Does Membership in Women's Group Advance Economic Empowerment? A Study based on NFHS Data-Evidence from India

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Abstract

Women's empowerment is crucial for development of any nation which is the reason why women empowerment programs are evaluated, promoted and monitored over time. This is all the more important for Indian case as women generally plays an important role in maintaining good household health and nutrition. This paper uses data from secondary sources i.e. NABARD and NFHS (Round 4 and 5) to measure the impact of access to micro-finance funds on multiple measures of women empowerment. Two variables are created MD1 and MD2 in order to measure Micro-finance access and Micro-finance dispersion respectively. This paper documents women empowerment for the whole of India as well as for all its states and Union Territories. The study finds that Southern and Eastern States lead in both indexes of micro-finance access and dispersion. Also, the women empowerment indicators vary greatly across different states as well as across indicators. An important conclusion of this paper is that micro-finance access credit- linked SHGs in states has a positive and significant impact on all indicators of women empowerment. However, micro-finance dispersion i.e. presence of savings-linked SHGs does not have any impact on any indicator of women empowerment. An implication of these results is that the government should provide the necessary support to the SHGs in terms of training and market- linkage. This is crucial for the sustainability of the SHGs and effectiveness of the program as vehicle for women empowerment given the alarming rise in NPAs in SHG- lending.

Keywords: Women, Empowerment, Micro-finance, NABARD, NFHS

Introduction

Over the years, in India, the Micro-finance program of NABARD has promoted the institutional source of financing for the poor with the SHG bank linkage model dominant model of micro-finance. In recent years, lot of discussion centres around whether micro-finance has proved to be a vehicle for economic and social empowerment of women. Micro-finance impact on various dimensions of women empowerment such as economic, political, social and psychological have been studied

extensively by the researchers worldwide.

"Empowerment of women" is one of the Sustainable development goals and in fact play a crucial role in achieving the other SDGs as well. The SHG bank linkage program signalled a change in strategy of the government towards poverty alleviation through women empowerment. As a result the SHGs is dominated by women clients (Harper, 2002) and has economically and socially empowered women and improved the wellbeing of their families (Uma & Rupa, 2013, Nandera, 2016). In India, evidence suggests that SHG membership has a positive impact of economics empowerment of women (Bali &Swain, 2007, Laha et al., 2014) and asset creation through enterprises (Tripathi & Tripathi, 2018). Women clients are given a preference in micro lending because they have higher repayment rates (Abdullah & Quayes, 2016). The economic enhancement of women is facilitated through enhancement of savings, access to micro-credit funds, enhancement of skills and training of the members and other forms of support. There are no magic bullets, no panaceas, no blueprints and no ready-made formulas which bring about radical and structural transformation for the empowerment of women who are below poverty line (Kabir, 2005). Micro-finance lending leads to economic empowerment of women by enabling productive use of credit by micro-entrepreneurship (Sandhya & Sri Ranjini, 2018). SHG brings about a change in the attitudes of people to access and engage with their money in an informed way (Nicolini & Nicolini, 2019). Women can be truly empowered if along with the access to employment opportunities, she also experience an increase in her agency or autonomy (Kabeer, 1999).

Though many researchers have tried to explore the meaning of the word "empowerment" (Malhotra, Schuler, Boender, 2002), there is a lack of consensus on a commonly agreed definition. Sen and Batliwala (2000) defines it as: "Empowerment is the process by which the powerless gain greater control over the circumstances of their lives. It includes both control over resources and over ideology...[includes, in addition to extrinsic control] a growing intrinsic capability – greater self- confidence, and an inner transformation of one's consciousness that enables

one to overcome external barriers…". This definition explains empowerment embodying the concept of "power to achieve" and make positive changes in one's lives. Women can be empowered when they are able to have a better access to resources but also when they have agency i.e. control to use these resources for herself and her family's welfare. Agency is also an integral part of capability approach to development proposed by Amartya Sen. Sen (1985) defines agency freedom as "what the person is free to do and achieve in pursuit of whatever goals or values he or she regards as important." Empowerment is therefore nothing but a gain in agency.

Literature Review

The economic empowerment of women is important to achieve many of the Sustainable Development goals. Prof. Yunus in the year 1984conceptualisedthe idea of Grameen bank of organising poor into SHGs. These are associations of poor people belonging to the same social and economic background which have come together for a common purpose. The SHG bank linkage program was introduced by NABARD along with the empaneled NGOs and RBI recognised the group based lending as an alternative credit model. This led to a revolution in development banking in the country since group based clients for SHGs were provided with institutional credit. The IRDP and other schemes were merged together into a new scheme called SGSY "Swarnjayanti Gram Swarozgar Yojna" from 1999 to 2011 with the main objective to provide self-employment to BPL households and bringing them out of poverty by organising them into SHGs. Prof. Radhakrishnan committee after reviewing the SGSY scheme recommended a shift in the focus from top down approach to poverty to livelihood based approach and institutionalising the SHG movement. As a result, the SGSY scheme was restructured into NRLM with the twin objectives of Organisation of women into SHGs and Continued nurturing to assist them in taking economic activities.

