

## EFFECTS OF DIFFERENTIATION ON SMALL GROUP FUNCTIONING: A STUDY OF TRAINING AND PARTICIPATION

Chinmoy Roy\*  
Basudeb Bhattacharya\*\*

### Abstract

*The different facet and dimension of participation and training in patterning the performance effectiveness among SHGs poses serious managerial challenge because both these factors with differential sequence have reciprocal iterative linkage with the performance result. To find the pattern of competency and its interrelation with structured differences in training and participation we explore the impact of widespread training provided by the SHGs program and the level of participation by the SHG which indirectly influence on its savings behavior and earnings. To assess the main and overall interaction effects of training and participation, along with a priori power analysis, factorial design is used and the findings supported the threshold probability of correctly accepting the proposition that there are significant differences in average savings to total income retention across levels of training status and participation. The concluding outcomes transparently revealed that the higher training level both basic skill and record keeping and managerial competency increased significantly to contribute to the rate of savings to total income of the SHGs when compared to the initial training, based only on basic skill and record keeping. Since the significant interaction effect showed differences in performance increase in savings and total income, a simple effect analysis shows the differences is important for both the forward-looking differential training and participation.*

**Key Words:** *Differential Training and Participation, Managerial Competency, Interaction Effects, Income and Savings*

### Introduction

To lift the world to the higher level of collective prosperity requires massive expanses of grassroots entrepreneurship, which in turn depends on basic skill and record keeping and managerial competencies on worthy business training as well as greater and active participation to increase more man-hour for working and better communication feedback to reduce

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\*Associate Professor, Department of Commerce, Tripura University  
Email- chinmoy68@gmail.com

\*\*Branch Manager, Tripura Gramin Bank (A Govt. Undertaking).  
Email- bhattacharya.basudeb83@gmail.com

uncertainty in operational decision making. To continue with this trend as well as to enhance the success rate of SHG entrepreneur's proper training programs can be designed and offered to them on a regular basis (Vanithamani & Menon, 2012). Managing economic activity immediately after second gradation requires sound strategic decisions and practices which may not necessarily formulated as goals early in the formation of their groups. For many, these practices emerged through their daily decisions. Making decisions that support growth and value creation is an ongoing activity that occurs day in and day out. Of course, decisions about how to achieve the goals should be based on trying various approaches and learning by observing what happens. Training helps participants overcome limitations and improve performance in their current activities. The impact of training on assets regeneration approach reveals that training strengthens members' skills in savings and asset accumulation (Swain & Varghese, 2011). The increased rate of saving, regularity in attending meetings and higher share of production credit than consumption credit were the important factors contributing to the higher participation level (Anjugam & Ramasamy, 2007). Apart from managerial competencies, a simple, well-organized system of records, regularly kept up, can actually be a timesaver by bringing order out of disorder.

A micro firm also needs to know almost on a day-to-day basis where his business stands in value creation, which products or services are the most or the least profitable, what his working funds needs are, and many other details. Apart from safeguarding assets, accurate records can disclose any shortages, so that steps can be taken to find and correct the source of trouble. Many studies have found a close relation between inadequate records and business failures (Robert C, 1978). There was a low awareness about the benefits of the scheme among the members and the training facilities were inadequate. The training facilities were supposed to be given to the members of SHGs in the specific areas of financial literacy and orientation. This pattern was not uniform in all the groups of these programmes as some groups under SGSY might be failed in taking the training opportunity on the basics of group management (Batra, 2012). The government spends large sums of money on training for prospective entrepreneurs because government believes that if members can master certain basic skills and record keeping along with managerial competencies, they can perform a variety of works and be able to deal with some of the new challenges (D. Hellriegel, 2011).

### **Research Design and Methodology**

The purpose of this study is to assess whether training on managerial competencies can improve performance in group economic activities compared across greater and active participation by self-help group participants. It is implied that participating SHGs saved more, were more likely to have bank accounts and were more likely to participate in the management of their savings (Desai & Joshi, 2010). One of the primary benefits of participation in a SHG is the opportunity to save regularly, access formal savings institutions and participate in the

management of these savings. They save regularly, have their own bank accounts and make deposits into these accounts. SHG is having a good impact on members, in their ability to save their hard earned money (Sundaram, 2012). Sample sizes of 300 groups were taken for consideration. Thirty six groups met exclusion criteria and twenty-four groups dropped out of the study before it began, resulting in a study sample of 240 SHGs. Fifty-one percent (n=122) of the groups were composite group, thirty two percent (n=77) of the participants were females, while male comprises seventeen percent (n=41) of the sample. The average age of the group members are 38, and on average the groups had 5 years tenure (M=5.3 years, SD=2.3).

