The Microfinance Promise in Financial Inclusion and Welfare of the Poor: Evidence from India

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Abstract

Microcredit is a recent addition to India's poverty-alleviation strategy. However, it has been taken a paradigm shift from credit (only) services to microfinance (credit plus services) services. This study examined the promise of microfinance (institutions) programme in the (financial) inclusion of marginalized and vulnerable poor, who have been excluded from the formal credit markets for a long period of time. In the paper we also looked at the welfare impact of "credit plus services" on the poor. This paper uses primary data on household participants of microfinance programme in the state of Karnataka. We find that majority of the sample households were not accessed the credit and non-credit services in the pre-microfinance programme. While, in the post-microfinance large number of the member households are not only accessing the credit services, but also they are competent enough to access the savings, micro-insurance and other non-financial services. The access to "credit plus services" of microfinance programme has improved the income, employment, assets, household expenditure, housing condition and empowerment of the poor. Policy recommendation includes the delivering of credit plus services to the marginalized and vulnerable poor at a minimum cost will have wider impact on the socio-economic welfare of the poor.

1. Introduction

About 238 million people in India live below the poverty line with the per capita income of less than one dollar per day[1]. The policy makers and practitioners who have been trying to improve the lives of these poor and fight against poverty. This got reflected in the successive five-year plans, which had the objectives of 'growth with equity' and 'social justice'. The planners however, realized that rapid growth did not bring about 'trickle down' effect, particularly so in rural areas. This realization led to the restructuring of institutions and schematic lending to facilitate better accessibility of credit for the underprivileged. Thus, initiatives in this regard were taken by building an institutional framework through nationalization of banks, creation of regional rural banks. The government sponsored several programmes and projects to bring the excluded poor into the mainstream "development". These programmes were failed to target the vulnerable poor. And many now believe that

[1] NSSO, 2004-05 (61st round).

government assistance to the poor often creates dependency and disincentives that make matters worse, not better. Moreover, despite decades of aid, communities and families appear to be increasingly fractured, offering a fragile foundation on which to build (Morduch, 1999).

Amid the distressed news, enthusiasm is building about a set of unusual financial institutions prospering in distant corners of the country. The hope is that much poverty can be alleviated and the economic and social structures can be transformed fundamentally by providing financial services to low income households. These institutions, united under the banner of "microfinance", share a commitment to serving clients that have been excluded from the formal banking sector (ibid). According to National Sample Survey Organization's (NSSO), 59th Round (2003), only 48.6 per cent of the total number of cultivator households received credit from both formal and informal sources (financial inclusion in a broader sense) and remaining 51.4 per cent did not receive any credit (total financial exclusion). In the same survey it is further revealed that 22 per cent of the cultivator households received credit from informal sources (financial inclusion in narrow sense). Only 27.6 per cent of the farmer households has availed credit from the formal institutions like banks, cooperatives and government (Jeromi, 2006). Further, a Rural Finance Access Survey 2003, conducted by the World Bank and NCAER, revealed that 79 per cent of the rural households has no access to credit from formal sources (Basu, 2005). Hence, the tasks of microfinance are the promotion of greater *financial inclusion*[2] and in the process improve the social and economic welfare of the poor.

In this backdrop, the paper examines the promise of microfinance (credit plus services) in the inclusion (access) of excluded and to analyse the impact of the "credit plus services"[3] on the social and economic welfare of the poor households.

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[2] Financial inclusion is delivery of banking services at an affordable cost to the vast sections of disadvantage and low-income groups who tend to be excluded. Microfinance has to try to ensure appropriate financial services are made available to everybody. It means helping the under-privileged to understand and to access those services, to make their lives easier. It also means that the solutions have to be cost effective, otherwise, they will opt out.

[3] It is also called as the "integrated approach" or "maximalist approach" in microfinance. Where the credit services will be provided with savings, micro-insurance, micro-enterprises or self-employment development, health care services, various training and awareness, networking with various institutions, etc, to the clients of microfinance.

The organisation of the paper is as follows. Section 2 presents the theoretical insights between microfinance and poverty. Section 3 describes sources of data, which consists of survey design and survey area. Section 4 deals with empirical results followed by the conclusion and policy implication in the last section.

2. Microfinance and Poverty Alleviation: Theoretical Insights

Poverty alleviation has been one of the key development challenges over the decades. One of the identified key constraints facing by the poor is lack of access to formal sector credit. It will facilitate them to take advantage of economic opportunities to increase their level of output, hence move out of poverty. Credit is considered to be an essential input to increase productivity, mainly land and labour. It is believed that credit boots income levels, increases employment at the household level and thereby alleviates poverty. Credit facilitates poor people to triumph over their liquidity constraints and undertake some income generating activities. Furthermore, credit helps poor people to smoothen their consumption patterns in times of lean periods of the year (Binswanger and Khandker, 1995). The improved consumption is an investment in the productivity of the labour force or human capital. Hence, credit will maintain the productive capacity of rural poor households (Heidhues, 1995; Hulme and Mosely, 1996; Mosely and Hulme, 1998; Hulme, 2000; Navajas *et al.*, 2000).

The proposed goal of microfinance sector is to improve the welfare of the poor as a result of better access to small loans. The lack of access to credit for the poor may have negative consequences for various household level outcomes including technology adoption, agricultural productivity, food security, nutrition, health and overall welfare. Access to credit therefore affects welfare outcomes by alleviating the capital constraints of poor households. Access to credit in addition increase the poor households' risk-bearing ability, improves their risk-copying strategies and enables consumption smoothing over time. By so doing, microfinance is argued to improve the welfare of the poor (Navajas, *et al.*, 2000; Diagne and Zellar, 2001).

