



**EMPOWERING RURAL WOMEN LABOUR FORCE THROUGH SGH BANK LINKAGE
MICROFINANCE PROGRAMME IN INDIA – A CASE STUDY ON
NRLM / ANANDADHARA PROGRAMME AT PATHAR PRATIMA BLOCK,
WEST BENGAL, INDIA**

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RESEARCH ARTICLE

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Introduction

Over the past seven decades many states in India have taken bold and new strategies to tackle India's long term financial challenges. To move the economy towards more inclusive growth, the policy makers have adopted different new strategies. Their success stories are come out as a leading example of how the crisis of credit worthiness can be solved. Starting from the age liberalization to neo-liberalised era, the occupational structure have been changed with the intention about how the ocean of economic opportunities can be explore to improve the livelihood among the under privilege households of the economy (Tripathi. V. K., 2017). Financial volatilities, the global financial crunch and risk associated with the instability of India's pre mature money and capital market forced the policy maker to rely on the small financial booster than its large counterpart. At the same times how the ocean of economic opportunities can be explore to improve livelihood of underprivileged and financially excluded work force of economy.

To improve the livelihood near about 1.40 core people (among which 50% below the age of 25 and more than 65% below the age of 35 are the youth population) the policy makers have been relying on self-employment and income generations structure for rural youth. The main objective is to encourage rural women so that they can explore the opportunities that have been arising both in the traditional sector as well as new economic sectors. To achieve the target it is evident that Microfinance has played a very crucial role for small economic agent. Over past few decades finance or micro finance facility has come out as a very effective instrument for improving the livelihood of women through SHG especially in rural region (Juja. S. V, 2014, M. Lokhande, 2008).

Abstract

Starting from early 70's microfinance emerged as the most effective instrument to irradiate poverty and unemployment especially in rural India. Govt. of India has taken several initiatives to empower rural women through SHG (Self Help Group) Bank Linkage programme in Micro Finance field. Commercial Banks, Regional Rural Banks, Cooperative Banks are now engaged with several government regulations to the SHGs in rural India. NABARD has taken the initiative with the intention of reduction of poverty and unemployment by mobilizing resourced for rapid financial inclusion. Indian economy have experience a regional biased growth of microfinance during liberalised period. However, in the neoliberalised era region specific inclusion pattern have been changed. The low income group are still remains excluded from the access of microfinance. With this background an attempt has been made to analyse the effectiveness of SHG Bank Linkage programme of a newly introduce microfinance program namely NRLM (National Rural Livelihood Mission). We want to analyse how far this government flagship programme has been enhanced the income and employment of rural women in Pathar Pratima block, South 24 Parganas, West Bengal. It is found that NRLM / ANANDADHARA SHG groups are successful to improve income and livelihood of the members than non-member in Pathar Pratima block in the district of south 24 Parganas of West Bengal. We also check the poverty situation of sample households in terms of Multidimensional Poverty Index (MPI) both for ANANDADHARA SHG members and non-members. MPI revealed that poverty intensity has been effectively declined for SHG group members compare to non-SHG group members.

Keywords: SHG, Microfinance, financial inclusion, Randomize control trial (RCT), Treatment group, Control group, NRLM / ANANDADHARA, Multidimensional Poverty Index (MPI)



Microfinance has a wide range of activities to the poor. It comprises small savings, micro credit and insurance (Chakravarti and Shahrian, 2010). Microfinance institution provide loan to individual or group who don't have access to formal credit market (Morduch 1999). Microfinance also have a wide range of activities. It includes financial services, like micro payment, micro transfer, micro insurance (Convey 2002), for low income people. Over past few decades the dimension of the traditional microfinance has been changed. Microfinance movement which starts its journey at the villages of Bangladesh (Holcombe, 1995) in the name of Gramin bank has now extending its activities in the wide range of the economy. In today world it acts as a very effective instrument to improve economic wellbeing of the rural household. Now it also takes cares of health, nutrition child education and standard of living.

In Indian economy, the growth of microfinance is remarkable. During 2009 microfinance reaches to 50 million household and about 30 million borrowers. Their operation pattern can be decomposed into three major categories: self-help group (SHG), Gramin model /joint liability group and cooperative banks or regional rural banks.

Phase –II Micro finance in India and NABARD Policy:

The policy makers have relied much on the supply chain network approach in the form of SHG bank linkage programme to explore microfinance opportunity by the financially excluded households. By analysing the impact of microfinance through SHG bank linkages, NABARD has given more emphasis to establish linkage between SHGs and banks. As a result SHG bank linkage programme has been working as a major microfinance programme since 1991-93 (NABARD, 2003).