The dependent variable namely savings to total income is taken from secondary source and designed in a continuously scaled (ratio) variable with equal distances between number points and a true zero reference. Training situation (IVA) is operationally defined with two levels: (i) partial training on basic skill with record keeping and (ii) total training on basic skill with record keeping and managerial competencies. The training level for the participants with basic skill & record keeping involved record keeping system, daily summary of sales and cash receipts, minute's books, assets accounts, member register and other basic records as mentioned in the micro finance scheme. The training participants in the managerial competency training level received short module on strategic action competency, planning and administration competency, teamwork competency, communication competency and self-management competency. The second independent variable (IVB) participation status is used in this study to determine if the number, size and committed participation help to improve their performance in terms of savings and total income or not. The participation index (Nisha, 2006) in this study is operationally defined as poor participation and allocated as normal participation when desired man-hour is absent for working and the rate of participation is only quantitative attempt than qualitative one. On the other hand when more man-hour is available for working with repeated attempt, the participation is considered as both quantity and quality participation and assigned as committed participation. The scale of measurement of the both the independent variables are discrete nominal (categorical).

The research design used for this study is a factorial design (Shadish, 2002) to assess the effects of two independent variables, training (XA) and participation (XB), on one dependent variable explicitly scaled as savings to total income. The design is partially randomized in which groups were randomly assigned score relating to the participation and are orthogonal from each other. There are different groups in each cell forming a unique combination of one level of each independent variable. Group in cell XA1B1 assigned active participation group and they received basic skill and record keeping training and a different group who are in cell XA2B2 assigned active participation group and they received managerial competency training. The combination of one level of each independent variable represents the unique participation condition and training status of the group. The initial analyses test the null hypotheses associated

with the effects of each independent variable on the dependent variable, the two main effects, and a combination of effects on the dependent variable from certain levels of the first independent variables with certain levels of the second independent variable as one interaction effect. If the interaction effect is significant, an attempt will be made to conduct a simple effects analysis to determine which levels of the first independent variable with which levels of the second independent variable interact to produce significant effects on the dependent variable. The three basic research questions which this study intends to address includes : (i) RQ1, to what extent the total training module status on both basic skills with record keeping and management competency produce significantly higher savings retention compared to total income among SHGs when compared to the partial training on basic skills with record keeping? (ii) RQ2, to what extent the overall effective quality participation level will result in higher savings to total income among the SHGs when compared to the fractional quantity participation level only? (iii) RQ3, is there any significant interaction effect between training status and participation level on an average savings to total income retention?

### **Hypotheses to be tested**

To get the accurate answers of the above three questions the following three narrative null and alternative hypotheses are proposed:

H01: There will be no significant difference in average savings to total income retention when comparing the effects of the partial training on basic skills with record keeping status to the total training module status on both basic skills with record keeping and management competency.

H02: There will be no significant difference in average savings to total income retention when comparing the effects of the experimental quantity participation level to the overall effective quality participation level.

H03: There will be no significant differences in average savings to total income retention across levels of training status and participation.

### **Analysis and Interpretation:**

Along with a priori power analysis we assessed the underlying assumptions of statistic and found that the normality and homogeneity of variance is met and hence it is safe to infer that the distribution is not deviating significantly from being normally distributed. Before proceeding to in-depth analysis we categorized the selected SHGs in each of the four levels, and each SHG's score was produced independent of the other scores. However, if dependent variable tests scores across condition levels are correlated with each other when the scores are collected to the same order, the significance level of the ANOVA can be smaller than it should be (Norusis, 2003). We assessed the independence of observations by graphing the scores of the Individual SHGS on the dependent variable by set condition based on the same order in which observed measurements were obtained and found the independence criteria is fulfilled.

**Table 1: Descriptive Statistics**  
Dependent Variable: SAV/II

Participation	Training	Mean	Std. Deviation	N
*Normal	*Formal	16.70	4.466	60
	*Intensive	17.10	4.697	60
	TOTAL	16.90	4.568	120
*Committed	*Formal	14.40	4.235	60
	*Intensive	22.50	3.807	60
	TOTAL	18.45	5.711	120
TOTAL	*Formal	15.55	4.485	120
	*intensive	19.80	5.047	120
	TOTAL	17.68	5.219	240

Source: Computed by the authors

Descriptive statistics are provided in the ANOVA output in Table-I showing means, standard deviations, and sample sizes by combinations of conditions. Previously, we assessed for homogeneity of variance of the saving to income ratio across the four groups for specific conditions and found there was constancy of variance. Table-2 shows the results of assessing the variances of all four groups together, and it shows that the significance is 0.449, which is greater than the  $\alpha=0.01$ . Thus, it appears the variance of the dependent variable is equal across groups, and this result supports the previous finding of constancy of variance.