Microfinance programmes have a potentially significant contribution to economic, social, political and psychological empowerment of the poor in general, women in particular. Through access to timely credit, savings, insurance and entrepreneurial training, women have become successful entrepreneurs, increased their household income and well-being. Regardless of their scale, outreach, location and the type of clients, all microfinance programme interventions target one thing in common – human development that is geared towards both the economic and social uplift of the people that they cater for.

There are a couple of studies argue that microfinance very helpful in improving the economic and social welfare of the member households (Hossain, 1988; Remeny and Benjamin, 2000; Otero and Rhyne, 1994; Khandkar, 1998). The study by Mosley (2001) reveals that the achievement of microfinance in reducing the poverty in Bolivia, Bangladesh and Indonesia is quite impressive and reached reasonably large number of poor (not the vulnerable poor or extreme poverty). Zellar and Sharma (1998) argued that microfinance could help to establish or expand family enterprises, potentially making the difference between grinding poverty and economically secure life. The impact studies from Bangladesh shows that participation in microfinance programme can exert a large positive impact on self-employment profits (McKernan, 2002), while Pitt and Khandker (1998) find that has a significant impact on the well-being of poor households and that this impact is greater when credit is targeted to women. The programme participation has positive impacts on household income, production, and employment, particularly in the rural non-farm sector. Some of the studies find that microfinance programme participation exerts a statistically significant impact on one or more aspect of female empowerment, such as contraceptive use or intra-household decision-making (Hashemi *et al.*, 1996; Goetz and Gupta 1996; Schuler and Hashemi, 1994).

Otero (1999) illustrates that microfinance creates access to productive capital for the poor, together with human capital, addressed through education and training and social capital achieved through local organization building, enables people to move out of poverty. By providing material capital to a poor person, their sense of dignity is strengthened and this can help to empower the person to participate in the economy and society (Otero, 1999).

More recently, Littlefield, Morduch and Hashemi (2003), Simanowitz and Brody (2004) have commented on the critical role of microfinance in achieving the Millennium Development Goals (MDGs). They state that microfinance is a key strategy in reaching the MDGs and in building global financial system that meet the needs of the poorest people. Microfinance is unique among development interventions; it can deliver social benefit on an ongoing, permanent basis and a large scale. In a comprehensive study by Hulme and Mosley (1996) argue that well-designed programmes can improve the incomes of the poor and can move them out of poverty.

Microfinance programme target both economic and social poverty through the credit and non-credit services. This referred in microfinance programme as "credit plus services" (Edgcomb and Barton; 1998; Zohir *et al*., 2001) as they provide services (such as savings, insurance, health services, adult literacy) or training that go beyond financial services. However, impacts of these services have been little documented up to now (Zellar and Meyer, 2002; Godquin, 2004).

3. Survey Design and Data

Generally, the microfinance programmes is to correct market failure in delivering credit and non-credit services to the rural poor. Most microfinance programmes state that their primary goal is to alleviate rural poverty by delivering financial and non-financial services to the poorest households, especially to the women in those households.

The data sources for the study were primary data collected from the project areas of two Microfinance Institutions (MFIs) in Karnataka, namely SKDRDP[4] and Sanghamithra Rural financial Services[5], Mysore, respectively, with the help of survey method and focus group discussions. In all, 318 households from 10 villages from two taluks – Belthangady taluk of Dakshina Kannada district and T. Narasipura taluk of Mysore district of two districts in Karnataka were selected. The villages are selected on the basis of maximum number of microfinance groups linked to the MFI. There after, based on random sampling

[4] Shri Kshetra Dhamrmasthala Rural Development Project (SKDRDP), an NGO-MFI (not for profit) working in the state of Karnataka with more than one lakh microfinance members.
[5] Sangamithra Rural Microfinance Services (SRFS), Section 25, not-for profit MFI working in the state of Karnataka, Tamil Nadu and Andhra Pradesh.

method the groups were selected and consequently from each group 30 per cent of the member households were randomly selected. The study considers pre-microfinance (before) condition of the household as a *comparison* or *control group*. While the post-microfinance (after) condition of the member households are considered as the *member groups*[6]. Hence, to study the financial inclusion (access to microfinance) and impact of microfinance on the welfare of the member household, pre and post microfinance intervention information's of the households are collected. Each village was surveyed and collected data on household demographics, assets, income, expenditures, details of SHG membership, savings, access to credit, insurance, training and awareness, access to health care facility, social networks, self-employment or micro-enterprise development, and other services accessed from the members.