Microfinance can also provide different avenues to improve livelihood and growth of the economy (Kagwe 2008). It takes into account: deposit, loans, payment services and also insurances to the financially excluded poor especially in the rural area. The term microfinance and microcredit are not same. Microcredit does not include savings. In our discussion we consider microfinance as it is very meaningful in present context (Manimekalai, 2004). Microfinance has enormous potentiality to eradicate poverty especially in the age of new economy. Although in some phases of development it experiences some difficulties in its expansion due to global economic slowdown but in most of the cases it is successful to promote financial support to poor and financially excluded population.

Microfinance in India shows a steady growth in the post liberalization period. It provides multiple benefits to the poor who have not formal credit access. In this process Self Help Group act as an effective institution for financial inclusion. India's informal sector get a momentum in the process of SHG bank linkage programme (SBLP) lunched by NABARD in 1992. As per RBI guideline it is consider as the priority sector leading and normal banking business. Up to March 31, 2009, there are more than 6.1 million saving linked SHG and more than 4.2 credit linked SHGs and about 86 million financially excluded household are covered under this programme. SBLP aimed to cover 100 million household by 2015. The success is not uniform in all regions of India. Since its inception, the growth of Microfinance towards more financial inclusion is very high in southern region of the country and rest of the portion in India is lagging behind.

In India the microfinance is crucially a state interventionist approach. It is different from neoliberalised microfinance model. Here we get a state promoted rural finance institutions and not of commercialized finance institution as we get in the neoliberalised era. The main questions arises is that among the two approaches which one is very effective? The growing body evidence is suggesting that in case of a rural economy development with the financial inclusion of the poor in the channel of commercialized microfinance is neither economically nor socially efficient (Bate man 2010, 78-91 & Doran et al., 2009).

Microfinance Supporter Malcolm Harper (2007) honestly concludes that 'too expensive and too inflexible' terms and conditions of commercialized microcredit do not fit subsistent agriculture sector. In case of individual microcredit there is also a problem as mentioned by Dichter (2006) that poorest people do nothing or very little with the microcredit. On the other hand the poor farmers who can use it into productive purpose do not really need micro credit. Dishter terms it as 'microcredit paradox' situation. It is evident that both the original subsidized Gramin bank microfinance approach and its neoliberalised counterpart 'new wave' commercialized finance approach have been using by the policy maker to remove rural poverty and improve sustainable rural development. Both the approaches are being hastily redesigned to make microfinance instrument more powerful. The current practice in this line is 'financial inclusion'.

In this study we first consider whether there has been any persisting relationship between SHGs and bank linkages form liberalized era to neoliberalised era. We can use secondary data published by NABARD from 1991 to 2019. Before using a long term time series data we must check the stationarity of the data set. We can handle mathematical tools to make them stationary if we get any type of non-stationary element in the data set. Next we check cointegration between number of number of SHGs and bank loan provided by SHGs. When we get any long run strong association, then we have to find out region specific effect (if any) to capture which region has more effectively explored the opportunities of microfinance facility to promote financial inclusion. After assigning most effective region we take a particular Govt. flagship programme in recent time (NRLM). In recent Indian context, Pradhan Mantri Jan Dhan Yojna (PMJDY) scheme (2014), Pradhan Mantri MUDRA (Micro Units Development and Refinance Agency) Bank Loan Scheme (2015) and Deen Dayal Upadhyaya Antyodaya Yojna National Rural Livelihood Mission (DAY-NRLM) (2011) have expedited the most effective micro financing efforts in India. Studies on women empowerment and microfinance shows that women's participation in the income generating activities, whether individually or through self-help group have been able to empower rural women over time. However, some studies have also noted down the

mixed impacts of micro financing on women like control of assets secured from loans by male members of the family whereas the liability to pay back the loan remains with the women. In this paper we rely on primary data analysis through households survey in order to check how the households of that particular region could effectively use the microfinance scheme to improve their livelihood. We also check the poverty situation of those households who have got this microfinance facility.

Objective of the study: The study has following objectives:

1. Our next objective is to study the region specific effect i.e., we would like to check which region of India has more effectively use this linkages to increase microfinance facility.
2. We also have the objective to select the states and districts in India have effectively explored the microfinance opportunity in neoliberalized era. This effectiveness is measured in terms of number SHGs and amount of bank loan to per SHGs.
3. To find out the effectiveness of a particular treatment in a particular block. Here treatment is the women empowerment programme NRLM which is associated with SHG bank linkage programming for better livelihood to rural women in the neoliberalised period.
4. We would also like to compute the multidimensional poverty index (MPI) both in the treatment group and control group. By doing this we could check which group has been able to reduce multi-dimensional poverty.

