

MICROFINANCE AND EMPOWERMENT OF RURAL WOMEN – AN EXERCISE IN BUSINESS ANALYTICS



DR. P. AMALANATHAN

XAVIER INSTITUTE OF MANAGEMENT AND ENTREPRENEURSHIP (XIME), KOCHI- 683 503, INDIA,

DR. S. NASEER MOHAMED JAFFER

XAVIER INSTITUTE OF MANAGEMENT AND ENTREPRENEURSHIP (XIME), BANGALORE - 560100, INDIA

ABSTRACT

Microfinance initiatives are taken with the objectives of poverty removal, social upliftment and empowerment of the beneficiaries especially women in the rural areas. Improvement in empowerment of the target groups can be evaluated only indirectly. Primary data collected in Pondicherry and two districts of Tamil Nadu are taken for this evaluation exercise in the present study. One non – parametric technique is used for this purpose. Business analytics is focused on formulation of business strategy based on information management. Microfinance initiatives can be enhanced in effectiveness through appropriate application of business analytics techniques. This is a vast and exciting area of research and debate. The present paper is a very small step in this direction.

Keywords: Business analytics, microfinance, empowerment, business strategy, social upliftment,

INTRODUCTION

Business analytics may be defined as delivering customer – centric decision support to the right people at the right time. Generally three types of decision makers are identified in an organization who are involved in customer analytics, developing an appropriate organizational strategy, a marketing strategy and an operational – level strategy. They are strategic decision makers, sales and marketing decision makers and operation decision makers. Studies have shown that most organizations do not understand and utilize the full potential of relevant information including customer analytics, during the strategy – making process. It is observed that consumer is the king under capitalism. It may be said in business, strategy is the king. Like business intelligence and business analytics, customer analytics is a part of information management. These efforts lead to formulation of business strategy. Microfinance has grown into an industry and it opposes any legislation to control its business. When microfinance institutions earned heavy profits and many of the borrowers, especially in Andhra Pradesh committed suicide, the government decided to enact suitable laws to protect the interest of small borrowers. The aim of the legislation is to strengthen formal microfinance. The broad aims of the paper is to apply business analytics to microfinance with special reference to the issue of empowerment.

Microfinance initiative is defined as small loans to poor people for undertaking self – employment projects that will generate income leading to economic and social upliftment. Economists and sociologists have been arguing that Self Help Groups

(SHGs), by providing microfinance and other social upliftment activities in villages empower poor people in general and women in particular. Banks which were cautious in the beginning turned liberal in lending to SHGs as the recovery rate was high even though they gave loans without sufficient collateral. The SHG – bank linkage programmes aim at poverty alleviation, self – reliance, healthcare enhancing, improvement in living standards and ultimately social empowerment to the poor especially women in rural areas. Concepts and techniques of customer analytics can be applied to analyze the effectiveness of these initiatives in social upliftment.

The effectiveness of a social action programme with an objective of upliftment of a target group depends, among other factors, on attitude and enthusiasm of the members of the group for whom such initiatives are undertaken. There are studies which attempt to evaluate the degree of effectiveness of such programmes. The present study is a small step in this direction and it makes use of a non – parametric technique on primary data collected from six villages in Pondicherry Union Territory, Cuddalore and Villupuram Districts of Tamil Nadu which are relatively backward areas in terms of industrial development and other indicators of socio – economic progress.

In the present study five indicators like self – confidence, boldness in facing problems, control over use of money, participation in household decision making and community participation are taken into account. The study has a null hypothesis and a research hypothesis. The null hypothesis is that the micro – finance and other initiatives of SHG

do not enhance social empowerment of rural women in the target areas and the research hypothesis is that they do enhance. Primary data collected through field surveys and applied to goodness of fit for the one – sample Chi – square test. The critical value and the calculated values obtained are compared to accept or reject the null hypothesis. Results of this non – parametric technique are quite revealing. Suggestions for further research are also given at the end of the study.

I. REVIEW OF LITERATURE

The role of finance in economic development was recognized but was not sufficiently emphasized [1]. We can find that finance was neglected in core economic theory for a long time. In classical economic theory money was merely a “veil” behind which market forces brought about growth in the real sector of the economy. In Keynesian economics fiscal policy was given more importance in the anti-cyclical policy of the government. After the end of World –War II economists began showing interest in the long term progress of the newly independent countries and development economics as a branch of economics emerged. The leading theorists among development economists gave importance to different variables in their explanation or development process in the less developed countries. For example, Colin Clark explained the structural transformation from agriculture to industry, Albert Hirschman on unbalanced growth, Arthur Lewis on unlimited supplies of labor, W.W Rostow on stages of economic growth and modernization and Paul N Rosenstein – Rodan on the big push in the economy [2]. In other words, finance was taken for granted in most theoretical discussions.