Survey Area: Most of the households are prior to microfinance programme were engaged in wage labour – 39.6 and 47.8 per cent in Belthangady and T. Narasipura, respectively. Nearly, 28.9 (Belthangady) and 34 per cent (T. Narasipura) of the women are housewives and another 18.9 and 7.5 per cent in Belthangady and T. Narasipura were unemployed. Most people in T.Narasipura are Forward castes – 30.8 per cent, Scheduled castes – 30.2 per cent and Scheduled tribes – 23.9 per cent. However, majority of the people in Belthangady are belongs to other back ward castes – 48.4 per cent, Scheduled tribes – 22.6 per cent and Scheduled caste – 13.8 per cent. In the sample group, 78.6 and 83.6 per cent members in Belthangady and T. Narasipura respectively are married. Similarly, in the time of survey, 15.1 and 4.4 per cent members are unmarried, 1.9 per cent (in each taluk) members are divorced or separated and 4.4 and 10.1 per cent members are widowed in Belthangady and T. Narasipura respectively. There were 29.6 and 52.2 per cent members in Belthangady and T.Narasipura taluk are illiterates. In the total sample very small percentage of the members

[6] The study found difficult to get the comparable control group, who are not a part of microfinance programme in the study area. The microfinance programme in the selected study area is widely reached and getting the non-microfinance member was a difficult task. Hence, this study considered the pre and post microfinance condition of the member households as control and member groups. The member group consists of less than 7 years membership in microfinance. The problem of 'memory recall' was controlled through the focus group discussion. The credit and non-credit services accessed by the members from the microfinance groups are observed from the records that are maintained in the groups. However, 'memory recall' found to be one of the limitations of the present study.

are having the education of degree and more. It will be interesting to see the access to credit plus services and its impact on the member households across their educational levels.

Table 1: Socio-economic profile of the microfinance members across the taluks

Socio-economic indicators of the HH	Taluks		Socio-economic indicators of the HH	Taluks	
Caste of the Households	**BL**	**TN**	**Marital Status**	**BL**	**TN**
Scheduled caste	22 (13.8)	48 (30.2)	Married	125 (78.6)	133 (83.6)
Scheduled tribe	36 (22.6)	38 (23.9)	Unmarried	24 (15.1)	7 (4.4)
Backward caste	77 (48.4)	24 (15.1)	Divorced/Separated	3 (1.9)	3 (1.9)
Minorities	18 (11.3)	0	Widowed	7 (4.4)	16 (10.1)
Forward caste	6 (3.8)	49 (30.8)	**Level of Education**		
Occupation			Illiterate	47 (29.6)	83 (52.2)
Agricultural and Non Agricultural Wage Labour	21 (13.2)	34 (21.4)	Primary (1 to 5)	48 (30.2)	24 (15.1)
Cultivation	11 (6.9)	8 (5.0)	Secondary (6 to 7)	38 (23.9)	13 (8.2)
Housewife	8 (5.0)	16 (10.1)	High School & PUC	24 (15.1)	36 (22.6)
Ill or Disabled	1 (0.6)	2 (1.3)	Degree & More	2 (1.3)	3 (1.9)
Unemployed	1 (0.6)	0	Other (technical)	0	0
Wage & Self Employed	32 (20.1)	27 (17)	Average Age of the Member	36.86	35.40
Student	0	1 (0.6)	Average Household Size	5.03	4.32
Self Employed	44 (27.7)	48 (30.2)			
Cultivation & Self-Employment	41 (25.8)	23 (14.5)	**Number of Observations (N)**	**159**	**159**

Note: (i) BL = Belthangady taluk and TN = T.Narasipura taluk.
(ii) Figures in parenthesis denote percentage to the total number of the households in the respective taluks.
Source: Primary Survey

4. Empirical Results

4.1 Access to credit plus services

Table 2: Access to credit plus services by the households

Access to credit plus services by the member household	Belthangady		T.Narasipura	
	Before*	After*	Before*	After*
Savings	10 (6.3)	159 (100)	3 (1.9)	159 (100)
Credit	12 (7.6)	159 (100)	2 (1.2)	159 (100)
Insurance	13 (8.2)	159 (100)	12 (7.6)	69 (53.4)
Training & Awareness	0	159 (100)	0	91 (57.2)
Health care	35 (22)	152 (95.6)	17 (10.7)	68 (42.8)
Social Networks	29 (18.2)	136 (85.5)	15 (9.4)	83 (52.2)
Micro-enterprises	10 (6.3)	117 (73.6)	6 (3.8)	98 (61.6)
Number of observation	159	159	159	159

Note: (i) * = Before the microfinance intervention and After the microfinance intervention
(ii) Figures in parenthesis denote percentage to the total number of households in the study taluk
Source: Primary Survey

The table 2 presents accessibility of 'credit plus services' by the household's in pre and post microfinance intervention. In prior to joining the microfinance programme, a large number of the households are outside the gamut (access) of credit and non-credit services. There were 93.7 and 98.1 per cent households prior to microfinance programme were not had access formal savings services in Belthangady and T.Narasipura taluk, respectively. It is also obvious from the table that 92.4 and 98.8 per cent member households were not accessed formal credit facilities, 91.8 and 92.4 per cent were not insured against any kind of risk or uncertainty of life or health, in the total sample population none of the member households were availed any type of training or awareness, 78 and 89.3 per cent were not accessed the health care facilities[7], 81.8 and 90.6 per cent were not had any social networks[8], 93.7 and 96.2 per cent were not availed the benefits of micro-enterprise services in Belthangady and T.Narasipura taluk, respectively. However, it is evidential from the table that post-microfinance has liberated the members to access (include) credit plus services from various institutions. The table (2) makes clear that in Belthangady taluk marginal number of member households were outside the inclusion of credit plus services as compared to the members in T.Narasipura taluk. The reasons for such difference **lies** within the institutional structures were the households are members. In Belthangady taluk the MFI itself was the promoter and lender for microfinance groups as compared to the MFI in T.Narasipura taluk that only lends to the groups. In T.Narasipura taluk, the Non-Governmental Organizations or Self-help Group Promoting Institutions were promoted the groups and latter linked to the MFI. It is observed from T.Narasipura taluk that around 40 per cent members are still outside the access of non-credit services. It is clear that the inter-institutional participation (promotion of groups, savings, credit, insurance and non-credit services linked by various institutions) in the development of microfinance leads to non-access to some of the credit plus services to the microfinance members.