Literature

Microfinance or micro credit has come out as most effective tools for employment generation. Churchill (1995) in study "Get Ahead Foundation Programme" in South Africa have found micro credit greatly needed for job creation despite of low profit. In a similar study by Creevey, Ndour and Thiam (1995) on "The Guinea Rural Enterprise Development Project" have analyzed the impact of microfinance. The analysis end with following points of conclusions: i) Assets and employment does not have high impact but micro-credit has a high impact on income of enterprise. ii) Childrens are not getting better impact on micro-credit at the household level, except on running water in houses has no overall impression on the households' assets. This study has cited positive impact on enterprise income by providing micro-credit.

In South Asian Context Montgomery, Bhattacharya and Hulme (1996) in their study on "Government Thane Resource Development and Employment Programme (TRDEP)" in Bangladesh have examined the impact of credit programme on poverty, productivity and income. They found that minimum livelihood need among the rural poor households is attend by use of credit properly.

Success stories of micro finance have been studied by many researchers. Yaron (1994), Besley, (1994) were shown that Microfinance institutions provided credit to the poor women. They are very effective and this credit services are more successful in the rural and urban areas due to outstanding performance of women. Hemalatha Prasad (1997) have underlined two studies of the National Institute of Rural Development, Hyderabad, one in Salem district in Tamil Nadu and another in the Tribal Development Project area of Andhra Pradesh to focus on women in economic empowerment. International Fund for Agricultural Development programme (IFAD) had been covered in 11 blocks of Salem district. He said in this project that rural women have enriched by the access to credit, increasing their resources, well access to health and creation of a sustainable model. The women had achieved the success for the purpose of social improvement in group dynamics as well as mainstream of credit delivery system.

In another study on SHGs working with marine fishing by the locals in Orissa have successfully generated surplus and the repayment of loan was almost 100 percent among SHGs run by women Karmakar, K.G. (1997). Mehrotra, C.K. (1997) has completed a relative study of the State Bank's performance with Self-help Groups. In his opinion, the State Bank of India's financing scheme for Self-Help Groups has been relatively inspiring. The branch officials themselves inspire the poor in a number of centrist form Self-Help Groups. They also apply the services of the Non-Governmental Organizations for the very same determination. MoinQasi (1997) undertook a study entitled "Self Help Groups – A Novel Approach to Rural Development" marks connection between members an effort to study the reasons for Self-Help Groups in rural development. The study revealed that irrespective of caste, sub-caste, blood, community and of credit source or action among the members, Self-Help Groups are more effective against existence of balance and activities.

So far as access of bank credit by the SHGs are concernd several researchers have found (Modkey (1999), Morduch, Jonathan (1999), Puhazhendhi (1999)) women group members had been able to generate small savings from the group activities and rural women in some cases had successfully improve their poverty situation. Karmakar in his study (Karmakar, K.G. (2000) in his study "Rural Credit and Self Help Groups: Microfinance Needs and Concepts in India",) have pointed out the requirement of microfinance for the tribal women in Orissa. It was observed that SHGs run by Tribal women have benefited from the micro-credit approach to deliver credit to the rural poor in Orissa. The study on Mahila samite (SHG) by Mahab Sen. (2000) revealed that SHGs had used of individual loans for productive purpose, SHGs repayment rate was high of the formal institutional system, Group approach was an important impact for change in the quality of life of the poor people, and Group cohesion, group action, need-based credit and timely repayments have essential elements of group members for sustainability development of education, health, income, safe drinking water and protection of environment.

In another important study made by Chavan (2002) to examine the role of micro credit on rural household for eradicating rural poverty. There was a treatment group (beneficiaries) and control group, a huge difference showed the change and rise in the income of two groups of 1988 to 1992. So the micro-credit programs and institution has created a positive change of income but the income change was marginal. This change has been occurred due to their minor operation and for results minimum impact on income generation for the rural poor. The linkage between credit delivery through micro finance and reduction of poverty in rural poor is also highlighted by Majumder N.A (2004). It is found that if the microfinance institution provide access to credit for productive activity in rural poor, then transaction cost should be reduced extremely and repayment could be covered 90 percent by RBI and NABARD. Renowned work by Basu, S.C. (2006) on an evaluation of the micro credit in India, has observed that SHG-Bank linkage programme has been found to be the effective and fastest growing microfinance programme of the world. Study has also made on changing pattern of livelihood of rural women. Smita G. Sabhlok (2006) in her study that SHGs was an introduced in India and it was also contributed to the rural women section of the society for economic development. It has changed the scenario of livelihood pattern of rural India. RAO, B. S. (2018) searched that Micro Finance is effective as an influential tool for poverty alleviation in Indian economy by dominated of SHG-Bank linkage programme. Women have empowered of technology dissemination by forming of SHGs. Micro Finance has a positive impact both on economically and socially for reduction of poverty in rural poor. He focused on his study that Women have empowered after joining SHGs in Eluru.