NRLM institutionalises SHGs in form of a 3 tier structure i.e. SHG at the ward level, 'village organisations' at the village level and 'cluster level federations' at the

cluster/block level. The NRLM has the objective of strengthening the grassroots level institutions and assisting women to getting self-employment or skilled wage employment so that improvement in livelihoods can be obtained on a sustainable basis. It aims at making at least a woman from every rural household (amounting to around 9 crores) to be a part of SHGs and their economic, political, social and psychological empowerment. The 'Dashasutras' of SHG movement are "Regular meetings, Regular savings, Regular inter-loaning, Timely repayment of loans and Updated books of accounts; Health, Nutrition and Sanitation; Education;Active involvement in PRIs; Access to entitlements and schemes; and creating opportunities for sustainable livelihoods".   Four pillars have been identified which are essential for the empowerment of women through SHGs. These being "social mobilisation, formation and promotion of sustainable institutions of the poor; financial inclusion; livelihoods; and social inclusion and convergence" (Mitra,Kande and Rani, 2020).

A substantial number of studies have been conducted to measure the microcredit program on women empowerment but the evidence has been mixed. Evidence suggests that micro-finance positively impacts women by empowering her economically and socially (Armendáriz and Morduch, 2010; Bali Swain and Wallentin, 2009; 2012;Pitt, Khandker, and Cartwright, 2006; Beteta, 2006; Malhotra and Schuler, 2005; Anderson and Eswaran, 2005; Dijkstra, 2002;; Bardhan and Klasen, 1999; Pitt and Khandker, 1998). Some studies do not find any impact (Banerjee et al., 2013) while some found negative impact (Garikipati, 2008; Goetz and Gupta, 1996; Rahman, 1999; Leach and Sitaram, 2002). These studies are those in which power to control loans lie with the husbands or when women depend for repayments on men (Garikipati, 2008; Goetz and Gupta, 1996; Rahman, 1999; Leach and Sitaram, 2002).

Table 1. Symbols and Description of Variables

Symbols	Variables	Variable Source
MD_1	Microfinance dispersion	Status of Micro-finance in India (NABARD, 2015-16 and 2019-2020); Census, 2011
MD_2	Microfinance access	Status of Micro-finance in India (NABARD, 2015-16 and 2019-2020); Census, 2011
Y1	Ratio of women who usually participate in three household decisions (Currently married)	National Family and Health Survey (NFHS - 4 and NFHS - 5)
Y2	Ratio of Women who worked in the last 12 months and paid in cash	National Family and Health Survey (NFHS - 4 and NFHS - 5)
Y3	Ratio of Women owning a house and/or land (individual or joint ownership)	National Family and Health Survey (NFHS - 4 and NFHS - 5)
Y4	Ratio of Women having a bank/ savings account use by themselves	National Family and Health Survey (NFHS - 4 and NFHS - 5)

This paper uses data from the fourth and fifth rounds of National Family Health Survey (NFHS-4 and 5) of India conducted in 2015-16 and 2019-20 to measure the impact of participation in the micro-finance program on the economic empowerment of women. NFHS fact sheets reports information on several aspects of the empowerment of ever-married women aged 15-49, which are made use of in the current paper.

Conceptual Framework

Figure 1. Conceptual Framework for Micro-finance and Women's Economic Empowerment
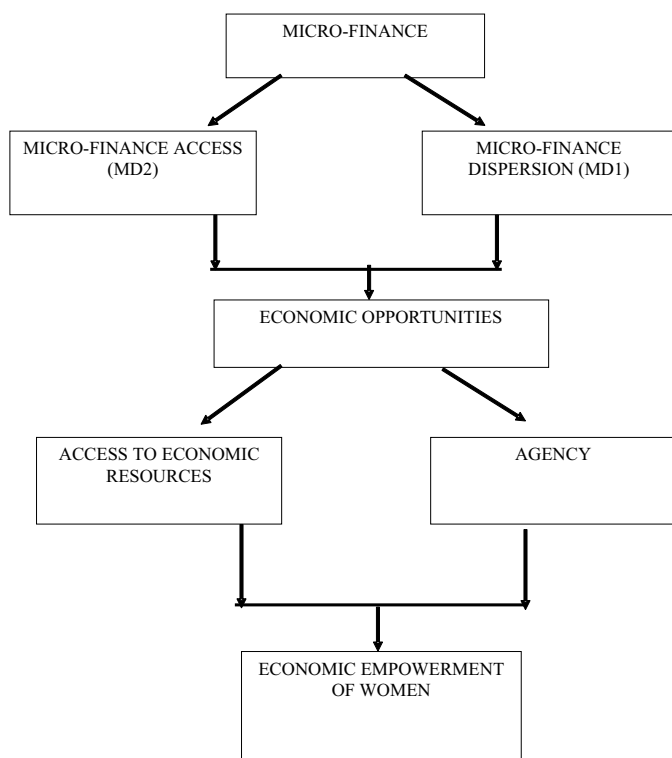
Source: The Author

