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THE MICROFINANCE PROMISE IN FINANCIAL INCLUSION AND WELFARE OF THE POOR: EVIDENCE FROM KARNATAKA, INDIA

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THE MICROFINANCE PROMISE IN FINANCIAL INCLUSION AND WELFARE OF THE POOR: EVIDENCE FROM KARNATAKA, INDIA[i]

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Abstract

Microcredit[1] is a recent addition to India's poverty-alleviation strategy. Of late, there has been a paradigm shift from microcredit to microfinance. This study examines the promise of microfinance in the inclusion of poor, who have been left outside the gamut of formal financial markets for a long period of time. The study also examines the impact of microfinance-plus services on the household economy of the members. This paper uses primary data on household participants of microfinance programme in the state of Karnataka. We find that a majority of the sample households in the pre-microfinance programme were vulnerable to both access the financial and non-financial services. In the post-microfinance intervention, a large number of the member households are able to access the microfinance-plus services and it has enhanced the income, employment, assets, household expenditure, housing condition and empowerment of the poor. Policy recommendation includes delivery of microfinance-plus services to the marginalized and vulnerable poor at a minimum cost will have wider impact on the socio-economic well-being of the poor.

Keywords *– Microfinance, Financial Inclusion, Microfinance Groups, Microfinance-Plus Services, Karnataka, India*

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]. Since independence, policy makers and practitioners have been trying to improve the lives of

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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 and creation of regional rural banks. The government sponsored several programmes and projects to bring the excluded poor into the mainstream "development". These programmes could not completely target the vulnerable poor. And many now believe that 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). The same survey revealed further that 22 per cent of the cultivator households received credit from informal sources (financial inclusion in a narrow sense). Only 27.6 per cent of the farmer households had availed credit from the formal institutions like banks, cooperatives and government (Jeromi, 2006). Again, a Rural Finance Access Survey 2003, conducted by the World Bank and the NCAER, revealed that 79 per cent of the rural households had no access to credit from formal sources (Basu, 2006). Hence, the tasks of microfinance are the promotion of greater *financial inclusion*[3] and, in the process, improve the social and economic welfare of the poor.

In this backdrop, the paper examines the promise of microfinance (microfinance-plus services) in the inclusion (access) of excluded and to analyse the impact of the "microfinance-plus services"[4] on the social and economic welfare of the poor households.

The organisation of the paper is as follows. Section two presents the theoretical insights between microfinance and poverty reduction. Section three describes sources of data, which consists of survey design and survey area. Section four deals with empirical findings and discussion followed by the conclusion and policy implication in the last section.

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 faced 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 boosts income levels, increases employment at the household level and thereby alleviates poverty. Credit facilitates the poor to triumph over their liquidity constraints and undertake some income generating activities. Furthermore, credit helps poor 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. 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, increases the poor households' risk-bearing ability, improves their risk-coping 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 Zeller, 2001).

Microfinance programmes have a potentially significant contribution to economic, social, political and psychological empowerment of the poor in general, women in particular. Through timely and adequate access to 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 to.

There are a couple of studies that argue that microfinance is very helpful in improving the economic and social welfare of the member households (Hossain, 1988; Remeny and Benjamin, 2000; Otero and Rhyne, 1994; Khandker, 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 a large number of poor (not the vulnerable poor or extreme poverty). Zeller and Sharma (1998) argue that microfinance could help to establish or expand family enterprises, potentially making difference between grinding poverty and economically secure life. The impact studies from Bangladesh show 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 targeting the 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 1994; 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 meets the needs of the poorest people. Microfinance is unique among development interventions; it can deliver social benefit on an ongoing, permanent basis and on a large scale. In a comprehensive study, 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 targets both economic and social poverty through the financial and non-financial services. This is referred to in microfinance programme as "microfinance-plus services" (Edgcomb and Barton, 1998; Zohir *et a*l., 2001) as they provide services (such as savings, insurance, health services, adult literacy, etc.) or training that go beyond financial services. The growing realization in the low-income households is that they can profit more through access to a broader set of financial services than just credit (Aghion and Morduch, 2005; Shetty, 2008). However, impacts of these services have been little documented up to now (Zeller and Meyer, 2002; Godquin, 2004; Aghion and Morduch, 2005). In the light of this, this paper attempts to look at the promise of microfinance in delivering various microfinance-plus services to the poor and its social and economic impact in improving the welfare of the poor.