One of the pioneering theoretical works on the role of finance in economic development came in the writings of Gurley and Shaw [3]. These two economists emphasized the role of finance by highlighting the importance of financial institutions in the process of economic development. However they could not foresee the importance of government intervention that was necessary to pull the developing economies out of backwardness. In the Indian context, the ideas of a mixed economy, development through economic planning and socio-economic reforms directed at creating a democratic socialist society were the most accepted ones and they were put into practice till the beginning of liberalization process in the late nineteen eighties. At the global level the Washington Consensus brought in the process of liberalization, globalization and privatization in most parts of the world and accordingly India began implementing economic reforms since 1991. As the consequence of this

global process the state was on a retreat in the matters of theory and policy. However the critics of globalization pointed out the necessity of state intervention where market forces are either weak or non-existent. Among them Joseph Stiglitz emerged as a leading spokesperson to provide a theoretical rationale for government intervention in financial markets on the basis of his contribution in field of economics of information and information asymmetry [4]. The next stage of this intellectual activity was the focus on the neglected and marginalized sector’s financial needs and their place in economic development.

One of the important statements of Stiglitz in the theory of financial markets is that those in need of credit often cannot get it in the market system. In the informal sector the moneylender plays a significant role [5]. The relationship between the moneylender and the borrower is basically exploitative in nature. The moneylender controls other markets in rural areas also and as the result the borrower is in a weak position. The vulnerable condition of the borrower and the fact that there are no collaterals explain to a large extent the high usurious nature of the rate of interest charged on the loans. There has been huge public concern regarding the high rates of interest, the money lender’s unethical and often cruel mechanism of collection of interest and loan amounts. Under these circumstances emerged the concepts of micro-finance, rural upliftment and empowerment. It is difficult to find a better definition of microfinance than the one provided by Robinson, who defined it as follows “microfinance refers to small scale financial services for both credits and deposits – that are provided to people who farm or fish or herd; operate small or micro-enterprises where goods are produced, recycled, repaired or traded; provide services; work for wages or commissions; gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and local groups in developing countries in both rural and urban areas” [6]. It is also essential to note that microfinance represents much more than microcredit because it means the provision of a broad range of financial services such as deposits, loans for economically productive activities, money – transfers and insurance for poor and low income households.

The basic premise in lending small amounts to women is that it would contribute towards poverty reduction and eventually lead to empowerment of women. The reasons behind this is that it is generally believed that women are less likely to misuse the money obtained through loan and more likely to share the benefits obtained through investment among the members of the household,

especially children. Apart from this there is a distinct empowerment of women especially rural women. However, there is less consensus regarding the empowerment claim of microfinance and various studies in the subject point out different results, sometimes diametrically opposite ones.

First, there are studies which support the argument that microfinance to women has the potential of increasing their income – earning capabilities leading to greater self – confidence in doing different activities, improving the ability to face problems, control over use of money in the household expenses, choice of ownership of productive and consumer assets, enhanced role in household decision – making and increased participation in discussions on some public developmental issues [7]. Studies point out that microfinance credit to women beneficiaries leads to a series of favorable effects and the process of “virtuous circle” operates to bring about positive outcomes. When a women gets access to finance, she can either invest it in directly productive economic activity or indirectly productive family and social activity like better food and education for children and increasing her social status and decision – making ability. There are other studies which argue that microfinance loans made to women are used (and mostly misused) by their

possibility of this exercise leading to greater husbands which leads to enhanced dependence of women on their husbands in repayment of loans and ultimately to domestic violence [8]. One cannot overlook the possibility of women empowerment when there is misuse of credit and use of loan amounts in non – economic activities by her husband and use of credit by her relatives or herself with low entrepreneurial ability and lack of motivation to succeed.

II. PROGRESS OF THE MOVEMENT

The beginning of microfinance movement in India can be traced back to Self-Help Groups – banks linkage programme started as a pilot project in 1992 by NABARD. This programme has emerged as a most popular model of micro finance in India. Presently the financial/non-financial institutions like microfinance institutions, non-government organizations, Self-Help Groups, banks etc. have been saving millions of borrowers successfully. The progress of Self Help Groups (SHGs) – Banks Linkage Programme between 2000 – 01 and 2009 – 10 is given in the table.

