicago.
- NABARD (National Bank for Agriculture and Rural Development) (2007) *Annual Report for 2006-2007*. District NABARD Branches, Dharwad, Karnataka.
- NABARD (National Bank for Agriculture and Rural Development) (2009) *Potential Linked Credit Plan 2009-10*. Davanagere District. Karnataka Regional Office, Bangalore.
- NABARD (National Bank for Agriculture and Rural Development) (2013) *Status of Microfinance in India: 2011-12*. Micro Credit Innovations Department, Mumbai.
- Nagaraj, N., Chandrakanth, M.G., David Acker, Chengappa, P.G., Shuthi, H.R., Yadava, C.G. and Kanwar, R. (2009) Economic performance of self-help groups in Karnataka, with special reference to Venkatelahalli in south India. *Indian Journal of Agricultural Economics*, **64** (4): 604-617.
- Narayanaswamy, B., Narayana Gowda, K. and Nagaraja, G.N. (2007) Performance of self-help groups of Karnataka in farm activities. *Karnataka Journal of Agricultural Sciences*, **20** (1): 85-88.
- Nixton-II (Ed.) (1979) *The Small Group*. Prentice Hall Inc., Englewood New Jersey: diff. **4**: 108-156.
- Pratt, W.J. (1987) Dividing the indivisible: Using simple symmetry to partition variance explained. *Proceedings of the Second International Conference in Statistics*, Eds: T. Pukkila, and S. Puntanen. University of Tampere, Tampere, Finland.
- Purnima, K.S. and Narayanareddy, G.V. (2007) Indicators of effectiveness of women self-help groups in Andhra Pradesh. *Journal of Research (ANGRAU)*, **35**(2): 93-96.
- RBI (Reserve Bank of India) (2007) *Revisiting Bank Linked Self-help Groups—A Study of Rajasthan State*. RBI Occasional paper, Monsoon 2007, by Navin Bhatia. RBI, Mumbai.
- Robert, C. (2005) Microfinance and sustainability: International experiences and lessons for India. Paper for NABARD workshop, *Microfinance: Challenges for the Future*. New Delhi. 3-6 May.
- Roul, S. (1996) Self-help groups as an alternative model. *IRMA*, **2**: 249-261.
- Royal Tropical Institute (1987) *Rural Economic Development and Food Security*. Amsterdam, Netherlands.
- Sarada, O., Shivamurthy, M. and Suresha, S.V. (2008) Facilitating structural and functional characteristics on the level of empowerment of rural women self-help groups. *Mysore Journal of Agricultural Sciences*, **42** (2): 323-326.
- Singh, S. (1995) Self-help groups in Indian agribusiness – Replications from case studies. *Artha Vijnana*, **37**(4): 380-388.
- Singh, Y.K., Kaushal, S.K. and Gautham, S.S. (2007) Performance of women self-help groups (SHGs) in Moradabad district, Uttar Pradesh. *International Journal of Rural Studies*, **14**(2): 17-20.
- Sultana AL-Amin, and Rahman, Md. Mostarfipur (2011) Contribution of variables to the role performance of charwomen in maintaining sustainable livelihoods in Bangladesh. *International Journal of Rural Studies*, **18** (2): 1-6.
- Thomas, R.D., Hughes, E., and Zumbo, B. (1998) On variable importance in linear regression. *Social Indicators Research*, **45**(1-3): 253-275.
- UNESCO (United Nations Educational Scientific and Cultural Organization) (2004) *Annual Report*. Paris, France; available at [www.unesco.org](http://www.unesco.org).
- Van Bastelaer, T. (2000) *Does Social Capital Facilitate the Poor's Access to Credit? A Review of the Microeconomic Literature*. Social Capital Working Paper Series. World Bank, Washington DC, USA.