There is a strong conceptual link between micro-finance outreach and empowerment of women (Mahmud, 2003). SHGs are groups in which women voluntary become a part of for enhancing savings and getting access to credit and for other purposes. For over two decades, according to many researchers, SHGs have led to empowerment of rural women both financially and socially.

There are regional variations in micro-finance outreach as well as the extent to which it has been able to empower women. For the measurement of micro-finance access and diversion, two indices MD1 and MD2 are constructed and used (Dhar, 2016, Laha & Kuri, 2014, Samineni and Ramesh 2020). For each of the states, the indicators of MD1 and MD2 are calculated and the states are provided with a ranking.

The economic empowerment of women is understood as a process where women experience transformation in power and agency, as well as economic advancement (Pereznieto & Taylor, 2014).

Data and Methodology

Data is collected from secondary sources like NABARD (2015-16, 2019-20), NFHS (Round 4 and 5) and Census (2011). Data is collected for construction of the variables based on the existing literature on micro-finance dispersion and access as well as indicators of women empowerment for all the states and UTs. Table 1 contains the variable name and source.

The micro-finance program is implemented by NABARD through private commercial banks, public commercial banks, regional rural banks and the cooperative banks. This study in the measurement of micro-finance access and dispersion takes into account the micro-finance provided by all of these banks. MD1 is defined as the "dispersion of micro-finance in a state by all the banks as a proportion of the state's share of population in the country"(Samineniand Ramesh,2020).

MD1= number of SHG members of the state to the total number of SHG members in India / total population of the state to the total population in India

MD2 is defined as the "credit SHGs of the state from the commercial bank, private sector commercial bank, RRB and cooperative bank to the total credit SHGs of the state and represents the access of loans to the SHGs by all the banks" (Samineni and Ramesh, 2020).

MD2= number of credit SHGs of the state to total credit SHGs in India / the number of total SHGs of the state to total SHGs in India

The availability of micro-finance and access of funds does have an impact on empowering women economically (Mahmud, 2003).

Indicators of empowerment:

The NFHS provides enormous amount of data and various indicators can be derived. In this facet, those indicators which is believed to capture the dimension of economic

empowerment of women in the best possible manner are included. The indicators correspond to individual level data collected from married women belonging to the age group of 15-59 years of age.

In all 5 indicators are chosen from the NFHS data. These include indicators of both access to economic resources as well as agency by measuring women's participation in household decision-making (autonomy) and ownership of economic resources. Siwan and Eswaran (2005) defines female autonomy as "the ability of women to make choices/decisions within the household relative to their husbands". The indicators chosen for this study are:

1. Ratio of women who usually participate in three household decisions (Currently married)

2. Ratio of Women who worked in the last 12 months and paid in cash

3. Ratio of Women owning a house and/or land (individual or joint ownership)

4. Ratio of Women having a bank or savings account used by themselves

All the four indicators were computed for all the states as an average of the nation. In the NFHS data, for each of the indicators above, percentage of women are given. The data on the number of females state-wise and for all India is taken from the Census 2011. Each of these percentages is converted into numbers by multiplying them with absolute numbers. The the ratio is computed by the following formula :

Ratio of Currently married women who usually participate in three household decisions in state i = (Number of Currently married women who usually participate in three household decisions in state 'i' / Number of Currently married women who usually participate in three household decisions in India)

Similarly, the ratio of the other indicators of women empowerment are computed. In order to measure the impact of the two independent variables : Micro-finance dispersion (MD1) and Micro-finance access (MD2) on women empowerment, use of regression technique and R Software was made. The following regression equation was

estimated in order to assess the impact of micro-finance on indicators of women empowerment for the given data:

$$Y_{jit} = \alpha_{it} + m_1 MD_{1it} + m_2 MD_{2it} + \varepsilon_{it}$$

where

$Y_j = j^{th}$ indicator of women empowerment

j= 1,….4 represents the 4 indicators of women empowerment written in Table 1

i = 1,..., 35 is the individual state and union territories index t=1,2 is the time index