Table 1: NABARD: SHG – Banks Linkage Programme (SHG – BL)

| Year – End (April – March) | Savings of SHGs with Banks | | SHGs Linked with Banks for Loans: Cumulative/Outstanding | | Per SHG Bank Loan (Rs) | NABARD Refinance | | Estimated Number of Poor Households Accessing Microfinance under SHG – BL (in Lakh)** |
|---|----------------------------|-------------------|--|-----------------|------------------------|-----------------------------------|-------------------------------------|---|
| | No. of SHGs | Amount of Savings | No. of SHGs | Amount of Loans | | No. of SHGs Involved in Refinance | Amount of Refinance during the year | |
| Old Data set: ‘cumulative’ up to 2006 – 07 | | | | | | | | |
| 2000-01* | - | - | 264 | 481 | 18,220 | 213 | 400 | 45.0 |
| 2001-02 | - | - | 462 | 1,026 | 22,208 | 340 | 796 | 78.0 |
| 2002-03 | - | - | 717 | 2,049 | 28,577 | 494 | 1,419 | 116.0 |
| 2003-04 | - | - | 1,079 | 3,904 | 36,182 | 611 | 2,124 | 167.0 |
| 2004-05 | - | - | 1,619 | 6,898 | 42,607 | 825 | 3,086 | 243.0 |
| 2005-06 | - | - | 2,239 | 11,398 | 50,907 | 900 (218) | 4,157 (1,068) | 330.0 |
| 2006-07 | - | - | 2,925 | 18,041 | 61,678 | - (271) | - (1,293) | 409.5 |
| New Data set: ‘outstanding’ | | | | | | | | |
| 2006-07 | 4,161 | 3,513 | 2,895 | 12,367 | 42,724 | - | 1,293 | 580.0 |
| 2007-08 | 5,010 | 3,785 | 3,626 | 17,000 | 46,884 | - | 1,616 | 701.0 |
| 2008-09 | 6,121 | 5,546 | 4,224 | 22,680 | 53,689 | - | 2,620 | 860.0 |

| | | | | | | | | |
|---------|-------|-------|-------|--------|--------|---|-------|-------|
| 2009-10 | 6,953 | 6,199 | 4,851 | 28,038 | 57,795 | - | 3,174 | 970.0 |
|---------|-------|-------|-------|--------|--------|---|-------|-------|

Note: (-) not available; *In the 2000 – 01 report, SHGs are only those covered under refinance; **NABARD has reported these numbers as poor households associated with banking agencies under the SHG – BL, for 2006 – 07 and thereafter under the new data set, the outreach numbers are linked to SHGs reporting savings with banks and not with credit – linked; Figures within brackets in cols. (7) and (8) are the refinance for the year.

Source: (i) NABARD *Annual Report 2009-10* and earlier issues.

(ii) NABARD's *Status of Micro Finance in India 2009-10, 2008-09, 2007-08 and 2006-07*.

It may be observed from the data given in Table 1 that there has been continuous improvement in the outcomes of the initiative. For example, there is continuous growth in savings of SHGs with the banks, SHGs linked with banks cumulative loans, per SHG bank loan, re – financed from NABARD and number of poor households accessing microfinance under SHG – BL. This shows how the microcredit movement based on SHG system has extensively spread in its operation especially in recent years. The regional pattern of performance is given in Table 2 in which cumulative growth in SHG – Linkage in major states of the country between the period 2002 – 2010.

Table 2: Cumulative Growth in SHG – Linkage in Priority States (As on March 31st) (Number of SHGs)