Financial empowerment not only improve the livelihood of the rural households but it also change the mindset of the rural women. A study conducted by Gladis Mary John (2008) found that the membership of SHG gives a huge confident about the minds of most women to succeed in daily life. There has been a positive change in the attitude to relative and friends of the women in the SHG. So those who have explored the opportunities of microfinance have been able to change their social status. Shing S. Dilan, (2011) exposes that there was an extreme change in social status of women in the post-SHG period. Women have expressed on SHG programme as a change agents for social and economic empowerment of rural poor.

Last but not least we consider financial inclusion which is the most powerful indicator of economic development especially in rural area, we found that there are several evidence of financial inclusion of Microfinance through SHGs Bank linkages programme in rural India. Hundekar, V. R. (2019) in his study explored that SHG has introduced to financial inclusion nationwide program of GOI under the aegis of World Bank. It attempts on multiple aims like access to loan, encouraging savings, enabling income generation. They are eventually empowering the poor under the ambit of banking & financial services. The study has focused on SHGBLP in the state of Karnataka. It was measured the penetration of financial inclusion. Bank penetration, credit penetration, and penetration of SHG in various districts of Karnataka. They were used through SHGBLP of impact to multiply financial inclusion index. Pearson's correlation analysis, reliability test and Chi-square tests are used in Belagavi district.

On the basis of the several evidence we would like to study the impact of NRLM/ANANDADHARA programme in empowering rural women at Pathar Pratima Block in the district of south 24 Parganas of West Bengal, India.

Data set and methodology

We take both secondary and primary unit level data. The secondary data has been collected with a period of 1990-91-2018-19 from various reports of microfinance status annually published by NABARD all these data are secondary data. We also take NRLM data published by ministry of rural development AAJEEVIKA at the G.P and village level. Secondary data is used to find out region specific effect of microfinance programme in various region of India. Rest of analysis is carried over by using primary data.

Choice of Block

The justification of choice of this block is that among the 29 community development blocks, disbursement of loan among Anandadhara members is significant low. The block has 15 G.Ps out of which we take G.Ps depending upon the poor performance in this programme. We take Gopalnagar, Durbachati, Ptharpratima and Digambarpur within weightage 40, 50, 60 Patharpratima and 50 from Digambarpur G.P. So, a total 200 high-level from different Anandadhara SHG group has been selected. Household are selected within a particular group secondary. In case of selection of between group households, we take similar work activity status of the SHG group.

Selection of Sample Unit and design

Selection of primary data from district level to household level is being made by two stage sampling method. We follow the NRLM data published by Ministry of Rural Development AAJEEVIKA from district to household level.

We use two stage purposive sampling. Primary stage unit (PSU) is selected from secondary data. Here we take GPs as the primary stage sampling unit. Among the 15 GP, we have selected 4 GPs. This selection method is purely purposive. We judge the performance of the ANANDADHARA SHG groups in terms of two status namely: Loan repayment status and work activities status.

To collect unit level households data, we consider similar work activity status. Among the variables activity status we take seasonal agriculture, fruit tree nursery, livestock, tailoring etc.

At the second stage, groups are selected by simple random sampling without replacement method. After selection of group we take unit level households data. Households are the ultimate stage sampling unit (USU). We take 4 GPs depending upon the no. and size of ANANDADHARA group members as well as similar category households. We take 40 members from Gopalnagar GP, 50 members from Durbachati, 60 from Pathar Pratima, and 50 from Digambarpur GP. So, a total of 200 households from SHG group and non-group members are selected for analytical purpose.

Description of variables

Bank loan: We take bank loan in reputed allotted for MFIs only. It is consider as dependent variable. It can explain how microfinance can enhance the income of the financially excluded population. We take microfinance data from the period 213-14, 2014-15, and 2015-16. A three years duration is selected with the intention to check the time verifying effectiveness of the treatment take the treatment in our analysis is the SHG group loan disband by the bank for a particular economic activity. Here we take a long gestation period our objective is to find out why the SHG members are unlike to generate sustainable income opportunity by analyzing in order to check the effectiveness of data this treatment in the form of microfinance boost. We also take 200 households with similar initial condition. Selection of households who do not receive this treatment (in the form of microfinance) is being mode with the condition that during survey they did not get any govt. supportive any from. They are control group houses.