Survey Design and Data

Generally, the microfinance programmes are to correct market failures 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 have come from a survey of 318 member households of 106 woman SHGs in ten villages in the state of Karnataka, India in 2006. Five of the villages are supported by Sri Kshethra Dharmasthala Rural Development Project (R.) (SKDRDP) Dharmasthala, Dakshina Kannada and the other five are supported by Sanghamithra Rural Financial Services (SRFS) Mysore. The rationale behind the selection of Sanghamithra is that it is the only not-for profit company MFI registered under the Indian Companies Act, 1956 and working in the state for more than ten years with wide experience in microfinance services in the state of Karnataka. Sanghamithra MFI also extends its micro-financial services in the neighbouring states of Tamil Nadu and Andhra Pradesh. However, the motivation behind the selection of SKDRDP an NGO-MFI was that it is the largest (by reaching the number of poor people and loan outstanding) NGO-MFI working in the field of microfinance in the state of Karnataka. SKDRDP an MFI is also reaching the poor with many non-financial services to the poor, through the development of micro-enterprise units, health care and sanitation facilities, literacy programme, etc.

To study the access and impact of microfinance-plus services on the welfare of member households of microfinance, a multi stage sampling technique was adopted in the selection of the units. Accordingly, at the first stage, Mysore district from the operational area of Sanghamithra MFI and Dakshina Kannada district from SKDRDP MFI were selected purposively. Selection of the districts was done keeping in view that it should satisfy the two criteria viz., (i) cover (formed/linked to the MFI) the maximum number of SHGs and rural poor households and (ii) the district should be the first operational area so that we have matured groups and members for the study. The second stage of sampling is the selection of taluks. There are two taluks, viz., T. Narasipura taluk and Belthangady from Sanghamitra and SKDRDP operational areas respectively which were selected using the same criteria as was used for the selection of districts. The third stage of sampling covered the selection of villages. From each taluk, the village list was prepared with a number of SHGs formed/linked to the MFI. Consequently, top five villages having highest number of SHGs and members were selected from each taluk. The five villages selected from Belthangady taluk were Bandaru, Kokkada, Neriya, Machina and Padangady and those from T.Narasipura taluk were Hykanoor, Helavarahundi, Talakadu, T.Bettahalli and Vatal villages. The fourth stage of sampling involved the selection of SHGs. In each selected village, the currently MFI linked SHG list was prepared. Accordingly, from each village 25 per cent of SHGs were selected, randomly. In all, 106 SHGs (53 SHGs from each taluk) were randomly selected from ten villages. The fifth stage of sampling involved the selection of member households. From each randomly selected SHG's, 25 per cent of the member households were selected randomly. In total, 318 households, 159 households from each Belthangady and T. Narasipura taluk were selected for the study.

The study considers pre-microfinance scenario of the household as a *comparison* or *control group*. While the post-microfinance scenario of the member households are considered as the *member groups* [5]. Hence, to study the financial inclusion and impact of microfinance on the welfare of the member households, pre and post microfinance intervention, information of the member households are collected through a survey as well as through focus group discussions. Each village was surveyed and data were collected on household demographics, assets, income, expenditure, 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 which were all accessed by the members. Effects of study variables (in pre and post microfinance intervention) were examined by using tabular and *chow test* [6] analysis.

Empirical Findings and Discussion

Profile of the Sample Households

Data contained in Table 1 show that a considerable proportion of the sample households belongs to the Other Backward Castes (OBCs), Schedule Tribes (STs) and Schedule Castes (SCs). However, in the study area the people belonging to the minority category has scarcely been included in microfinance programme. In T. Narasipura taluk a large number of poor belonging to forward class also formed the microfinance groups and availed the benefits. The microfinance programme in the study area has diversified the occupation of the member households. It is evident from the Table that the opportunity for the self-employment has improved in the study area. In the total sample there were 20.1 and 18.6 per cent of members engaged in self-employment with cultivation and wage labour, respectively. Apparently, large magnitude of the people are either self-employed or engaged in petty business, dairy, poultry and sheep rearing, etc. The magnitude of unemployment problem is less than 10 per cent in the study area.