**Table 2: Levene's Test of Equality of Error Variances<sup>a</sup>**  
Dependent Variable: SAV/II

F	df1	df2	Sig.
.885	3	236	.449

Source: Computed by the authors

a. Design: Intercept + Participation + Training + Participation \* Training

**Table 3: Tests of Between-Subjects Effects**  
Dependent Variable: SAV/TI

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power <sup>b</sup>
Corrected Model	2117.250 <sup>a</sup>	3	705.750	37.928	.000	.325	113.784	1.000
Intercept	74977.350	1	74977.350	4029.388	.000	.945	4029.388	1.000
Participation	144.150	1	144.150	7.747	.006	.032	7.747	.792
Training	1083.750	1	1083.750	58.242	.000	.198	58.242	1.000
Participation * Training	889.350	1	889.350	47.795	.000	.168	47.795	1.000
Error	4391.400	236	18.608					
Total	81486.000	240						
Corrected Total	6508.650	239						

Source: Computed by the authors

a. R Squared = .325 (Adjusted R Squared = .317)

b. Computed using alpha = .05

In the Table-3 tests of between subjects effects the result of the first main effect of participation on savings to total income are under the column called source across the row participation. The test of significance of the first main effect is in the  $F$  column ( $F=7.747$ ) and is significant at the  $p=0.006$ , which is less than  $\alpha=0.01$  and thus is significant,  $F(1, 236)=7.747, p<0.01$ . There is a moderate difference between the row means as appears from Table-I of the normal participation level, where  $M=16.90$ ,  $SD=4.568$  versus committed participation level where  $M=18.45$ ,  $SD=5.711$ . This shows that the higher participation level both quantity and quality increased reasonably ( $p<0.01$ ) the rate of savings to total income of the SHGs when compared to the normal participation level, based only on number participation. The partial eta-squared value of  $\eta^2=0.032$  indicating that 3.2 percent of the change in the dependent variable (savings and income) can be attributed to the first independent factor (normal participation). The  $\eta^2=0.032$  has a small strength effect according to Cohen's convention for  $\eta^2$  where approximately 1 percent to 6 percent is small effect (Cohen, 1988).

The second null hypothesis related to the main effect of training module or training level on savings to total income are under the column called source across the row training. The test of significance of the second main effect is in the  $F$  column ( $F=58.242$ ) and is significant at the  $p=0.000$ , which is less than  $\alpha=0.01$  and thus is significant,  $F(1, 236)=58.242, p<0.01$ . There was a significant difference between the row means as appears from Table-4a of the

formal training where  $M=15.55$ ,  $SD=4.485$  versus intensive training where  $M=19.80$ ,  $SD=5.047$ . This shows that the higher training level both basic skill and record keeping and managerial competency increased significantly ( $p<0.01$ ) the rate of savings to total income of the SHGs when compared to the formal training, based only on basic skill and record keeping. The effect size for the second main effect of training module, the  $\eta^2=0.198$  has a large strength effect as Cohen's convention for  $\eta^2>0.14$  is large. Approximately 19.80 percent of the change in the savings and income can be attributed to the training module.

The third null hypothesis related to the interaction effect was significant,  $F(1, 236) = 47.795$ ,  $p<0.01$ . There were significant mean differences in savings to total income across levels of participation and training status. Following the same procedure to find the interaction effect it appears that the interaction effect of participation and training produced a large magnitude of savings and income as is evidenced by the  $\eta^2=0.168$ .

The significant interaction as demonstrated in Table-1 in relation to means on savings to total income is produced by the independent variables. The two means of the participations both normal participation and committed participation are compared to the two means of the training status formal training and intensive training. The two means across the levels of the participation for the formal training level are nearly similar (Normal Participation,  $M=16.70$ ) vs. (committed Participation,  $M=14.40$ ). In contrast, the two means across the levels of the participation for the training level are quite different. The Committed participation mean on savings to total income is 22.50 which are considerably higher than the mean produced by the normal participation level is 17.10.

As there is significant interaction effect, so the turn is to assess the simple effect of one independent factor on the dependent variable at one level of the other factor. Table-IV depicts the results of two comparisons for participation levels both normal and committed at each training module (formal and intensive). The first comparison is between the cell means of participation level ( $Mp1=16.70$ ) compared to ( $Mp2=14.40$ ) at the formal training status. There is significant difference since the Sig of F value is 0.004 ( $p>0.01$ ). The second comparison is between the cell means of participation ( $Mp1=17.10$ ) compared to ( $Mp2=22.50$ ) at the intensive training level. It appears that the SHGs with intensive training who participated actively in higher level showed a significantly higher performance in terms of savings and total income than those with higher training level who participated only in numbers,  $F(1, 236) = 47.01$ ,  $p<0.01$ .