Description if the variable:

Savings: we take SHG savings rate as an explanatory variables in the model.

No of SHG: it is also an explanatory variable and measure in 4 of member. In this study we analyzed the number of SHGs in formats which shows the outreach of SHGs (S. Saravanan, Dash D. Prashad, 2017) across India over the years.

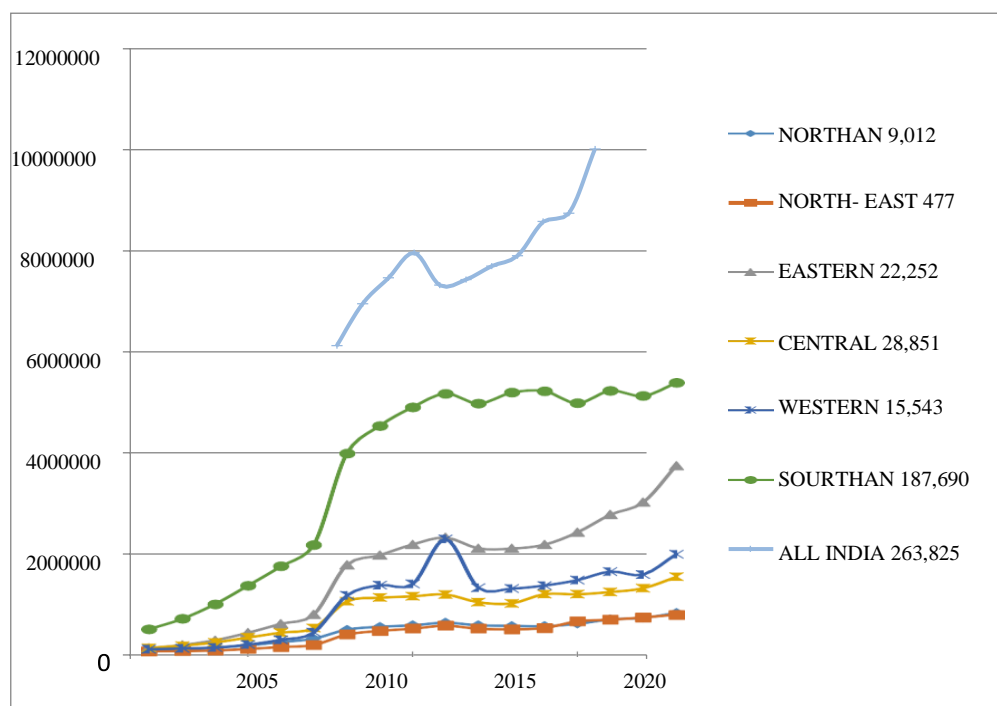
The data set cover the dominated status of the regions over time period 1990-2017-18. In order to avoid inconsistently (S. Saravanan, Dash D. Prashad, 2017) and spurious regression problem.

Framework for Analysis SHG Bank Linkage:

Starting from liberalized era we have found that NABARD has been working with cooperative banks, RRBs and schedule commercial banks to supply credit into the SHGs. Data shows no. of SHGs is increased overtime. At the same time no. of SHGs getting loan form banks is also increased. Since we are interested to study SHG bank linkages, we need to find out strong positive association between increase no. of SHGs and loan disbursed by the bank to the SHGs. We consider the data set published by NABARD from year 1993-94 to 2018-19. This tenure of 25 years which will cover both liberalized and neo liberalized era. We take series of SHG performance namely increased no. of SHGs, growth rate of SHGs and cumulative growth rate of SHGs for detail analysis. In case of bank loan data, we also take similar time series data. The scatter shows that both the series (no. of SHGs and bank loans) are improving overtime but rate of increase of bank loan is far behind then the rate of increase of no. of SHGs. The gap has become wider during neo-liberalized era. It is shown in the figure bellow. Fig.1 shows the regional disparities in the during 2018-2019. We select eastern region for our study because data shows the growth of Bank loan in million (rupees) has increased substantially in eastern region than other regions over time in (year).