Table 1: Socio-Economic Profile of the Microfinance Member Households

Socio-Economic Indicators of the Households	Number of Households		
	Belthangady	T. Narasipura	Tota
Caste			
Scheduled caste	22 (13.8)	48 (30.2)	70 (22.0)
Scheduled tribe	36 (22.7)	38 (23.9)	74 (23.2)
Backward caste	77 (48.4)	24 (15.1)	101 (31.8)
Minorities[a]	18 (11.3)	0	18 (5.7)
Forward caste	6 (3.8)	49 (30.8)	55 (17.3)
Occupation			
Agricultural and Non Agricultural Wage Labour	21 (13.2)	34 (21.4)	55 (17.3)
Cultivation	11 (6.9)	8 (5.0)	19 (6.0)
Self-Employment	44 (27.7)	48 (30.2)	92 (28.9)
Wage & Self-Employment	\32 (20.1)	27 (17.0)	59 (18.6)
Cultivation & Self-Employment	41 (25.8)	23 (14.5)	64 (20.1)
Unemployed[b]	10 (6.3)	19 (11.9)	29 (9.1)
Marital Status			
Married	125 (78.6)	133 (83.6)	258 (81.1)
Unmarried	24 (15.1)	7 (4.4)	31 (9.8)
Divorced/Separated	3 (1.9)	3 (1.9)	6 (1.9)
Widowed	7 (4.4)	16 (10.1)	23 (7.2)
Level of Education			
Illiterate	47 (29.6)	83 (52.2)	130 (40.9)
Primary (1 to 5)	48 (30.2)	24 (15.1)	72 (22.6)
Secondary (6 to 7)	38 (23.9)	13 (8.2)	51 (16.0)
High School & PUC	24 (15.1)	36 (22.6)	60 (18.9)
Degree & More	2 (1.2)	3 (1.9)	5 (1.6)
Other (Technical)	0	0	0
Average Age of the Member	36.9	35.4	36.1
Average Household Size	5.0	4.3	4.7
Number of Observations (N)	159	159	318

Note: [a]Muslims and Christians; [b] this category also includes housewife, students, ill and disabled.

Figures in parenthesis denote percentage to the total number of the households.

Source: Primary Survey

In the total sample, 81.1 per cent members were married. However, at the disaggregated level 15.1 per cent members were unmarried and 10.1 per cent members were widowed in Belthangady and T. Narasipura, respectively. It is apparent from the Table 1 that a substantial percentage of the respondents suffered from lack of formal education. In the total sample 40.9 per cent were illiterates and in T. Narasipura taluk 52.2 per cent respondents were illiterates. There is a very small percentage of the members having the education up to degree level and beyond. Hence, women's low literacy rate and lack of education were among the several causes for their low social status and their dependence on men prevailing in rural areas. The average age of the members and size of the households in Belthangady taluk is slightly higher than that of the T. Narasipura taluk. Overall, the average family size is 4.7; it depicts that a majority of member households belongs to nuclear families.

Access to Microfinance-Plus Services

The Table 2 presents accessibility of 'microfinance-plus services' by the households in pre and post microfinance intervention. Prior to microfinance membership, a large number of the households were outside the gamut (access) of formal financial services. There were 93.7 and 98.1 per cent households prior to microfinance programme who were not able to 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 in Belthangady and T. Narasipura, respectively, did not access 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 availed any type of training or awareness, 78 and 89.3 per cent did not access the health care facilities[1], 81.8 and 90.6 per cent were not able to access any social networks[2], 93.7 and 96.2 per cent did not avail 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) microfinance-plus services from various institutions.

Table 2: Access to Microfinance-Plus Services by the Member Households

Types of Microfinance-Plus Services Accessed	Number of Households					
	Belthangady		T.Narasipura		Total	
	Before[a]	After[b]	Before[a]	After[b]	Before[a]	After[b]
Savings	10 (6.3)	159 (100)	3 (1.9)	159 (100)	13 (4.1)	318 (100.0)
Credit	12 (7.6)	159 (100)	2 (1.2)	159 (100)	14 (4.4)	318 (100.0)
Insurance	13 (8.2)	159 (100)	12 (7.6)	69 (53.4)	25 (7.9)	228 (71.7)
Training & Awareness	0	159 (100)	0	91 (57.2)	0	250 (78.6)
Health care	35 (22)	152 (95.6)	17 (10.7)	68 (42.8)	52 (16.4)	220 (69.2)
Social Networks	29 (18.2)	136 (85.5)	15 (9.4)	83 (52.2)	44 (13.8)	219 (68.9)
Micro-enterprises	10 (6.3)	117 (73.6)	6 (3.8)	98 (61.6)	16 (5.0)	215 (67.6)
Number of observation	159	159	159	159	318	318