| State | Based on 'Cumulative Numbers' | | | | | Based on 'Outstandings' | | | |
|------------------------------|-------------------------------|-----------------|-----------------|-----------------|------------------|-------------------------|------------------|------------------|------------------|
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Assam | 1,024 | 3,477 | 10,706 | 31,234 | 56,449 | 81,454 | 75,405 | 88,878 | 100,422 |
| Bihar | 3,957 | 8,161 | 16,246 | 28,015 | 46,221 | 72,339 | 73,750 | 83,444 | 82,215 |
| Chhattisgarh | 3,763 | 6,763 | 9,796 | 18,569 | 31,291 | 41,703 | 44,833 | 45,186 | 52,588 |
| Gujarat | 9,496 | 13,875 | 15,974 | 24,712 | 34,160 | 43,572 | 32,130 | 37,105 | 69,286 |
| Himachal Pradesh | 5,069 | 8,875 | 13,228 | 17,798 | 22,920 | 27,799 | 35,982 | 32,752 | 27,209* |
| Jharkhand | 4,198 | 7,765 | 12,647 | 21,531 | 30,819 | 37,317 | 57,250 | 40,824 | 63,741 |
| Maharashtra | 19,619 | 28,065 | 38,535 | 71,146 | 131,470 | 225,856 | 345,059 | 353,566 | 384,765 |
| Madhya Pradesh | 7,981 | 15,271 | 27,095 | 45,105 | 57,125 | 70,912 | 53,607 | 55,579 | 76,928 |
| Orissa | 20,553 | 42,272 | 77,588 | 123,256 | 180,896 | 234,451 | 283,202 | 335,811 | 372,646 |
| Rajasthan | 12,564 | 22,742 | 33,846 | 60,006 | 98,171 | 137,837 | 72,599 | 97,957 | 96,206 |
| Uttar Pradesh | 33,114 | 53,696 | 79,210 | 119,648 | 161,911 | 198,587 | 115,954 | 112,620 | 338,357 |
| Uttarakhand | 3,323 | 5,853 | 10,908 | 14,043 | 17,588 | 21,527 | 95,736 | 118,731 | 30,049* |
| West Bengal | 17,143 | 32,647 | 51,685 | 92,698 | 136,251 | 181,563 | 338,425 | 472,556 | 507,782 |
| Total for 13 priority states | 141,804 (30.7) | 249,462 (34.8) | 397,464 (36.8) | 667,761 (41.3) | 1,005,272 (44.9) | 1,374,917 (47.0) | 1,623,932 (44.8) | 1,875,009 (44.4) | 2,202,194 (45.4) |
| BIMARU states | 68,900 (14.9) | 120,251 (16.8) | 189,748 (17.6) | 306,917 (19.0) | 4,43,126 (19.8) | 5,80,222 (19.8) | 5,13,729 (14.2) | 5,54,341 (13.1) | 7,40,084 (15.3) |
| Southern states | 3,17,276 (68.8) | 4,63,712 (64.6) | 6,74,356 (62.5) | 9,38,941 (58.0) | 12,14,431 (54.3) | 15,22,144 (52.0) | 18,61,373 (51.3) | 22,80,911 (54.0) | 25,82,112 (53.2) |
| All-India total | 4,61,478 | 7,17,360 | 10,79,091 | 16,18,456 | 22,38,565 | 29,24,973 | 36,25,941 | 42,24,338 | 48,51,356 |

Note: Figures in brackets represent percentages to All – India totals; *These appear to be against the trend.

Source: NABARD publication on *Status of Micro Finance in India 2009-10* and other earlier issues.

There is regional difference in the outcomes. For example, the Southern states outperform other states in the matter of advances made to the beneficiaries. It can be seen that the BIMARU states lag behind and experience very slow progress. There

are various factors that explain differential performance of states and an analysis of these factors is beyond the scope of the present paper.

One important feature in this whole exercise is the realization that women play a very important role in socio – economic advancement of a community. This fact can be seen from the dominance of women SHGs in the SHG movement. Table 1 gives the progress of women SHGs in total SHGs.

Table 3: Importance of Women SHGs in Total SHGs

| Particulars | Year | Total SHGs | | Exclusive Women SHGs | | Percentage of Women SHGs to Total SHGs | |
|---------------------|------------|------------|-----------|----------------------|-----------|--|------|
| | | No. | Amt. | No. | Amt. | No. | Amt. |
| Savings Linked SHGs | 2006-07 | 41,60,584 | 3,512.71 | 32,71,239 | 3,024.98 | 78.6 | 86.1 |
| | 2007-08 | 50,09,794 | 3,785.39 | 39,86,093 | 3,108.65 | 79.6 | 82.1 |
| | 2008-09 | 61,21,147 | 5,545.62 | 48,63,921 | 4,434.03 | 79.5 | 80.0 |
| | 2009-10 | 69,53,250 | 6,198.71 | 53,10,436 | 4,498.66 | 76.4 | 72.6 |
| | 2006-07 | 11,05,749 | 6,570.39 | 9,57,920 | 5,677.36 | 86.6 | 86.4 |
| Loans disbursed | 2007-08 | 12,27,770 | 8,849.26 | 10,40,996 | 7,474.26 | 84.48 | 84.5 |
| | 2008-09 | 16,09,586 | 12,253.51 | 13,74,579 | 10,527.38 | 85.4 | 85.9 |
| | 2009-10 | 15,86,822 | 14,453.30 | 12,94,476 | 12,429.37 | 81.6 | 86.0 |
| | 31.03.2007 | 28,94,505 | 12,366.49 | 23,89,408 | 10,137.39 | 82.5 | 82.0 |
| Loans outstanding | 31.03.2008 | 36,25,941 | 16,999.91 | 29,17,259 | 13,335.61 | 80.5 | 78.5 |
| | 31.03.2009 | 42,24,338 | 22,679.84 | 32,77,355 | 18,583.54 | 77.6 | 81.9 |
| | 31.03.2010 | 48,51,356 | 28,038.28 | 38,97,797 | 23,030.36 | 80.3 | 82.0 |

Source: NABARD's *Status of Micro Finance in India 2009-10, 2008-09 and 2006-07*.