4.2 Impact of Micro Credit Plus Services on Household Welfare

Poverty has many dimensions and can be related to individuals, households, communities, regions and countries. It encompasses many areas, such as food insecurity, malnutrition, illiteracy, ill health, and the lack of entitlements. The improvement (combating against poverty) in these aspects of life will lead to welfare of the household. A positive impact of microfinance may be a better education or nutritional status (human capital);

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[7] Health care deals with information/training on childcare, nutrition, reproductive health, sanitation, HIV-AIDS, Contraceptive use, etc., from any formal or informal agencies.
[8] Networks with local institutions like, Banks, Cooperatives, Mahila Mandal, Gram- Panchayath, etc.

accumulation of productive and consumptive assets (Physical capital); female empowerment, development and network with the local organizations, mobility of the women, etc, (social capital). The economic impact of micro-credit plus services on the member households was assessed through the changes in economic variables like – household Income, Employment, Assets, Housing Conditions and Household Expenditures.

4.2.1 Development of Household Income and Employment

An integrated approach of microfinance could be to engage in hybrid programmes (credit-plus-approach), where the microfinance intermediary itself or a collaborating organism offers financial services in combination with other complementary services, such as training in enterprise management, education in health and nutrition. This approach would allow the ultra-poor segments of the microfinance clientele to expand their economic basis or income (McNelly and Dunford, 1998; Zeller and Sharma, 1998; Zaman, 1998).

Table 3: Distribution of Households by Annual Income

Per Annum Income of the Household member represented in Quartiles	**Before joining the SHGs**		**After joining the SHGs**	
	Belthangady	T. Narasipura	Belthangady	T. Narasipura
< Rs.12000 (less than 25)	69 (43.4)	63 (39.6)	0	0
Rs. 12001 to Rs.15000 (25 to 50)	10 (6.3)	19 (11.9)	0	0
Rs. 15001 to Rs.22000 (50 to 75)	51 (32.1)	57 (35.8)	24 (15.1)	25 (15.7)
>Rs. 22001 (more than 75)	29 (18.2)	20 (12.6)	135 (84.9)	134 (84.3)
Mean total income of the households (Rs.)	17742.14	16421.38	31732.70	28427.67
Number of observation	159	159	159	159

Note: figures in parenthesis denote percentage to the total number of households in the taluks.
Source: Primary Survey

It is obvious from the table 3 that in the absence of microfinance programme, there were 43.4 and 39.6 per cent of the member households in Belthangady and T.Narasipura taluk were had the income of less than Rs.12000 per annum. Only 18.2 (Belthangady) and 12.6 per cent (T.Narasipura) of the households were had the per annum income of more Rs.22000. However, it apparent from the table that after joining the microfinance programme, the member household income has increased, more than 84 per cent of the households in both the taluks were had the per annum income of more than Rs. 22000 income. Nevertheless, 35.2 and 25.8 per cent of the households in Belthangady and T.Narasipura were had the per annum income of more than Rs.30000. There were none of the households were had per annum income of less than (second quartile) Rs. 22000 in the post microfinance. In total, the average income of member households increased from Rs.17081.76 to Rs.30080.19 from pre-microfinance membership to the post-microfinance. The average income changes were greater in Belthangady taluk (Rs.17742.14 and Rs.31732.70 pre and post-microfinance) as compared to T.Narasipura taluk (Rs.16421.38 and Rs.28427.67 pre and post-microfinance). Hence, it is evidential that micro-credit plus services played a positive role in improving the household income and thereby enhancing the welfare of the households. Thus, there is a positive change in income (welfare) of the microfinance beneficiaries as the other (Hossain, 1988; Hulme and Mosely, 1996; Todd, 2000; Khandkar and Choudhury, 1996) studies concluded.

Table 4: Employment of the member prior and after joining the microfinance programme

Categories of Employment	Before joining the SHGs		After joining the SHGs	
	Belthangady	T. Narasipura	Belthangady	T. Narasipura
Agricultural and Non-agricultural wage labour	63 (39.6)	76 (47.8)	21 (13.2)	34 (21.4)
Cultivation	19 (11.9)	14 (8.8)	11 (6.9)	8 (5)
Housewife	46 (29)	54 (34)	8 (5)	16 (10.1)
Ill or Disabled	1 (0.6)	2 (1.3)	1 (0.6)	2 (1.3)
Unemployed	30 (18.9)	12 (7.5)	1 (0.6)	0
Self-employed	0	0	44 (27.7)	48 (30.2)
Students	0	1 (0.6)	0	1 (0.6)
Wage labour with self-employment	0	0	32 (20.1)	27 (17)
Cultivation with self-employment	0	0	41 (25.8)	23 (14.5)
Number of observation	159	159	159	159

Note: figures in parenthesis denote percentage to the total number of households in the taluks.
Source: Primary Survey (N=159 + 159=318)

It is obvious from the table 4 that 27.7 and 30.2 per cent are self-employed, 25.8 and 14.5 are depends on cultivation and self-employment, 20.1 and 17 per cent depends on wage labour and self-employment, 13.2 and 21.4 per cent depends on wage labour, etc., in Belthangady and T.Narasipura taluk respectively. Thus, microfinance has promoted employment opportunities for the large number of unemployed and housewives. Thus, microfinance services created new hopes in the lives of the poor and uplifted them from the poverty though improving the employment.