Choice of region and Scope of Study:

Fig. 1: Regional disparities of Microfinance in terms of Bank loan



Data revealed that West Bengal is the key contributor of eastern states with 7% penetration of women population. Near about 18 % of the households have explore the benefit of Microfinance through SHG bank linkages (Champatiray, Agarwal and Sadhu, 2018)

Pathar Pratima at a Glance

Pathar Pratima is a community Development Block in Kakdwip Subdivision of south 24 Parganas district of West Bengal. Pathar Pratima CD block is located at 21°47'39"N 88°21'20"E. It has an average elevation of 4 metres (13 ft). Pathar Pratima CD block is bounded by Mathurapur-I and Mathurapur-II CD blocks in the north, Sundarbans forests in the east, Bay of Bengal in the south, Namkhana, Kakdwipand Kulpi CD blocks in the west. South 24 Parganas districts divided into two distinct physiographic zones: the marine - riverine delta in the north and the marine delta zone in the south. As the sea receded southwards, in the sub-recent geological period, a large low-lying plain got exposed. Both tidal inflows and the rivers have been depositing sediments in this plain. The periodical collapse of both the natural levees and man-made embankments speed up the process of filling up of the depressions containing brackish water wet lands. The marine delta in the south is formed of interlacing tidal channels. As non-saline water for irrigation is scarce, agriculture is monsoon dominated. Some parts of the wetlands are still preserved for raising fish. Pathar Pratima CD block has an area of 484.47 km². Average literacy rate of Pathar Pratima Block in 2011 were 82.11% in which, male and female literacy were 88.54% and 75.4% respectively. Total literate in Pathar Pratima Block were 237,955 of which male and female were 131,063 and 106,892 respectively. Out of total population, 141,001 are engaged in work activities. 46.2% of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 53.8% are involved in Marginal activity providing livelihood for less than 6 months, of 141,001 workers engaged in Main Work, 17,007 were cultivators (owner or co-owner) while 24,312 are agricultural labourer.

Experimental Design and Data Collection

Our task is to identify the effect (treatment) of microfinance in the form of bank loan to the ANANDADHARA SHG group members. We have to identify how much this microfinance scheme is effective to improve income or categorically income of the women household. It is not wise to use just a cause effect relation between income of the households and income from this microfinance scheme to get effectiveness of ANANDADHARA micro finance programme. Suppose some households did not get this SHG loan but over time it is found that their family income has been increased more than those households who have received this loan with same initial family condition. To determine the main effect of NRLM micro finance scheme we have to avoid other partial linkage effect. Here we have used the Randomised Control Trial method for the selection ultimate stage sample unit.

Randomize Control Trail (RCT)

The effectiveness of microfinance programme can only be judged if it has comparatively higher impact to the receiver than. A simple cause effect relation can't capture this comparative effectiveness. To take care of this problem we used a Randomize Control Trail (RCT) to the SHGs households members and non-SHG households members who did not get this loan in the form of SHGs bank linkage microfinance scheme (ANANDADHARA). A total of 200 households from different ANANDADHARA SHG group and Non-SHG group has been selected. In case of selection of group of households (both SHG members and non-members), we take similar work activity status and assets position in terms of agriculture and allied activities. We take Gopalnagar, Durbachati, Ptharpratima and Digambarpur Gram Panchyet (GP) with a weightage 40, 50, 60 Patharpratima and 50 from Digambarpur G.P of Pathar Pratima block. The block has 15 G.Ps out of which we take 4 G.Ps. We take a households size 100 of each Treatment group (received the microfinance) and Control group (not received the microfinance). All households have been selected with almost same basic initial condition.

Model

Let \bar{Y}_A denote the annual average income of the same household who get treatment in the year 2019. (ANANANDADHARA) and \bar{Y} denote the annual average income of the same households in the year 2016. We choose this households as he got the microfinance loan in the year 2016. Now difference difference denoted by (DD) is defined as:

$$DD = \bar{Y}_A - \bar{Y} (D_1 - D_2) \text{ Where } D_1 = \bar{Y}_A \text{ in 2019} \\ D_2 = \bar{Y} \text{ in 2016}$$

Now the term D1 has two components:

D1= [Microfinance Scheme effects (D) + Annual trend income without Microfinance scheme effect (D)].

To isolate treatment effect we introduce a time varying control variable in the form:

$D_3 = \bar{Y}_{A2019} - \bar{Y}_{2019}$ and $D_4 = \bar{Y}_{A2016} - \bar{Y}_{2016}$. Where \bar{Y}_{A2019} is the annual average income of the households who availed microfinance (treatment group households). Again \bar{Y}_{2019} annual average income of the households who could not avail microfinance in 2019 (control group households). Similarly \bar{Y}_{A2016} are the treatment group household for the year 2016 and \bar{Y}_{2016} are the control group households for the year 2016.