It can be seen that there is progress in both the number as well as the amount of outstanding in the case of total SHGs as well as exclusive women SHGs between the period 2006 – 07 and 2009 – 10. The percentage of number of women SHGs to total SHGs increased from 78.6 in 2006 – 07 to 80.3 as on 31st March, 2010. In the matter of amount of outstanding it was 86.1 in 2006 – 07 and it slightly declined to 82 percent as on 31st March 2010. It may be observed that the exclusive women SHGs account for more than 80 percent of the number and the amount outstanding.

Microfinance therefore is an emerging discipline in today's financial world. Indeed it is a weapon in the hands of marginalized poor people to fight a war against poverty. The multi-facets of finance thus reflect acknowledging that saving services will help to improve well-being of the poor in general and of women in particular.

The major objectives of the micro finance through SHG bank linkage programme are:

1. Poverty alleviation
2. Self-reliance

Table 4: The details of the sample size

| Sl. No. | Name of NGO | No. of villages in each NGO | No. of groups in each village | No. of respondents in each group | Total |
|---------|-------------|-----------------------------|-------------------------------|----------------------------------|-------|
|---------|-------------|-----------------------------|-------------------------------|----------------------------------|-------|

3. Health care enhancing
4. Improvement in living condition and
5. Social empowerment of women

In the context of social empowerment of women, the following are identified as indicators of social empowerment for this study:

1. Self confidence
2. Boldness in facing problem
3. Control over use of money
4. Participation in household decision making
5. Community participation

III. SOURCE OF DATA

The present study was undertaken among the chosen group of rural SHG women in Pondicherry and two districts of Tamil Nadu namely Cuddalore and Villupuram. Since the researcher has past experience in working with SHG in and around Pondicherry and neighboring districts of Tamil Nadu three NGOs were chosen who have organized groups for more than five years in different places. Accordingly one NGO from each area were purposively selected for this study.

| | | | | | |
|---|-------------------------|---|---|---|----|
| 1 | BWRD – Pondicherry | 2 | 5 | 5 | 50 |
| 2 | BLESS – Cuddalore | 2 | 5 | 5 | 50 |
| 3 | GOODWILL- Villupuram | 2 | 5 | 5 | 50 |

Based on the information provided by the NGOs in the villages in which they have organized groups, five groups and two villages from each NGO were randomly selected in three areas. In the last stage five SHGs that completed five and above years of existence as on 31st March 2012 were selected. Totally 30 SHGs were randomly selected. From each group, five members who were involved in microenterprises were chosen. A total of 150 members constitute sample group. The primary data was collected from 150 respondents through an interview schedule. Percentage analysis and averages were used to

measure the social changes of the SHG and rural women in this study area.

1. Perception on social empowerment

The respondents were asked to indicate their perception on whether their membership in SHGs had any impact on their empowerment in general and on various social matters as per the indicators mentioned above. The results of the respondents are as presented below:

Table 5: Impact of social empowerment of women

| District | Increase | No change | Decrease | Drastically decreased | Total |
|-------------|----------|-----------|----------|-----------------------|-------|
| Pondicherry | 90.2% | 8.2% | 0.8% | 0.8% | 100 |
| Cuddalore | 80.4% | 16.6% | 1.2% | 1.8% | 100 |
| Villupuram | 76% | 18% | 4.8% | 1.2% | 100 |
| Total | 82.2% | 14.2% | 2.3% | 1.2% | 100 |

A very high percentage (82.2) of households indicated that the social empowerment of women has increased after attaining membership in the SHGs over a period of time. A low percentage (14.2) of respondents reported no change in their social empowerment, and a very small percentage (2.3) reported decrease in their empowerment. It is revealed that the percentage of respondents reporting increase in social empowerment of women was highest in Pondicherry followed by Cuddalore and Villupuram districts.