4.2.2 Development of Household Assets

The studies showed that the participation in microfinance programme lead to improvement in financial assets, enterprise assets, household physical assets, human assets, social assets, etc. The introduction of compulsory or voluntary savings in microfinance leads to higher rates of savings (Barnes, 2006). The cross county study on impact of microfinance on acquisition of durable assets found that extremely poor households acquired the household assets like, stove, refrigerator, electronics appliances, modes of transport, etc. (ibid). In India, Chen and Snodgrass (2001) find a positive impact on spending for home improvement among all borrowers. Borrowers with multiple sequential loans spend significantly more on housing improvements, appliances and transport equipments than members of the control group (Barnes, 2006).

The microfinance programme has created the habit of thrift and savings in the members. There were only 6.3 and 1.9 per cent of the microfinance members in Belthangady and T.Narasipura were saving prior to microfinance joining. However, in the post microfinance all the members are having the compulsory savings accounts. The mean savings is Rs. 1593 and Rs.1110 per annum in Belthangady and T.Narasipura, respectively. Another key financial asset is the insurance premium of the household members. In the sample 8.2 and 7.5 per cent of the members in Belthangady and T.Narasipura were had the insurance premium prior to microfinance programme. However, in the post microfinance programme, 100 and 43.4 per cent of the members in Belthangady and T.Narasipura were having the insurance coverage.

Table 5: Changes in Physical Assets

Types of Physical assets	**Possessing of the Assets**				**Source of Fund Used for the Assets**							
	Belthangady		T. Narasipura		Belthangady				T. Narasipura			
	Yes	No	Yes	No	a	b	c	d	a	b	c	d
Land	98 (61.6)	61 (38.4)	64 (40.3)	95 (59.7)	4 (4)	1 (1)	93 (95)	0	0	1 (1.5)	63 (98.5)	0
Livestock	94 (59.1)	65 (40.9)	79 (49.7)	80 (50.3)	68 (72.3)	4 (4.2)	5 (5.3)	17 (18.2)	55 (69.6)	7 (8.9)	17 (21.5)	0
Electronics	139 (87.4)	20 (12.6)	85 (53.5)	74 (46.5)	69 (49.6)	54 (38.8)	0	16 (11.6)	78 (91.8)	7 (8.2)	0	0
Vehicles	19 (12)	140 (80)	4 (2.5)	155 (97.5)	9 (47.3)	1 (5.3)	8 (42.1)	1 (5.3)	4 (100)	0	0	0
Tools and Equipments	10 (6.3)	149 (93.7)	5 (3.1)	154 (96.9)	7 (70)	2 (20)	1 (10)	0	5 (100)	0	0	0
Others (gold, petty shop)	84 (52.8)	75 (47.2)	40 (25.2)	119 (74.8)	81 (96.4)	3 (3.6)	0	0	38 (95)	2 (5)	0	0

Note: a= SHG loan, b= Savings and Earnings c= Ancestral property d= other sources. Figures in parenthesis denote percentage to the total number of households in the taluks and percentage to the possessing assets.

Source: Primary Survey (N=159 + 159=318)

The table 5 presents the changes in the physical assets of the member households in the post microfinance programme. In the sample, only 4 per cent members in Belthangady are purchased the land through microfinance. In the study, 59.1 and 49.7 per cent members in Belthangady and T.Narasipura possess the livestock's (Animals and poultry), in which 72.3 and 69.6 per cent are obtained through microfinance loan. Similarly, 87.4 and 53.5 per cent members in Belthangady and T.Narasipura are holding the electronics goods, out of which, 49.6 and 91.8 per cent are acquired through the microfinance loan. In the sample population, 12 and 2.5 per cent possess the vehicles, 6.3 and 3.1 per cent possessing tools and equipments and 52.8 and 25.2 per cent are purchased gold, petty shop, sewing machine, etc, in Belthangady and T.Narasipura, respectively. It is apparent from the table that microfinance has contributed in acquiring the financial and physical assets to the poor.

4.2.3 Development in Housing Condition

The housing condition shows the social and economic position of the member in the society. The type of the dwelling, the access to facilities in the household like, water, electricity, fuel, telephone, etc. will be the major determinants of housing condition. The financial and non-financial services of the microfinance programme have made considerable changes in the household of the microfinance members.

Housing condition of the members has improved in the post microfinance programme as compared to the before joining the programme. There were 29.6 and 64.2 per cent of the member households in prior to microfinance programme are had the Kutcha dwellings in Belthangady and T.Narasipura. However, the dwelling has improved (68.6 and 18.3 per cent households are having Pucca dwellings) in the post microfinance programme. It is observed from the filed that SKDRDP is giving the housing loan and other infrastructure to the members of microfinance programme for the development of dwelling systems of the households. The own source of water has increased from 60.4 per cent to 79.9 per cent households in Belthangady taluk and 23.9 per cent to 41.5 per cent households in T.Narasipura taluk. Hence, it has reduced the dependency on public and other sources of water. In the post microfinance programme, there were 63.5 and 69.2 per cent of the households are having own power connections. The post microfinance programme has improved the connection of phone to 24.5 and 15.1 per cent. There were very less number of households are had the own toilet facility in their households before joining the microfinance programme, i.e. 5.7 per cent in each taluks. However, it has improved to 95.6 and 37.1 per cent in Belthangady and T.Narasipura taluks respectively.