(Note: Data on women empowerment indicators Dadra & Nagar Haveli and Daman & Diu is combined in the NFHS survey therefore, the total number of States and UTs are 35)

α_{it}=intercept

m1= coefficient of independent variable MD1

m2 = coefficients for independent variable MD_2 εit = error term

MD_1= Micro-finance dispersion

MD_2=Micro-finance access

Results and Discussion

Micro-finance Dispersion and Access

The SHG-BLP program of NABARD has reached a milestone by reaching out to around 13.8 crore households across India with total 112.23 lakh SHGs as on 31 March 2021.Out of the total SHGs, 97.25 lakh are exclusive women SHGs indicating the potential of this program to act as a vehicle of social transformation. The total savings of these SHGs have grown enormously amounting to 37477.61 crore during 2020-21 with an increase of 43 % over the previous year. As on 31st March, 2020-21 the total loan outstanding amounted to 103289.71 crore.

The success of this program is dependent upon the productive use of funds for entrepreneurship otherwise it would be merely a saving and credit program as shown by the high level of Non-performing assets in the SHG lending (Samineni and Ramesh, 2021). Merely, presence of SHGs in a state or availability of credit through the banks therefore may not be sufficient for the efficient implementation of this program, what is required is opening

of enterprises by women for their sustainable development. The high level of NPAs in SHG lending indicates that SHG members consider these loans as doles and not as credit to be used for productive purposes. The indices of MD1 and MD2 are computed state-wise and wide variation are observed in both micro-finance access and dispersion across states.

Table 2 shows the values of Micro-finance access and dispersion in all the states of India along with the ranking.

The top five states for the MD1 index are Odisha (1.98), Andaman and Nicobar (1.93), Assam(1.7), Karnataka (1.69) and Puducherry (1.58). MD1 ranks are lowest in NCT Delhi (0.027), Jammu and Kashmir (0.057) and Punjab (0.202). This shows that the Southern States and Eastern states have higher concentration of SHGs while the Northern and North- Eastern States have low concentration. This data is contained in Table A1 in the appendix.

Table 2a: State-Wise Value And Rank Of Md1 And Md2

State	MD$_1$	Rank (MD$_1$)	MD$_2$	Rank (MD$_2$)
Andaman and Nicobar	1.936476309	2	1.6695325	2
Andhra Pradesh	1.307192891	11	0.29856199	28
Arunachal Pradesh	0.517582325	27	0.77447215	10
Assam	1.700630105	3	0.12233266	31
Bihar	0.905635992	18	0.09072062	33
Chandigarh	0.665245563	24	0.19813382	30
Chattisgarh	1.082662451	15	1.04182086	7
Dadra & Nagar Haveli and Daman & Diu	1.493725537	6	0.04554095	34
Goa	0.740679467	22	0.51590438	16
Gujarat	0.567136123	26	0.27783202	29
Haryana	0.290409273	31	0.80255898	9
Himachal Pradesh	1.013228385	16	1.37417207	5
Jammu and Kashmir	0.057021937	34	0.398903	22
Jharkhand	0.954547142	17	1.24789018	6
Karnatka	1.691156628	4	0.40700592	20
Kerala	1.486576641	7	0.61832412	13
Lakshadweep	0.328011502	30	1.9051892	1
Madhya Pradesh	0.602248408	25	0.84643226	8
Maharashtra	1.227087976	13	0.4965128	17
Manipur	0.360251223	29	0.4324044	18

State	MD$_1$	Rank (MD$_1$)	MD$_2$	Rank (MD$_2$)
Meghalaya	0.838830254	20	0.30219248	27
Mizoram	1.300208157	12	0.40036	21
Nagaland	0.458963139	28	0.4231937	19
NCT Delhi	0.026594595	35	1.43447021	4
Odisha	1.979876007	1	0.33639605	25
Puducherry	1.583178491	5	1.55415707	3
Punjab	0.202358989	33	0.60053563	14
Rajasthan	0.67672295	23	0.39329216	23
Sikkim	1.186908531	14	0.76175731	11
Tamil Nadu	1.428812804	9	0.11984319	32
Telangana	0.794933567	21	0.55157703	15
Tripura	1.478641844	8	0.03112176	35
Uttar Pradesh	0.270094541	32	0.71163236	12
Uttarakhand	0.86647416	19	0.36216783	24
West Bengal	1.342237129	10	0.33545112	26

Source: The author ; Data source: Status of Micro-finance in India (NABARD 2020–2021) and Census, 2011, RBI.