Note: [a] Before the microfinance intervention; [b] After the microfinance intervention
Figures in parenthesis denote percentage to the total number of households
Source: Primary Survey

It is clear from the Table 2 that in Belthangady taluk a marginal number of member households were outside the inclusion of microfinance-plus services as compared to T.Narasipura taluk. The reasons for such a difference lie within the institutional structures where 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 which lends to the groups only. In T.Narasipura taluk, the Non-Governmental Organizations (NGOs) or Self-help Group Promoting Institutions (SHPIs) promoted the groups and later linked them to the MFI. It is observed that in T.Narasipura taluk around 40 per cent of members are not included in the access to non-financial services. The multi-institutional arrangements for the promotion of microfinance programme may lead to non-access (due to difference in institutional objectives and their sustainability) to some of the microfinance-plus services.

Impact of Microfinance-Plus Services

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 and empowerment. 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); accumulation of productive and consumptive assets (Physical capital); female empowerment, development and network with the local organizations, spatial mobility of the women, etc. (social capital). The economic impact of microfinance-plus services on the member households was assessed through the changes in economic variables like – household income, employment, assets, housing conditions and household expenditures, etc.

Change in Household Employment and Income: An integrated approach of microfinance could be to engage in hybrid programmes – microfinance-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 vulnerable poor microfinance clientele to expand their economic basis or income (McNelly and Dunford, 1998; Zeller and Sharma, 1998; Zaman, 1998; Shetty, 2008).

It is apparent from the Table 3 that prior to the intervention of microfinance programme in the study villages, 45.9 per cent woman members were unemployed. A majority of them were housewives and they had limited access to any type of employment opportunity and development personnel. The study also reveals that 43.7 per cent of the members were engaged in wage labour prior to microfinance membership. At the time of focus group discussion many of woman members revealed that the seasonality of employment in rural areas drive them into poverty and deprivation. However, the recent innovation in microfinance through SHGs has created some employment opportunities in the study villages. The problem of unemployment has declined due to access to various forms of microfinance-plus service. The women members are able to diversify their occupations through self-employment and earn more income. The spatial mobility that was encouraged from microfinance movement is one of the important factors that has contributed to engage womenfolk in various occupations (Shetty, 2008). Thus, microfinance services created new hopes in the lives of the poor and uplifted them from the poverty by improving the employment opportunities.

Table 3: Employment of the Member Before and After Joining the Microfinance Programme

Categories of Employment	Number of Members					
	Belthangady		T. Narasipura		Total	
	Before[a]	After[b]	Before[a]	After[b]	Before[a]	After[b]
Agricultural and wage Non-agricultural labour	63 (39.6)	21 (13.2)	76 (47.8)	34 (21.4)	139 (43.7)	55 (17.3)
Cultivation	19 (11.9)	11 (6.9)	14 (8.8)	8 (5)	33 (10.4)	19 (6.0)
Self-employment	0	44 (27.7)	0	48 (30.2)	0	92 (28.9)
Wage labour with self-employment Cultivation with	0	32 (20.1)	0	27 (17)	0	59 (18.6)
self-employment	0	41 (25.8)	0	23 (14.5)	0	64 (20.1)
Unemployed	77 (48.5)	10 (6.2)	69 (43.4)	19 (12)	146 (45.9)	29 (9.1)
Number of observation	159	159	159	159	318	318

Note: [a] Before the microfinance intervention; [b] After the microfinance intervention. Figures in parenthesis denote percentage to the total number of members.
Source: Primary Survey.

Table 4 illustrates the change in net annual income of the member households prior and post microfinance interventions. In the absence of microfinance-plus services, out of the total sample 41.5 per cent of the member households had a net annual income of less than Rs. 12,000. Correspondingly, a small number of member households (15.4 per cent) had the per annum net income of more than Rs.