Table 6: Housing condition of the member prior and after joining the microfinance programme

Type of dwelling	**Before joining the SHGs**		**After joining the SHGs**	
	Belthangady	T. Narasipura	Belthangady	T. Narasipura
Pucca	24 (15.1)	5 (3.1)	109 (68.6)	29 (18.3)
Semi Pucca	83 (52.2)	50 (31.4)	43 (27)	87 (54.7)
Kutcha	47 (29.6)	102 (64.2)	7 (4.4)	42 (26.4)
Don't own	5 (3.1)	2 (1.3)	0	1 (0.6)
Main Source of Water				
Own	96 (60.4)	38 (23.9)	127 (79.9)	66 (41.5)
Public	24 (15.1)	111 (69.8)	24 (15.1)	91 (57.2)
Other	39 (24.5)	10 (6.3)	8 (5)	2 (1.3)
Electricity				
Own	44 (27.7)	68 (42.8)	101 (63.5)	110 (69.2)
Bhagyajyothi	5 (3.1)	8 (5)	37 (23.3)	25 (15.7)
No connection	110 (69.2)	83 (52.2)	21 (13.2)	24 (15.1)
Fuel used for Cooking				
Gas	0	4 (2.5)	0	5 (3.1)
Firewood or Cow Dung	159 (100)	154 (96.9)	159 (100)	153 (96.2)
Others	0	1 (0.6)	0	1 (0.6)
Telephone Connection				
Yes	5 (3.1)	4 (2.5)	39 (24.5)	24 (15.1)
No	154 (96.9)	155 (97.5)	120 (75.5)	135 (84.9)
Toilet facility				
Yes Own	9 (5.7)	9 (5.7)	152 (95.6)	59 (37.1)
Open	150 (94.3)	150 (94.3)	7 (4.4)	100 (62.9)

Note: figures in parenthesis denote percentage to the total number of households in the taluks.
Source: Primary Survey (N=159 + 159=318)

4.2.4. Changes in Household Expenditure

The household expenditure will be another important indicator of welfare. The household expenditure starts from expenses on basic necessities (unproductive) to the productive purpose. It is observed from the filed that in the post microfinance programme household has increased their expenses on education, housing appliances and repair, clothing, health. The members of the microfinance have taken the loans from the SHGs for education, housing repair purposes and that has increased the expenses of the household.

The table 7 shows that 28.9 and 20.1 per cent of households in Belthangady and T.Narasipura taluk has increased their household expenditure more than 62 per cent as compared to the prior to the microfinance intervention. The second quartile 44 to 62 percentage changes is having 28.3 and 20.8 per cent households in Belthangady and T.Narasipura taluk respectively. Hence, it is clear from the table that nearly 50 per cent households (both in Belthangady and T.Narasipura) are improved their expenditure more 44 per cent in the post microfinance interventions.

Table 7: Changes in the Household Expenditure and Number of Household

Percentage change in the HH expenditure (in quartiles)		**Belthangady**	**T.Narasipura**	**Total**
First	Less than 32	31 (19.5)	48 (30.2)	79 (24.8)
Second	32 to 44	37 (23.3)	46 (28.9)	83 (26.2)
Third	44 to 62	45 (28.3)	33 (20.8)	78 (24.5)
Fourth	More than 62	46 (28.9)	32 (20.1)	78 (24.5)

Note: figures in parenthesis denote percentage to the total number of households in the taluks.
Source: Primary Survey (N=159 + 159=318)

4.2.5 Social Impacts of Micro-credit plus services

Social impact of the credit plus services on the household economy is examined through the development of *human* and *social capital*. In this study development of *human capital* will be examined through the indicators like – education, health, confidence level, skills and empowerment of the members or member household. Similarly, the *social capital* studied through the development of networks and mobility of the members after the intervention of the microfinance programme.

The investment on education has increased in the post microfinance programme. The children going to the schools and expenses on educational purposes have increased. The microfinance provided the health care facilities to the household members. There are 95.6 and 42.8 per cent of the members in Belthangady and T.Narasipura taluk are availed various types of health care facilities through microfinance groups. In the sample, 99.4 and 71.7 per cent of the members in Belthangady and T.Narasipura taluk opinioned that microfinance groups has improved the access to health care facilities to the members. It is also observed from the filed that majority of the rural women are not had the banking literacy in prior to microfinance programme.

However, the microfinance groups are considered as the best platform for the development of confidence in the rural poor. It is improved the confidence and knowledge of banking, utilization of savings and credit, taking the self-employment, interaction with the local organisation like – panchayats, MFIs, NGOs, bank staff etc. The recent innovations in microfinance group formation not only satisfied the financial needs of the poor, but also encourage in improving the skills and knowledge. The weekly training by different institutions and individuals' opened up new hopes and courage to take different self-employment activities. The microfinance programmes mobilizes and organizes women's at the grassroots levels and provide access to supportive services to enhance economic, social and political life of the poor. Finally, by providing control over material resources, it should raise women's prestige and status within the household and in the community (Malhotra, 2004). There are 78.6 and 67.3 per cent of the members in Belthangady and T.Narasipura taluk are agreed that after joining the microfinance programme the control over household income has increased.