2. Level of change in self – confidence in women

compared to pre-SHG period:

Table 6: Distribution of respondents by self – confidence levels in different activities

| Type of activity | Level of confidence (%) | | | |
|---|-------------------------|----------|-----------|-----------|
| | Significantly improved | Improved | No change | Decreased |
| Travelling alone to nearest town/district head quarters | 45.2 | 34.0 | 8.1 | 12.7 |
| Going alone for the medical treatment of self-children | 40.0 | 36.6 | 8.0 | 15.4 |
| Handling of family money | 41.0 | 47.4 | 6.9 | 4.7 |
| Opportunity to speak in meeting | 32.2 | 41.2 | 20.1 | 6.5 |

Source: Primary data

From the table it is observed that the response of beneficiaries reporting significant improvement of self – confidence are reflected mostly in the aspect of travelling alone. Except in the matter of

In order to know the level of changes in self – confidence of women, information regarding the following aspects was collected:

- 1) Travelling alone to nearest town/district head quarters
- 2) Going alone to medical treatment
- 3) Handling of family money
- 4) Opportunity to speak in meeting

The following table provides the percentage of women indicating level of improvement in self-confidence

opportunity to speak in meeting, more than 75 % of respondents indicated significant improvement in self – confidence.

3. Level of change in ability to face problem

The problematic situations faced by women are indicated in following three aspects:

- 1) Health related problems.
- 2) Finance related problems.
- 3) Family related problems like disputes and conflicts.

Information regarding their ability to face the above problems are recorded and compared to pre –SHG period. The following table describes the percentage of women respondents' level of improvements towards change in their abilities to face the given problem in following table:

Table 7: Distribution of respondents' ability to face problems

| Type of problem | Significantly improved | Improved | No change | Significantly reduced |
|-----------------|------------------------|----------|-----------|-----------------------|
| Health related | 40.2 | 48.8 | 5.8 | 5.2 |
| Finance related | 32.1 | 50.0 | 9.0 | 8.9 |
| Family related | 35.4 | 48.9 | 7.0 | 7.7 |

Source: Primary data

From the above table, on the whole it is observed that the improvement in respondents' ability to face health related problem are reported to be 89%, while more than 80% respondents were confident to handle financial problems as well as family disputes and conflicts.

4. Level of changes in control over use of money by respondents

With a view to know if the women's' control over use of money they earned has improved overtime

| Type of use of money | Significantly improved | Improved | No change | Decreased |
|-----------------------------------|------------------------|----------|-----------|-----------|
| Buying consumer durable goods | 30.4 | 36.8 | 20.2 | 12.6 |
| Buying physical assets | 15.2 | 39.6 | 35.2 | 10.0 |
| Expenditure on family function | 21.4 | 46.6 | 20.4 | 11.6 |
| Expenditure on children education | 28.2 | 41.1 | 20.2 | 10.5 |

Source: Primary data

From the above table it is revealed that there is a significant improvement in control over use of money on children's' education by women (69.3%) followed by expenditure on family function (68%) purchase of consumer durables (67.2%) and purchase of physical assets (54.8%).

1. Level of changes in ownership of productive and consumer assets

Data from members of SHG was collected on their opinion whether the membership in SHG has made

as compared to pre-SHG era, information is collected in the following aspects:

- 1) Buying consumer durable goods
- 2) Buying physical assets
- 3) Expenditure on family function
- 4) Expenditure on children education

The percentage of respondents reporting improvement in control over money compared to pre-SHG is shown in following table:

any impact in terms of increased ownership in productive assets like land, livestock, and business assets over the pre-SHG period. The response of the beneficiaries were categorized into increased, no change and decreased and drastically decreased.

This information was also collected on the change in SHG members ownership over household assets compared to pre-SHG period. The following table provides the results on changes in members' ownership over productive and consumer assets:

Table 9: Distribution of respondents' ownership of productive and consumer assets

| Type of assets | Percentage distribution of households | | | |
|--------------------------|---------------------------------------|-----------|----------|-----------------------|
| | Increase in ownership | No change | Decrease | Drastically decreased |
| Productive assets | | | | |
| Pondicherry | 60.2 | 34.1 | 1.5 | 4.2 |
| Cuddalore | 62.4 | 29.4 | 1.8 | 6.4 |
| Villupuram | 61.6 | 33.2 | 1.5 | 3.7 |
| All districts | 61.4 | 32.2 | 1.6 | 4.8 |

| Household assets | | | | |
|------------------|------|------|-----|-----|
| Pondicherry | 74.2 | 18.0 | 2.4 | 5.4 |
| Cuddalore | 72.8 | 15.2 | 2.5 | 7.5 |
| Villupuram | 76.2 | 16.2 | 3.6 | 4.0 |
| All districts | 75.0 | 16.6 | 2.8 | 5.6 |

Source: Primary data

From the above table it is revealed that more than 60% of the respondents indicated that there was an increase with ownership of productive assets in the post –SHG situation. More than 30% of the respondents reported that there was no change in the ownership of the productive assets. About 75% of the respondents revealed that there was an increase in the ownership of household assets.