The percentage of Savings-linked and credit linked SHGs region-wise as on 31st March are shown in Figure 2. The Southern Region comprises of the largest share in both credit and savings linked SHGs with the share amounting to 44% and 35% respectively followed by Eastern Region comprising of 27% and 39% respectively.
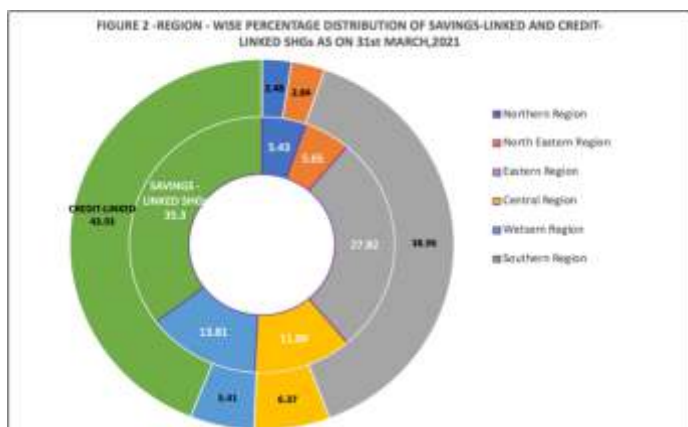

Table A1 in the Appendix also contains state-wise data on Micro-finance access in India in terms of number of credit linked SHGs in the state relative to that of India. The Southern and Eastern states have a higher share of credit-linked SHGs relative to other regions.

Table 2 contains the data on various indicators of women empowerment state-wise and their corresponding ranks. The states which rank in top 5 in currently married women who participates in three household decisions are Nagaland, Chandigarh, Manipur, Mizoram and Sikkim. The states which rank high in percentage of women who worked in the last 12 months and were paid in cash are Telangana, Andhra Pradesh, Manipur, Chattisgarh and Meghalaya. The percentage of Women owning a house and/or land (alone or jointly with others) is reported to be highest in states of Manipur, Odisha, Arunachal Pradesh, Bihar and Tripura. Finally, as far as percentage of women having a bank or savings account that they themselves use is concerned, the states ranking in the top five are Goa, Andaman and Nicobar, Chandigarh, Tamil Nadu and Lakshadweep.

As is very evident from these statistics that the women empowerment indicators are higher for states in Southern region , North-Eastern region and few states of Eastern region.

Table 2b: State-Wise Percentage Of Various Women Empowerment Indicators And Ranking (Nfhs-5)

State	Currently married women who usually participate in three household decisions (%)	Rank	Women who worked in the last 12 months and were paid in cash (%)	Rank	Women owning a house and/or land (alone or jointly with others) (%)	Rank	Women having a bank or savings account that they themselves use (%)	Rank
Andaman and Nicobar	92.6	7	21	21	29.7	25	81.8	2
Andhra Pradesh	79.9	32	42.1	2	44.7	11	66.3	9
Arunachal Pradesh	89.1	17	17.2	29	59.7	3	56.6	20
Assam	87.4	18	17	30	52.3	7	45.4	28
Bihar	75.2	34	12.5	34	58.8	4	26.4	35
Chandigarh	96.6	2	32.6	6	21.6	33	79.6	3
Chattisgarh	90.5	12	36.8	4	26.4	28	51.3	24
Dadra & Nagar Haveli and Daman & Diu	81.5	29	19.2	25	23.8	31	46.5	26
NCT Delhi	73.8	35	21.1	20	34.9	18	64.5	10
Goa	93.8	6	23.6	15	33.9	22	82.8	1
Gujarat	85.4	20	30.2	8	27.2	27	48.6	25
Himachal Pradesh	90.8	11	17	30	11.3	35	68.8	7
Haryana	76.7	33	17.6	28	35.8	16	45.6	27
Jharkhand	86.6	19	24.8	14	49.7	10	45.1	30
Jammu and Kashmir	84	22	12.3	35	33.1	23	60	12
Karnatka	80.4	31	29.1	11	51.8	8	59.4	14
Kerala	92.1	8	20.4	23	34.9	18	70.6	6
Lakshadweep	82.1	25	20.9	22	42.6	13	74.4	5
Maharashtra	89.3	16	28.9	12	34.3	20	45.3	29
Meghalaya	91.4	10	35.9	5	57.3	5	54.4	23
Manipur	96.2	3	40.9	3	69.9	1	34.8	34
Madhya Pradesh	82.8	24	29.9	9	43.5	12	37.3	33
Mizoram	96	4	29.4	10	19.6	34	57.1	19
Nagaland	97.4	1	22.7	17	35.2	17	38.8	32
Odisha	81.8	26	22.5	18	63.5	2	56.2	21
Punjab	90.2	13	18.5	27	32.1	24	58.8	16
Puducherry	85.1	21	21.2	19	40.3	14	68.2	8
Rajasthan	81.7	27	18.6	26	24.1	30	58.2	18
Sikkim	95.3	5	19.9	24	24.8	29	63.5	11
Telangana	81	30	44.7	1	50.3	9	59.5	13
Tamil Nadu	84	22	30.5	7	36.2	15	77	4
Tripura	91.7	9	26.3	13	57.3	5	59.2	15
Uttar Pradesh	81.7	27	16.6	32	34.2	21	54.6	22
Uttarakhand	89.8	15	15.5	33	29.2	26	58.5	17
West Bengal	89.9	14	22.8	16	23.8	31	43.5	31
India	**84**	**-**	**24.6**	**-**	**38.4**	**-**	**53**	**-**