To examine whether or not there is any significant difference in the mean of assets, income, expenditure and employment in pre and post microfinance programme between Belthangady and T.Narasipura taluks, the *Independent T test* for mean has been conducted. The result is given in the table – 13. The calculated t- value is significant[9] in case of all household variables that indicate that the intervention of microfinance has positively impacted on the welfare of the households. The impact of microfinance credit plus services on the member household is seen to be more in Belthangady taluk than in T.Narasipura taluk. The mean of household expenditure, income and employment in Belthangady taluk is greater than T.Narasipura taluk. However, the mean of asset values is greater in T.Narasipura as compared to Belthangady taluk. Because, the households in T.Narasipura taluk are used the credit plus services for the accumulation of assets than on the employment generation. Thus, the microfinance programme has been proved grater welfare impact in Belthangady than T.Narasipura taluk.

The *Independent T test* will be used only for the significant of change in pre and post microfinance programme. However, it will be not enough to draw any conclusive inference on the significant of the co-efficient in proving the welfare impact of credit plus services. Hence, to test the significant of two subset of coefficient the *chow test* has been conducted. It

[9] Null hypothesis of equal mean is rejected.

will explain whether or not the microfinance credit plus services made change in the welfare of the household economy of the member in the post microfinance programme as compared to the pre programme intervention.

Table 8: Test for the difference in household variables in pre and post microfinance programme

Variables	**Belthangady** (N=159)		**T.Narasipura** (N=159)		**Overall** (N=318)	
	µ	t-statistics	µ	t-statistics	µ	t-statistics
HH. Asset	13213.52	1.344**	18066.67	2.687**	15716.27	2.634*
HH. Expenditure	8231.89	10.759*	6652.08	8.492*	7322.23	13.258*
HH. Income	15163.52	17.589*	14421.38	21.291*	14765.16	26.859*
HH. Employment	155.18	16.341*	86.21	8.428*	120.65	16.980*

Note: 1. N = number of households 2. µ =Mean changes in households variables from pre to post microfinance intervention. 3. *, **: Significant at 1and 5 per cent level.
Source: Primary data

Now we have three possible regressions for both the taluks, Belthangady and T.Narasipura, respectively. Table 14 present the description of the variables used in the *chow test* regression. Regression 3 and 6 assumes that there is no difference between the two time period (pre and post microfinance intervention) and therefore estimates the relationship across household expenditure, assets, income and employment for the entire time period consisting of 318 observations. In other words, we assume that the intercept as well as the slope coefficient remains the same over entire time period, that is, there is no impact of micro credit plus services in the post microfinance programme.

Table 9: Description of the variables

Variables	Description	Variables	Description
Exp_b^0	Expenditure of the household in the pre microfinance programme in Belthangady taluk.	Y_b	Income of the Households in Belthangady taluk
Exp_b^1	Expenditure of the household in the post microfinance programme in Belthangady taluk.	N_b	Assets of the Households in Belthangady taluk
Exp_b	Expenditure of the household in both the periods in Belthangady taluk.	N_b	Employment of the Households in Belthangady taluk
Exp_{tn}^0	Expenditure of the household in the pre microfinance programme in T.Narasipura taluk.	Y_{tn}	Income of the Household in T.Narasipura taluk
Exp_{tn}^1	Expenditure of the household in the post microfinance programme in T.Narasipura taluk.	N_{tn}	Assets of the Household in T.Narasipura taluk
Exp_{tn}	Expenditure of the household in both the periods in T.Narasipura taluk.	N_{tn}	Employment of the Household in T.Narasipura taluk

Regression for pre-microfinance programme period in Belthangady taluk:

$$Exp_b^0 = a_1 + b_1 Y_b + b_2 A_b + b_3 N_b + u_1 \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots \quad (1)$$

Regression for post microfinance programme period in Belthangady taluk:

$$Exp_b^1 = a_2 + b_1 Y_b + b_2 A_b + b_3 N_b + u_2 \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots \quad (2)$$

Pooled Regression for both periods period in Belthangady taluk:

$$Exp_b = g + b_1 Y_b + b_2 A_b + b_3 N_b + u \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

Regression for pre-microfinance programme period in T.Narasipura taluk:

$$Exp_{tn}^0 = a_1 + b_1 Y_{tn} + b_2 A_{tn} + b_3 N_{tn} + u_1 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (4)$$

Regression for post microfinance programme period in T.Narasipura taluk:

$$Exp_{tn}^1 = a_2 + b_1 Y_{tn} + b_2 A_{tn} + b_3 N_{tn} + u_2 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (5)$$

Pooled Regression for both periods period in T.Narasipura taluk:

$$Exp_{tn} = g + b_1 Y_{tn} + b_2 A_{tn} + b_3 N_{tn} + u \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (6)$$

The *chow test* is used to test the impact of credit plus services between pre and post microfinance programme. The calculated F- value (chow test) is greater than the table value and significance at 1 per cent level. There fore, it is clear that the credit plus services of the microfinance programme has impacted the household economy of the member.

The study also made an attempt to investigate whether or not there is welfare change in the household economy of the member; the *chow test* through a combined regression (by combining the total sample of Belthangady and T.Narasipura taluk) has been conducted. The result of (F value) *chow test* will explain whether or not there is impact of microfinance credit plus services on the household economy of the member.