5. Level of change in household decision making

It is expressed that participation of various SHG activities encourages women to take part in

household decision making. The selected areas women were asked to provide their opinions in whether there was any change in decision making from the pre – SHG to post – SHG period were the following:

- 1) Children’s education
- 2) Purchase of assets
- 3) Taking loans
- 4) Use of loans

Based on the data collected the results were presented in the following table:

Table 10: Distribution of respondents based on their decision making level in pre-SHG and post –SHG periods

| Item/period | Decision taken by | | | |
|-----------------------------|-------------------|--------|---------|--------|
| | Women members | Spouse | Jointly | Others |
| Children’s education | | | | |
| Pre –SHG | 9.2 | 40.2 | 45.8 | 4.8 |
| Post SHG | 25.9 | 15.6 | 56.5 | 2.0 |
| Purchase of assets | | | | |
| Pre –SHG | 7.5 | 40.5 | 47.3 | 2.0 |
| Post SHG | 20.5 | 24.3 | 53.6 | 1.6 |
| Taking decisions | | | | |
| Pre –SHG | 10.6 | 41.8 | 40.3 | 7.3 |
| Post SHG | 25.4 | 19.3 | 54.2 | 1.1 |
| Use of loans | | | | |
| Pre –SHG | 9.8 | 43.3 | 42.6 | 4.3 |
| Post SHG | 28.4 | 17.6 | 51.6 | 2.4 |

Source: Primary data

The above table reveals that the share of women in household decision making increased from an overall average of nearly 9 % to about 24% who took decisions solely on their own in the post SHG period. The joint decision making by women with their spouse also improved significantly in all aspects. Thus the participation of women in the household decision making process increased significantly after joining SHG.

6. Level of changes in participation in public issues at village level

To understand the participation of women in public issues at the village level the selected respondents

were asked to provide their perception for the pre and post SHG period on:

1. Whether they have ever approached a government official to obtain services to solve problem.
2. Whether they attended any village meeting such as village panchayat, panchayat union, gram sabha or any other meeting.
3. Whether they have been members of any village or government committee.

Following table provides the percentage of members participated in various activities noted in both pre and post SHG period at the selected districts in the target area.

Table 11: Changes in participation on public issues by respondents (district –wise)

| Districts | Approached to government officials to solve problems | Attended committees village meeting | Members of village committee |
|-----------|--|-------------------------------------|------------------------------|
| | | | |

| | Pre-SHG | Post SHG | Pre-SHG | Post SHG | Pre-SHG | Post SHG |
|-------------|---------|----------|---------|----------|---------|----------|
| Pondicherry | 10.3 | 49.9 | 15.6 | 60.2 | 7.8 | 24.6 |
| Cuddalore | 14.2 | 50.7 | 18.7 | 61.0 | 6.5 | 26.3 |
| Villupuram | 15.8 | 48.6 | 14.3 | 63.3 | 7.9 | 20.6 |
| Total | 14.4 | 49.7 | 16.2 | 61.5 | 7.4 | 23.8 |

Source: Primary data

The above results revealed that there was a significant improvement in all the districts from

about 40% (pre – SHG) to 60% (post – HG) in the matter of approaching government officials and attending community and village meetings.

IV. METHODOLOGY

Chi – square is an important non – parametric test that allows one to determine whether what one observes in a distribution of frequencies would be what one would expect to occur by chance. The chi – square test involves a comparison between what is observed and what would be expected by merely chance. The formula for calculating the chi – square for one – sample chi – square test is given below:

$$\chi^2 = \sum_{K=0}^n \frac{(O_K - E_K)^2}{E_K}$$

Where χ^2 is the chi – square value, O is observed frequency and E is expected frequency. The null hypothesis states that there is no difference in the frequency or the proportion of occurrences in each category.

$$H_0: P_1 = P_2 = P_3 = P_4 = P_5$$

The research hypothesis states that there is a difference in the frequency or proportion of occurrences in each category.

$$H_1: P_1 \neq P_2 \neq P_3 \neq P_4 \neq P_5$$

Any test between frequencies or proportions of mutually exclusive categories requires the use of chi – square. The degree of freedom is the number of categories in which data have been organized. For this particular test statistic, the degrees of freedom are ‘r- 1’ where ‘r’ equals number of rows. If the obtained value is more extreme than the critical value, the null hypothesis cannot be accepted. For example, in $\chi^2_{(2)} = 30.6$, $p < 0.05$, χ^2 represents the test statistic, (2) is the number of degree of freedom, 30.6 is the obtained value in the calculation and $p < 0.05$ indicates that the probability is less than 5 percent on any one test of the null hypothesis that the frequency of occurrences is equally distributed across all categories by chance alone.