**Table 4: Tests of Significance for Savings to Income using UNIQUE sums of squares**

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	4391.40	236	18.61		
Participation Within Normal Training	158.70	1	158.70	8.53	0.004
Participation Within Intensive Training	874.80	1	874.80	47.01	0.000
Training Within Normal Participation	4.80	1	4.80	0.26	0.612
Training Within committed Participation	1968.30	1	1968.30	105.78	0.000

Source: Computed by the authors

In Table-4, the results of two comparisons for formal training and intensive training at each participation level are shown. The first analysis compares the means of (Mt1=16.70) compared to (Mt2=17.10) at normal participation level, resulting in no significant difference ( $p > 0.01$ ). Next, there is a significant difference between the means of the formal training module (Mt1=14.40) compared to the intensive training module (Mt2=22.50) at the higher committed participation,  $F(1, 236) = 175.78$ ,  $p < 0.01$ . The SHGs participating at higher level both numbers and quality showed a significantly higher performance level in terms of savings and total income if they completed intensive training when compared to those with formal training. Overall, the SHGs who showed the higher performance level had higher training module plus higher participation level.

The decisions regarding rejecting or failing to reject the null hypotheses of the main effects and interaction effect are presented in Table-V. Since we rejected the interaction effect, the decisions and conclusions regarding the simple effects analysis are shown in Table-4.

**Table 5: Decisions regarding Null Hypotheses of Main Effects and Interaction Effect**

Effects	Null Hypotheses	Decision	Conclusion
Main effect of Participation (P)	$H01: \mu P1 = \mu P2$	Reject $p < 0.05$	Differences in participation level found
Main effect of Training (T)	$H02: \mu T1 = \mu T2$	Reject $p < 0.05$	Differences in Training module found
Interaction effect of (P) and (T)	$H03: \mu 1P \times \mu 2T = 0$	Reject $p < 0.05$	Differences in performance across levels of P and T found

Source: Computed by the authors

To correctly reject a false null hypothesis Post Hoc Power analysis is carried out in addition to a priori power analysis to help us determine if a combination of our planned alpha level, estimated effect size, and sample size would be enough to detect a significant difference if it

existed. The post hoc power values are found in the Tests of Between-Subjects Effects in Table-6. The post hoc power for the participation effect is 0.792, indicating that given a post hoc effect size of 0.032,  $\alpha=0.05$ , and a sample size of 240, the probability is approximately 79.2 times in 100 that we would correctly reject a false null hypothesis in favor of the alternative hypothesis.

**Table 6: Decisions regarding Null Hypotheses of Simple Effects**

Effects	Null Hypotheses	Decision	Conclusion
Participation(P) at Formal Training	$H01:\mu P1=\mu P2$	Reject $p<0.05$	Higher performance for Participation at Normal Training found
Participation(P) at Intensive Training	$H02:\mu P1=\mu P2$	Reject $p<0.05$	Higher performance for Participation at Intensive Training found
Training(T) at Normal Participation	$H03:\mu T1=\mu T2$	Reject $p<0.05$	Higher performance for Training at Normal Participation found
Training(T) at Committed Participation	$H03:\mu T1=\mu T2$	Reject $p<0.05$	Higher performance for Training at Committed Participation found

Source: Computed by the authors

## Conclusions

The purpose of this study was to assess whether a participation level in numbers when added to quality participation would increase the performance of the SHGs in terms of savings to total income earned. The focus is also on training to assess whether the formal training would produce an interaction effect with the higher level quality participation on performance of the SHGs. It was expected that the addition of quality participation would increase the range of performance level. There appears a significant main effect of normal participation as compared to committed participation. Further, it seems that the higher training level both basic skill and record keeping and managerial competency increased significantly to contribute to the rate of savings to total income of the SHGs when compared to the formal training module, based only on basic skill and record keeping. Since the significant interaction effect showed differences in performance increase in savings and income, a simple effect analysis shows the differences is important for both the independent variables. The quality participation appears to be effective in increasing the performance of the SHGs. The formal training with normal participation did not produce a significant effect on the performance of the SHGs. However, there were significant differences between the levels of participation and training modules. SHGs with intensive training demonstrated more effective performance in savings and total income if they were

provided with the both quantity and quality participation level. Overall, the SHGs who showed the most competencies in performing both on savings and income had intensive training and committed to the participation both in figures and quality.

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