Table 10: Impact of microfinance on the household economy
Dependent variable = Household expenditure

Variable	**Belthangady**			**T.Narasipura**		
	Pooled reg.	Pre reg.	Post reg.	Pooled reg.	Pre reg.	Post reg.
C	10356.4 (14.50)	13773.53 (11.28)	9151.06 (4.76)	10425.23 (11.29)	11210.58 (7.52)	8938.40 (3.50)
Income (Y)	0.481 (12.28)	0.28 (3.38)	0.4955 (7.10)	0.44 (10.47)	0.40209 (4.17)	0.466 (5.29)
Assets (A)	0.011 (2.59)	0.179 (3.61)	0.0054 (0.70)	0.011 (1.79)	0.0128 (1.57)	0.0076 (0.77)
Employment (N)	0.545 (0.16)	-14.72 (-3.13)	6.2665 (1.23)	0.314 (0.08)	-1.9089 (-0.45)	4.274 (0.85)
F – Statistics	11.23*	17.60*	42.19*	51.85*	7.05*	14.57*
R^2	0.52	0.25	0.45	0.34	0.12	0.22
Adjusted R^2	0.51	0.24	0.44	0.33	0.10	0.21
RSS	9741566085	4056844092	5101726151	12661027277	5137468841	7669502420
N	318	159	159	318	159	159
F-Value (chow test)		4.80*			110.56*	

Note: * Significant at 1 per cent level; Figures in the parenthesis are t-statistics; reg. = Regression.
RSS = Residual Sum of Squares.

Table 11: Description of the variables

Variables	Description
Exp^{0}_{btn}	Expenditure of the household in the pre microfinance programme in both the taluks (Belthangady and T.Narasipura)
Exp^{1}_{btn}	Expenditure of the household in the post microfinance programme in both the taluks (Belthangady and T.Narasipura).
Exp_{btn}	Expenditure of the household in pre and post periods in both the taluks (Belthangady and T.Narasipura).
Y_{btn}	Income of the Households in both the taluks (Belthangady and T.Narasipura).
A_{btn}	Assets of the Households in both the taluks (Belthangady and T.Narasipura).
N_{btn}	Employment of the Households in both the taluks (Belthangady and T.Narasipura).

Regression for pre-microfinance programme period for both the taluks

$$Exp^{0}_{btn} = l_1 + l_2 Y_{btn} + l_3 A_{btn} + l_4 N_{btn} + u_1 \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (7)$$

Regression for post microfinance programme period for both the taluks

$$Exp^{1}_{btn} = a_1 + a_2 Y_{btn} + a_3 A_{btn} + a_4 N_{btn} + u_2 \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (8)$$

Pooled Regression for both periods for both the taluks

$$Exp_{btn} = g_1 + g_2 Y_{btn} + g_3 A_{btn} + g_4 N_{btn} + u \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (9)$$

Table 18: Impact of microfinance on the household economy
Dependent variable = Household expenditure

Variable	**Combined for both the taluks**		
	Pooled reg.	Pre reg.	Post reg.
C	10425.85 (18.68)	12430.07 (13.10)	8907.44 (5.69)
Income (Y)	0.47 (15.61)	0.341 (5.39)	0.489 (8.94)
Assets (A)	0.01 (3.18)	0.016 (3.76)	0.006 (1.08)
Employment (N)	-0.43 (-0.20)	-6.685 (-2.19)	4.959 (1.41)
F – statistics	156.64*	52.89*	21.71*
R^2	0.43	0.17	0.37
Adjusted R^2	0.42	0.16	0.33
RSS	22523895333	9353716529	12735367261
N	636	318	318
F Value (Chow Test)		3.09**	

Note: *; ** Significant at 1 and 5 per cent level;
Figures in the parenthesis are t-statistics; reg. = Regression. RSS = Residual Sum of Squares.

The calculated F- value (*chow test*) is greater than the table value and significance at 5 per cent level. Hence, there is a positive change in the welfare of the member households in the post microfinance programme. The Income and Assets of the households are positively influencing the household expenditure. Therefore, improving the household expenditure through the enhancement of income and employment is showing that the credit plus services of microfinance programme has made considerable improvement in the household welfare in the post microfinance.

6. Conclusion

Microfinance is not a panacea to all problems of poverty. However, it is considered as a vital tool to break the vicious circle of poverty that characterized by low income, low savings and low investment. In order to generate higher incomes, savings and more investment, there is need to inject capital in the form of microfinance.

The empirical evidence in this study showed that credit plus services of microfinance has positively correlating with the improving in household expenditure, income, assets and employment. Microfinance has contributed in improving the access to credit for consumption and productive purposes. Most (formal) institutions regarded low-income households as "too poor to save". But microfinance programme nullify the argument and showed that even vulnerable poor can save if he/she having the accessibility and reward from it (Hulme *et al.,* 1996). Generally, the life of poor is often hindered by many contingencies or risks. Insuring against these risks makes people to bear the large uncertain losses with certainty of small and regular payments. Thus, the credit plus services of microfinance introduced the micro-insurance services to reduce vulnerability (result of risk and uncertainty) of the poor. The micro credit plus services of microfinance has tried to bring out the poor (women in particular) from below poverty line and fight against the poverty though deploying the financial and non-financial services. Various skill enhancement trainings and awareness programmes, networking with various institutions, etc, will make the welfare path soften towards poor. The credit plus services of microfinance not only uplifted the poor from income poverty but it also from the knowledge poverty. Hence, easily accessible and affordable "credit plus services" should be provided to the vulnerable poor who are excluded socially and economically for a long period of time.

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