The null hypothesis of the study is that microfinance initiatives do not enhance the empowerment of rural women in the target areas. The obtained value of chi square is greater than the critical value pertaining to the respective degree of freedom at 5% level of significance in the case of all the five parameters of empowerment given above. Therefore the null hypothesis can be rejected and alternative research hypothesis that the

microfinance initiatives do enhance empowerment of rural women in target areas can be accepted.

V. CONCLUSION

The arguments presented in the paper can be recapitulated. Finance plays a crucial role in economic development and its role in the development process has been analysed by development economists. Whether financial development follows economic development or financial development leads economic development is an issues not yet settled by researchers. Micro-finance has emerged as a key driver in the socio-economic transformation. Small borrowers who have very little to offer as collateral get credit and other services from microfinance institutions. The SHG – bank linkage programmes provide hope of not only poverty alleviation, rural upliftment but also empowerment, especially of women in rural area. The results obtained in the present study support this view, to some extent. The application of techniques of business analytics has a huge scope in improving the effectiveness of microfinance and other financial inclusion initiatives. This area of study needs more research efforts and debates.

Notes:

1. See Waelbroeck, Jean (1998): “Half a century of Development Economics: A review based on the Handbook of Development Economics” *World Bank Policy Research Working Paper No:1925* and Jalilian, Hossein and Colin Kirkpatrick 2001: “Financial Development and Poverty Reduction in Developing countries”, Finance and Development Research Programme, *Working Paper Series*, Paper No.30.
2. See Chandavarkar, Anand (1992): “Of Finance and Development: Neglected and Unsettled Questions,” *World Development* 20(1), January.
3. See Gurley G. J. and S. Shaw (1960): *Money in the Theory of Finance*, The Brookings Institution Washington D. C.
4. See Stiglitz, Joseph E. and A. Weiss (1981): “Credit Rationing in Markets with Imperfect Information” *American Economic Review* 71(3): 393-410 and Stiglitz, Joseph E (2000) *Economics of the public sector*, Norton London.

5. See, for example, Hoff K. and J. Stiglitz (1998): "Moneylenders and Bankers: Price – Increasing Subsidies in Monopolistically Competitive Markets" *Journal of Development Economics* 55(2) 485-518.
6. See Robinson, Marguerite (1998): "Microfinance: The Paradigm shift from credit delivery to Sustainable Financial Intermediation" in Mwangi S. Kimenyi, Robert C. Wieland and J .D. Von Pischke (eds) (1998): *Strategic Issues in Microfinance* Ashgate Publishing Aldershot.
7. See, for example, Kabeer N. (1999) "Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment" *Development and Change*, Vol 30, No. 3 July pp. 435 – 464, Kabeer N. (2001): "Conflicts over credit: Re – evaluating the Empowerment Potential of Loans to Women in Rural Bangladesh" *Women Development*, Vol. 29, No. 1 pp. 63 – 84 and Kabeer N. (2005): "Gender Equality and Women Empowerment: A Critical Analysis of the Third Millennium Development Goal" *Gender and Development* Vol. 13, No. 1, March, pp. 13 – 24. In these studies, she elaborates the three interrelated indivisible dimensions of women empowerment namely resources, agency and achievement, which are essential in the process of women empowerment. Similar findings are reported in other studies also, for example, see Hashemi, S. M., S. Schuler and A. P. Riley (1996), Pitt, Mark and ShahidurKhandker (1998) and Rahman A. (1986).
8. See, for example, Goetz, A. M. and R. S. Gupta (1996): "Who takes the Credit? Gender Power and Control over Loan use in Rural Credit Programmes in Bangladesh" *World Development*, Vol. 24, No. 1 January pp. 45 – 63. Leach F and S. Sitaraman (2002): "Microfinance and Women's Empowerment: Lessons from India" *Development in Practice* Vol. 12, No. 5, November pp. 575 – 588 and Rahman A. (1999).

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1. Hashemi, S. M., S. Schuler and A. P. Riley (1996) "Rural credit Programmes and Women's Empowerment in Bangladesh: " *World Development* Vol. 24, No. 4 May, pp. 635 – 653.
2. Pitt Mark and ShahidurKhandker (1998): "The Impact of Group Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?" *Journal of Political Economy*, 106 (5): pp. 958 – 996.
3. Rahman A. (1999): "Microcredit Initiatives for Equitable and Sustainable Development: Who pays?" *World Development*, Vol. 27, No. 1, January pp. 67 – 82.
4. Rahman A. (1986): "Impact of Grameen Bank on the Situation of Poor Rural Women", *Grameen Bank Evaluation Project Working Paper No. 1*, Bangladesh Institute of Development Studies.