12,000 in the study area. The Table clearly reveals that in the post microfinance interventions, there was a paradigm shift in the net annual income of the member households. In total sample, 84.6 per cent of the households earn a net annual income of more than Rs. 12,000. However, it can be witnessed from the Table that no single households in the post microfinance interventions had the income of less than Rs. 15,000 in both the taluks. In general, the average net annual income of households has increased from Rs.17,081.76 to Rs.30,080.19 from pre to post microfinance membership. The average income changes were greater in Belthangady taluk (Rs.17,742.14 and Rs.31,732.70 pre and post-microfinance intervention) as compared to T.Narasipura taluk (Rs.16421.38 and Rs.28427.67 pre and post-microfinance intervention). Hence, it is evident that access to microfinance-plus services played a positive role in improving the household income and thereby enhancing the welfare of the member household's economy (Hossain, 1988; Hulme and Mosely, 1996; Todd, 2000; Khandker and Choudhury, 1996).

Table 4: Net Annual Income of the Member Households Before and After Joining the Microfinance Programme

Net Annual Household Income Rs.	Number of Households					
	Belthangady		T. Narasipura		Total	
	Before[a]	After[b]	Before[a]	After[b]	Before[a]	After[b]
First Quartile (Less than Rs.12000)	69 (43.4)	0	63 (39.6)	0	132 (41.5)	0
Second Quartile (Rs. 12001 to Rs.15000)	10 (6.3)	0	19 (11.9)	0	29 (9.1)	0
Third Quartile (Rs. 15001 to Rs.22000)	51 (32.1)	24 (15.1)	57 (35.8)	25 (15.7)	108 (34.0)	49 (15.4)
Fourth Quartile (More than Rs. 22001)	29 (18.2)	135 (84.9)	20 (12.6)	134 (84.3)	49 (15.4)	269 (84.6)
Mean net annual income of the households (Rs.)	17742.14	31732.70	16421.38	28427.67	17081.76	30080.19
Number of observation	159	159	159	159	318	318

Note: [a] = Before the microfinance intervention and [b] = After the microfinance intervention

Figures in parenthesis denote percentage to the total number of households

Source: Primary Survey

Change in Household Assets: The studies showed that the participation in microfinance programme led 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, 2001). The cross county study on impact of microfinance on acquisition of durable assets found that extremely poor households acquired household accessories 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 the non-members of microfinance programme (Barnes, 2001).

The microfinance programme has created and nurtured 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 who were saving prior to joining the microfinance. However, in the post microfinance all the members are having compulsory savings accounts. The mean savings were Rs. 1593 and Rs.1110 per annum in Belthangady and T.Narasipura, respectively. Another key financial asset was 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 had the insurance cover (policy) before their memberships in 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 5a: Number of Households Possessing Various Types of Physical Assets

Types of Physical assets	Number of Households					
	Belthangady (N=159)		T. Narasipura (N=159)		Total (N=318)	
	Yes	No	Yes	No	Yes	No
Land	98 (61.6)	61 (38.4)	64 (40.3)	95 (59.7)	162 (50.9)	156 (49.1)
Livestock	94 (59.1)	65 (40.9)	79 (49.7)	80 (50.3)	173 (54.4)	145 (45.6)
Electronics	139 (87.4)	20 (12.6)	85 (53.5)	74 (46.5)	224 (70.4)	94 (29.6)
Vehicles	19 (12.0)	140 (80.0)	4(2.5)	155 (97.5)	23 (7.2)	295 (92.8)
Tools and Equipments	10 (6.3)	149 (93.7)	5 (3.1)	154 (96.9)	15 (4.7)	303 (95.3)
Others (gold, petty shop)	84 (52.8)	75 (47.2)	40 (25.2)	119 (74.8)	124 (39)	194 (61)

Note: Figures in parenthesis denote percentage to the total number of households

Source: *Primary Survey*

Table 5b: Sources of Funds Used by the Member Households for the Purchases of Various Physical Assets