So we define difference-difference equation as: $DD = D3 - D4$

Some notations

Control group: Did not get treatment. Treatment group: Did get treatment. Pre: Measured before treatment. Post: Measured after treatment. \bar{Y}_{TRPRE} : Annual average income of treatment group before getting treatment. \bar{Y}_{TRPOST} : Annual average income of treatment group after getting treatment. Now we consider a RCT table:

Table No: 1

	Time	Pre	Post
	Group	2016	2019
Control		$\bar{Y}_{c,pre}$	$\bar{Y}_{c,post}$
Treatment		$\bar{Y}_{TR,pre}$	$\bar{Y}_{TR,post}$

Model Specification

To capture the cause effect relationship of the microfinance programme in from the ANANDADHARA, We take a regression difference-difference (Double Difference) from:

$$\bar{Y} = \beta_0 + \beta_1 D_{post} + \beta_2 D_{TR} + \beta_3 D_{post} \times D_{TR} + \beta_4 X + \epsilon$$

Where \bar{Y} the outcome variable (Annual average income)

D post is time dummy loanable (D post = 1 after getting treatment) = 0 otherwise)

DTR is the treatment group dummy.

DTR = 1, for individual in treatment group

D post X DTR = 0, for individual in control group = time and treatment interaction, X is the vector of control variable, ϵ is the random error term which can take care of all excluded variable. The distribution of ϵ is $\epsilon \sim \text{iid } N(0, \sigma^2_\epsilon)$. Where σ^2_ϵ is constant i.e. homoscedastic variance.

Hypothesis

To check the effectiveness of NRLM / ANANDADHARA microfinance programme among the treatment group households we propose the following hypothesis:

H_0 : ANANDADHARA microfinance programme is not a successful programme to generate better income among SHG group members.

Our alternative hypothesis is:

H_A : Microfinance programme is very effective for better income generation among SHG group members.

Results and Discussion

Table No: 2
ANOVA TABLE

Source of Variation	Sum of squares	Degrees of freedom	Mean square	F-values	F0.005	R-squared
Model	6791990.95	3	2263996.98			0.4132
Residual	25066209.1	196	127888.822	17.70	3.12	Adjusted R-squared
Total	31858200.05	199	160091.457			0.5052

Y	Coef.	Std. Error	t- value	P> t (p-value)	95% confidence Interval
dtr	298.5249	84.11351	3.55	0.013	132.6457, 464.4131
dpost	-99.90809	80.64831	1.24	0.217	-258.9579, 59.14177
dtrXdpost	140.0766	111.8417	1.25	0.312	-80.49095, 360.6442
constant	5726.471	50.07618	114.36	0.013	5627.713, 5825.228

In the above ANOVA Table (Table no. 2) we get the p-values of all regression coefficients ($\beta_0, \beta_1, \beta_2, \beta_3$). P-values of coefficients β_0 and β_2 are statistically significant. It means we cannot accept null hypothesis. So we accept the alternative hypothesis. That is treatment effect is insignificant. Although it is found that value of β_1 is negative but p-value of Dpost Dummy is statistically insignificant. It means income of the treatment groups households did not experience any negative income generation effect but households belongs to control group could earn less income compare to treatment group households. More specifically income of the control group households will fluctuate over time. Such fluctuations have not found among treatment group households. The value of β_3 is positive is statistically insignificant. It is evident that household belongs to treatment group have not experienced time varying interaction effect. Households belong to control group did not experience microfinance booster effect interms of income. Time varying interaction effect is also absent for them.

By analysing data we conclude ANANDADHARA/ NRLM SHG programme is successful at the initial phase to generate higher average income and employment at Pathar Pratima Block of West Bengal. After getting momentum it fails to carry out the growth rate of income (treatment group) into next phase over time. Time varying effect of income growth is not very prominent among the treatment group households. Again households who are out of the coverage of this scheme (control group) have experienced a low average income growth at the initial phase compare to treatment group. Overtime time average income of the control group households may not be lagging behind.

Multidimensional Poverty Index (MPI)

Our last objective is to study the poverty situation among the treatment group households and control group households. We take Multidimensional Poverty Index (MPI) to check the poverty situation among the two group of households. Multidimensional Poverty Index(MPI) is consist of three Dimension which are Education, Health and Standard of Living and those three dimensions are also classified into ten indicator. Education and health both have two indicator (No one has completed 5 years of schooling, At least one school age child not enrolled in school, at least one member is malnourished and One or more children have died). Standard of living of 6 indicators those are (No. of electricity, No. access of clean drinking water, no. access of adequate sanitation, House hold uses dirty cooking fuel, House has drift floor, Household has no car and owns at most one bicycle). A person is MPI poor if he or she is deprived is 1/3 or more of these weighted indicators, where health and education indicators are weighted at 1/6 and standard of living indicators at 1/18. The cut-off point is 0.333, individual score (C1) is greater than the cut-off score then the individual considered to poor and if score is less than the cut off score then considered as not poor.