Source: NEHS- 5 and author's calculation

ANOVA Analysis

Table A2 in the appendix shows the average values of both the dependent and independent variables for the various regions of the country for the two years 2015-16 and 2019-20. The average value of MD1 is 1.323 and 1.296 in the southern and Eastern region respectively which are the highest as compared to the other regions. This implies that Southern and Eastern regions are leading in micro-finance dispersion. The region leading in MD2 are the Southern region (1.159) and Eastern region (0.983).As far as

indicators of women empowerment is concerned, there is wide variation in the regions across all the indicators. The regions leading in Y1 are the Central region (0.0589) and Southern and Eastern region (both 0.04). As far as Y2 is concerned, the Southern region (0.07) is leading followed by Central region (0.05). In the third indicator of women empowerment Y3, the Central region (0.06) is the leading region followed by Southern (0.05). The southern region (0.06) is also leading in Y4, the last indicator of women empowerment considered followed again by the Central region (0.05).

Table 3: Anova Results (region-wise)

		Degree of Freedom	Sum of Square	Mean Square	F value	Pr(>F)
MD$_1$	Region	5	8.718	1.7436	6.842	3.61e-05 ***
	Residual	64	16.31	0.2548		
MD$_2$	Region	5	6.319	1.2639	8.997	1.63e-06 ***
	Residual	64	8.99	0.1405		
Y1	Region	5	0.02311	0.004621	4.715	0.000996 ***
	Residual	64	0.06273	0.00098		
Y2	Region	5	0.03728	0.007455	6.238	9.01e-05 ***
	Residual	64	0.07649	0.001195		
Y3	Region	5	0.02965	0.005931	5.082	0.000551 ***
	Residual	64	0.07469	0.001167		
Y4	Region	5	0.0247	0.00494	4.88	0.000762 ***
	Residual	64	0.06478	0.001012		
Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						
Source: R output compiled						

Considering the results from ANOVA contained in Table 3, we can conclude that there is statistically significant difference between the different regions of India. The significance value of the F statistic is below 0.05 for MD1,MD2as well as for all the indicators of women empowerment variables. This implies that we reject the null that the average value of MD1(or MD2) is equal for all the regions or that there is statistically significant variation the average value of MD1(or MD2) for all the regions. There is a statistically significant difference with respect to all

indicators of women empowerment in all the regions. This implies that irrespective of significant regional differences in micro-finance dispersion and access, women are using micro-finance loans for growth causing their empowerment. The data reveals that regions with significantly higher level of micro-finance access and dispersion namely the Southern, Eastern and Central region also enjoy higher levels of women empowerment as shown by value of various indicators.

Regression Results

Women's participation in Household decisions

Box 1 contains the regression results with ratio of currently married women who usually participate in three household decisions (Y1) as the dependent variable. The two independent variables are MD1 and MD2. The F statistic (7.38049) was found to be significant at 1 % level of significance with "p value" less than 0.01. Thus, we rect the null hypothesis of no impact of independent variables on the dependent variable. One can conclude that two independent variables of MD1 and MD2 jointly explain the variation in this particular indicator of women empowerment. The t test and p value (p value is equal to 0.8821 is more than 0.05) shows that MD1 has an insignificant impact on this indicator of women empowerment. But the independent variable of MD2 has a significant impact as shown by the p value of 0.0003 is less than 0.05. MD1 does not have any impact, however a 1 unit change in MD2 leads to a 0.03 units positive change in this indicator of women empowerment.