Types of Physical assets	Number of Households											
	Belthangady				T. Narasipura				Total			
	a	b	c	d	a	b	c	d	a	b	c	d
Land	4 (4)	1 (1)	93 (95)	0	0	1 (1.5)	63 (98.5)	0	4 (2.5)	2 (1.2)	156 (96.3)	0
Livestock	68 (72.3)	4 (4.2)	5 (5.3)	17 (18.2)	55 (69.6)	7 (8.9)	17 (21.5)	0	123 (71.1)	11 (6.4)	22 (12.7)	17 (9.8)
Electronics	69 (49.6)	54 (38.8)	0	16 (11.6)	78 (91.8)	7 (8.2)	0	0	147 (65.6)	61 (27.2)	0	16 (7.2)
Vehicles	9 (47.3)	1 (5.3)	8 (42.1)	1 (5.3)	4 (100)	0	0	0	13 (56.5)	1 (4.4)	8 (34.7)	1 (4.4)
Tools and Equipments	7 (70)	2 (20)	1 (10)	0	5 (100)	0	0	0	12 (80)	2 (13.3)	1 (6.7)	0
Others (gold, petty shop)	81 (96.4)	3 (3.6)	0	0	38 (95)	2 (5)	0	0	119 (96)	5 (4)	0	0

Note: a= SHG loan, b= Savings and Earnings c= Ancestral property d= other sources.
Figures in the table are number of households that are possessing the physical assets with various sources of funds.
Figures in parenthesis denote percentage to the total number of households that are possessing the physical assets.

Source: Primary Survey

The Tables 5 (a) and 5 (b) suggest the changes in the physical assets and sources of funds utilized for the purchase of the same by the member households. In the total sample, there were 50.9 per cent of the member households who owned land. However, only 2.5 per cent used microfinance loan for the purchase of land. There are 54.4 per cent of the households who possessed livestocks, 71.1 per cent of them used microfinance loans for purchasing animals. The table clearly point out that purchase of various electronics goods, vehicles, tools and equipments and other physical accessories like gold, petty shop, sewing machine, etc., was largely done by using the SHG loans. It was observed in the time of focus group discussion that a majority of the SHG members use microfinance loans for the purchase of gold jewellery, either for themselves or for their children. They feel holding gold or some physical assets instills a symbol of prestige and social status in the society and it provides security (protects) at times of risk. In some villages it was observed that microfinance loans were effectively used for the development of dairy or sheep rearing by purchasing livestocks. As a result, it has enhanced the employment, savings and increased consumption of milk products in the member households.

Change 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.

Table 6: Housing Condition of the Member Households Prior and After Joining the Microfinance Programme

Indicators of Housing Quality	Number of Households					
	Belthangady (N=159)		**T. Narasipura** (n=159)		**Total** (N=318)	
	Before[a]	After[b]	Before[a]	After[b]	Before[a]	After[b]
Type of Dwelling						
Pucca	24 (15.1)	109 (68.6)	5 (3.1)	29 (18.3)	29 (9.1)	138 (43.4)
Semi Pucca	83 (52.2)	43 (27)	50 (31.4)	87 (54.7)	133 (41.8)	130 (40.9)
Kutcha	47 (29.6)	7 (4.4)	102 (64.2)	42 (26.4)	149 (46.9)	49 (15.4)
Don't own	5 (3.1)	0	2 (1.3)	1 (0.6)	7 (2.2)	1 (0.3)
Main Source of Water						
Own	96 (60.4)	127 (79.9)	38 (23.9)	66 (41.5)	134 (42.1)	193 (60.7)
Public	24 (15.1)	24 (15.1)	111 (69.8)	91 (57.2)	135 (42.5)	115 (36.2)
Other	39 (24.5)	8 (5)	10 (6.3)	2 (1.3)	49 (15.4)	10 (3.1)
Access to Electricity						
Own	44 (27.7)	101 (63.5)	68 (42.8)	110 (69.2)	112 (35.2)	211 (66.4)
Bhagyajothi	5 (3.1)	37 (23.3)	8 (5)	25 (15.7)	13 (4.1)	62 (19.5)
No connection	110 (69.2)	21 (13.2)	83 (52.2)	24 (15.1)	193 (60.7)	45 (14.2)
Fuel used for Cooking						
Gas	0	0	4 (2.5)	5 (3.1)	4 (1.3)	5 (1.6)
Firewood or Cow Dung	159 (100)	159 (100)	154 (96.9)	153 (96.2)	313 (98.4)	312 (98.1)
Others	0	0	1 (0.6)	1 (0.6)	1 (0.3)	1 (0.3)
Access to Telephone Connection						
Yes	5 (3.1)	39 (24.5)	4 (2.5)	24 (15.1)	9 (2.8)	63 (19.8)
No	154 (96.9)	120 (75.5)	155 (97.5)	135 (84.9)	309 (97.2)	255 (80.2)
Access to Toilet Facility						
Yes Own	9 (5.7)	152 (95.6)	9 (5.7)	59 (37.1)	18 (5.7)	211 (66.4)
Open	150 (94.3)	7 (4.4)	150 (94.3)	100 (62.9)	300 (94.3)	107 (33.6)