$$MPI = H \times A$$

H= Head count Ratio A= Intensity of Poverty

Calculated value of the MPI is given in Table No. 3. We can compare the poverty situation of the two groups over time

Table No. 3

Treatment group	Control group
H = 284/514=0.5525	H = 338/525=0.6438
A = 124.829/284=0.4395	A = 150.223/338=0.4444
MPI = H X A	MPI = H X A
= 0.5525 X 0.4395 = 0.2428	= 0.6438 X 0.4444 = 0.2861

By computing MPI we found, treatment group MPI score is 0.2428 while control group score is 0.2861. The value of MPI among treatment group is less than that of its control group counterpart (0.2428<0.2861). So it is evident that ANADADHARA SHG programme has been reduced the poverty level more effectively to the beneficiaries. In the study we have analyzed the poverty situation of the GPs. We found that SHG beneficiaries have explored the microfinance scheme very effectively. They are not only successful to improve their income but also reduced their poverty level compare to non-beneficiaries of ANANDADHARA scheme.

Major Findings

The study so far we have under taken, has the following research findings:

1. Analysis shows in the initial phase southern region played a dominant role towards financial inclusion through SHG bank linkages programme.
2. After 2010, i.e. in the neoliberalised era eastern region shows an exponential trend in inclusion pattern. Although overall growth rate of microfinance through SHG bank linkages remain high in southern region.

3. Incidence of informal borrowings decreased significantly in eastern region due to expansion of credit through SHG bank linkages.
4. Cases of informal borrowing among the SHG members are lower than that of non-members in rural area.
5. In case of a specific microfinance programme, households in the treatment group have lesser borrowing from informal sources compare to the members in the control group.
6. Majority of the respondent in the treatment group are of productive age women. They have medium level of financial inclusion. Analysis shows that age has no association with the level of financial inclusion of the respondents.
7. We have found a significant association between level of education and financial inclusion both in the treatment group and control group respondent.
8. There is significant variation among the SHG members related to financial inclusion through NRLM microfinance programme in the district of South 24 parganas. Activities like Agriculture and animal husbandry had played a dominant role and had effectively explore the ANANDADHARA scheme in Rural Bengal.
9. Semi- skilled women labours, educated rural women have used the microfinance more effectively compare to others. On the other hand unskilled manual labours and domestic workers (female) are still remained financially excluded.
10. Expenditure pattern of the treatment group households shows level of inclusion increases with the increasing expenditure class. So, family with lower expenditures are financially.
11. The asset positions of the H.H. establish a striking trend. Analysis shows H.H. with mobile phones have been exploited the SHG bank linkages more effectively than those who do not have mobile phones
12. Analysis of the distribution of H.H. according to family size and financial inclusion. The study shows the larger family sizes have earns and save more than small families.
13. The study also shows NRLM has made considerable progress in rural difficult region of west Bengal where banking penetration is low but access to bank is very high.
14. The study also reveal that this NRLM programme is not penetration among the poor who do not comet to weekly group meeting or to those who do not have the capacity to payback. NRLM microfinance.

Conclusion

Rural microfinance which begins its journey from subsidized Gramin Bank Model and is now replaced as new wave commercialized model has some great success stories. Now, it is universally accepted that even in neoliberalised era, microfinance is the only escape route from poverty and unemployment in the rural region of India. NABARD's policy is successful to provide financial support by promoting SHGs with gramin and commercial banks linkages programme. Arrival of microcredit through govt. flagship programme (NRLM) is successful for financial inclusion of rural women living in remote villages of district South 24 parganas, West Bengal.

In this study by applying RCT we have been able to establish the fact that women who gets treatment (microfinance support by forming ANANDADHARA group) has been successfully explore the microfinance to improve their income and lioveliohood. Not only the production of agriculture and other livestock but their poverty situation also has also increased significantly. This study also analyse the poverty scenario of Pathar Pratima block. It is found that multidimensional poverty in the treatment group households (who get microfinance under ANANDADHARA/NRLM) has been decreased compare to control group (who did not get treatment). The study revealed that instead of regional difficulties NRLM microfinance programme provide main or supplementary income opportunity of the rural women. Although it is not mainstream poverty alleviation programme, the analysis shows this microfinance programme have been effectively reduced the multidimensional poverty among the beneficiaries of ANADADHARA/ NRLM scheme.

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