BOX 1: Results of Regression of Y1 on MD_1 and MD_2

Coefficients:
Estimate Std. Error t-value Pr(>|t|)
(Intercept) 0.00751109 0.00864443 0.8689 0.3880075
MD1   0.00097538 0.00655428 0.1488 0.8821458
MD2   0.03159931 0.00838024 3.7707 0.0003467 ***

Signif. codes:
0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Total Sum of Squares: 0.085833
Residual Sum of Squares: 0.070337
R-Squared: 0.18054
Adj. R-Squared: 0.15608
F-statistic: 7.38049 on 2 and 67 DF, p-value: 0.0012683

BOX 2: Results of Regression of Y2 on MD_1 and MD_2

Coefficients:
Estimate Std. Error t-value Pr(>|t|)
(Intercept) -0.0037247 0.0095205 -0.3912   0.6969
MD1   0.0092251 0.0072185 1.2780   0.2057
MD2   0.0396877 0.0092295 4.3001 5.67e-05 ***

Signif. codes:
0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Total Sum of Squares: 0.11376
Residual Sum of Squares: 0.085316
R-Squared: 0.25005
Adj. R-Squared: 0.22766
F-statistic: 11.1697 on 2 and 67 DF, p-value: 6.51e-05

Employment of women in paid jobs

Box 2 contains the regression results with ratio of Women who worked in the last 12 months and were paid in cash (Y2) as the dependent variable. The F statistic had a value of11.17 and p-value was reported to be significant at 1%. Thus, the null hypothesis that none of the independent variables explain the variation in the dependent variable was rejected. We conclude that MD1 and MD2 together explain the variation in this particular indicator of women empowerment. From the t test and p value (reported to be greater than 0.05), it is clear thatMD1 has an insignificant impact on the dependent variable. But the independent variable of MD2 has a significant impact as shown by the p value which is smaller than 0.05. MD1does not have any impact, however a 1 unit change in MD2 leads to a 0.039 units positive change in this indicator of women empowerment.

Ownership of Assets

Box 3 contains the regression results with Ratio of Women owning a house and/or land (individual or joint) (Y3) as the dependent variable. The F statistic reported was 13.022and p-value significant at 1%, we reject the null hypothesis and conclude that taken together the independent variables

explain the variation in dependent variable. The t test and p value (p value is equal to 0.8841 is more than 0.05) shows that MD1 has does not have a significant impact on the dependent variable. But the independent variable of MD2 has a significant impact as shown by the p value is less than 0.05. MD1 does not have any impact, however a 1 unit change in MD2 leads to a 0.043 units positive change in this indicator of women empowerment.

BOX 3: Results of Regression of Y3 on MD$_1$ and MD$_2$

Coefficients:
Estimate Std. Error t-value Pr(>|t|)
(Intercept) -0.00028125 0.00893436 -0.0315   0.9750
MD1   0.00133695 0.00677411 0.1974   0.8441
MD2   0.04338172 0.00866131 5.0087 4.237e-06 ***

Signif. codes:
0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Total Sum of Squares: 0.10434
Residual Sum of Squares: 0.075134
R-Squared: 0.27991
Adj. R-Squared: 0.25842
F-statistic: 13.022 on 2 and 67 DF, p-value: 1.6689e-05

Independent bank and savings account

Box 4 contains the regression results with ratio of Ratio of Women having a bank or savings account that they themselves use (Y4) as the dependent variable. The F statistic for this regression was reported to be 8.502and p-value significant at 1%. The t test as well as the p value (p value is equal to 0.068 is more than 0.05) shows that MD1 has an insignificant impact. But the independent variable of MD2 has a significant impact as shown by the p value of 0.0002 is less than 0.05. MD1 does not have any impact, however a 1 unit change in MD2 leads to a 0.033 units positive change in this indicator of women empowerment.

The four regressions imply that credit-linkage of the self-help groups is essential for them to lead to women empowerment. Those women Self-help groups which have been provided with microcredit-linkage have become vehicles of empowerment. This has been made possible because

BOX 4: Results of Regression of Y1 on MD$_1$ and MD$_2$
Coefficients:
        Estimate Std. Error t-value Pr(>|t|)
(Intercept) 0.0046686 0.0087071 0.5362 0.5936094
MD1   0.0026635 0.0066018 0.4034 0.6879067
MD2   0.0337069 0.0084410 3.9932 0.0001644 ***

Signif. codes:
0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Total Sum of Squares: 0.089473
Residual Sum of Squares: 0.071361
R-Squared: 0.20243
Adj. R-Squared: 0.17862
F-statistic: 8.50239 on 2 and 67 DF, p-value: 0.00051206

of use of credit for productive purposes say for opening a micro-enterprise. The data shows no significant impact of savings-linked SHGs possibly because of lack of funds for opening enterprises and for productive employment.

Non-Performing Assets in SHG lending

As on 31st March, 2021 around 57.80 lakh SHGs were credit- linked in the country and were provided loans amounting to Rs. 10328970.83 lakh. Around 4.73 % of this total outstanding bank loans turned out to be NPAs. The percentage of NPAs in total loan outstanding had been increasing over the years tremendously. Due to the alarming situation of a rise in NPAs, the Ministry of Rural Development has directed the State Rural Livelihood Missions to monitor the district- wise growth in NPAs as well and take corrective action in districts with NPAs. The committee recommended that the system under which representatives from the SHGs monitor the loans extended to the groups ensure repayment of loans in time and therefore such a mechanism should be adopted by all banks.

The reasons of poor financial health of the SHGs and high NPAs in SHG lending has been found to be manifolds such as use of credit for spending on marriages and social functions, medical emergencies due to poor economic conditions of the borrowers, loan waiver expectations from

the government, lack of training and non-cooperation among the group members (NIRDPR, 2019).

Suggestions and Conclusions

Gender equality is one of the most important SDGs of the United Nations. Not just is it important as a goal in itself but also for meeting other SDGs. One of the important ways of achieving this is expanding economic opportunities for women. NABARD's program of micro-finance is based on the principle of self- help by organising women into SHGs and providing them credit and other support for livelihood generation. It aligns with the government's policy of "Atmanirbhar Bharat" by developing the social infrastructure and economic independence at the grassroots level. Though the SHG lending suffers from high level of NPAs, it does not imply that the program design is faulty . Rather, government should take adequate steps as suggested below to fix the problem and increase the effectiveness of the program. The government should provide the necessary support to SHGs especially to aid in economic recovery post lockdown. Women members of SHGs have also demonstrated resilience in the pandemic and infant helped contain the spread of Covid-19.

As argued by Kabeer, paid employment is not a magic bullet of empowerment as women across the globe are stuck in informal sector without any decent working condition. The solution to this lies in education of women by providing them with training and enhancement of skills along with expansion of opportunities for them. The government should provide market linkages to the SHGs so that do not face any problems in marketing their products. Since SHG members have found to use a significant proportion of loan funds on health related expenses, providing health insurance would spare these funds for opening micro-enterprises. Moreover, practice of grading

of SHGs and issuance of loans only when SHGs are found suitable should be adopted apart from constant monitoring of the loans extended to the groups.

The literacy rate of women was 65% according to the 2011 census while that of men is 82%. Though there has been an improvement but the desired levels have not been achieved yet. There is a need for governments and all the stakeholders to invest in women's traditional and vocational education. NGOs also have a special role to play of creating awareness regarding female education and transformation leading to a gender sensitive society.

This paper is unique in that it makes use of the empirical data from NABARD and NFHS to measure the impact of micro-finance access and dispersion on multiple indicators of women empowerment. The results clearly point out to the fact that provision of credit through the institutional sources does make a difference in women empowerment. Merely setting up a savings SHG does not lead to empowerment of women. One can assume that these results must be achieved by credit SHGs on account of micro-entrepreneurship by women members. When women members use the loans efficiently by starting small enterprises, it can lead to women empowerment. Given the outreach of this program in terms of the number of families and women it affects, a program of this magnitude can lead to women empowerment only when training and necessary hand-holding support is provided by filling the skill, knowledge and resource gap for talented women. This is especially true when there is a rise in NPAs (Non-Performing Assets) in SHG lending. The results point to the importance of credit-linking the SHGs and reducing the regional disparities in India to ensure that the program has widespread impact on women empowerment.

Appendix

Table A1. Number and Percentage of savings linked and credit linked SHGs as on 31st March,2021

Regions	Number of Savings linked SHGs	Percentage of Savings linked SHGs	Number of Credit linked SHGs	Percentage of Credit linked SHGs
Northern Region	6,09,808	5.43	1,43,275	2.48
North Eastern Region	6,33,714	5.65	1,64,421	2.84
Eastern Region	31,22,424	27.82	22,52,039	38.96

Regions	Number of Savings linked SHGs	Percentage of Savings linked SHGs	Number of Credit linked SHGs	Percentage of Credit linked SHGs
Central Region	13,45,575	11.99	3,68,271	6.37
Wetsern Region	15,50,176	13.81	3,12,913	5.41
Southern Region	39,61,703	35.3	25,39,325	43.93
Total	1,12,23,400		57,80,244	

Source: NABARD, 2020-21 and author's calculations

Table A2: Averages Of Variables Region-wise For The Years 2015-16 And 2019-20

Region	MD_1	MD_2	Y1	Y2	Y3	Y4
Central Region	0.6541	0.6874	0.0589	0.0502	0.0602	0.0569
Eastern Region	1.296	0.983	0.0428	0.0326	0.0466	0.0378
North Eastern Region	0.9731	0.4499	0.005	0.0042	0.0056	0.0045
Northern region	0.3643	0.5932	0.0183	0.014	0.0149	0.0194
Southern Region	1.323	1.159	0.043	0.0659	0.0524	0.0511
Western Region	0.8071	0.2804	0.0385	0.0465	0.0282	0.0334

Source: NABARD, NFHS and Author's calculations

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