Note: (i) [a] = Before the microfinance intervention and [b] = After the microfinance intervention

(ii) Figures in parenthesis denote percentage to the total number of households

Source: Primary Survey

Housing condition of the members has improved in the post microfinance programme period as compared to prior to microfinance interventions. In the total sample, 46.9 per cent households prior to microfinance programme were *kutcha* in nature. There were 29.6 and 64.2 per cent of the member households had the *Kutcha* dwellings in Belthangady and T.Narasipura, respectively, prior to microfinance programme. 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 field 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.

Dwellings with 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 period, there were 63.5 and 69.2 per cent of the households having their own electricity connections. The post microfinance programme has improved the tele-phones connections to 24.5 and 15.1 per cent, respectively. From the total sample it is evidential that there were 94.3 per cent of households who did not have own toilet facility prior to microfinance interventions. However, the condition has improved tremendously after microfinance interventions, in the total sample households, 66.4 per cent were constructed their own toilets. The MFI (SKDRDP) in Belthangady taluk has provided various physical infrastructures for the construction of toilets in their project areas. Hence, after microfinance interventions, 95.6 per cent households constructed their own toilets.

Changes in Household Expenditure: The household expenditure is another important indicator of welfare. The household expenditure starts from expenses on basic necessities (unproductive) to productive purposes. It is observed from the field that in the post microfinance programme period, households have 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 while in turn has increased the expenses of the household.

Table 7 shows that 28.9 and 20.1 per cent of households in Belthangady and T.Narasipura taluk have increased their household expenditure more than 62 per cent as compared to the situation 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) have improved their expenditure by more 44 per cent after the microfinance interventions.

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

Percentage change in the HH expenditure (in Quartiles)	**Number of Households**		
	Belthangady (N=159)	**T.Narasipura** (N=159)	**Total** (N=318)
First Quartiles (Less than 32 Percentage)	31 (19.5)	48 (30.2)	79 (24.8)
Second Quartiles 32 to 44 Percentage)	37 (23.3)	46 (28.9)	83 (26.2)
Third Quartiles 44 to 62 Percentage)	45 (28.3)	33 (20.8)	78 (24.5)
Fourth Quartiles (More than 62 Percentage)	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

Social Impacts of Microfinance-Plus Services

Social impact of the microfinance-plus services on the household economy was examined through the development of *human* and *social capital*. In this study, development of *human capital* has been examined through the indicators like – education, health, confidence level, skills and empowerment of the members or member households. Similarly, the *social capitals* through the development of networks and mobility of the members after the intervention of the microfinance programme have been examined.

The investment on education has increased during 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. 95.6 and 42.8 per cent of the members in Belthangady and T.Narasipura taluk have 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 opined that microfinance groups has improved the access to health care facilities to the members. It is also observed from the field that a majority of the rural women did not have the banking literacy before the membership in microfinance programme. However, in the post microfinance intervention members are acquired the knowledge of banking.

However, the microfinance groups are considered as the best platforms for the development of confidence among the rural poor. It has improved the confidence and knowledge of banking, utilization of savings and credit, taking the self-employment, interaction with the local organizations like – Panchayats, MFIs, NGOs, bank staff etc. The recent innovations in microfinance not only satisfied the financial needs of the poor, but also encouraged in improving the skills and knowledge of the members. 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 at the grassroots levels and provides 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 who agree 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 8. The calculated t-value is significant[1] 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-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. Since, the households in T.Narasipura taluk used the microfinance-plus services for the accumulation of assets than on the employment generation. Thus, the microfinance programme has brought about greater 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 significance of the co-efficient in proving the welfare impact of microfinance-plus services. Hence, to test the significance of two subsets of coefficient the *chow test* has been conducted. It will explain whether or not the microfinance-plus services made change in the welfare of the household economy of the member in the post microfinance programme as compared to the before programme intervention period.

Table 8: Test for the Difference in Household Variables in Pre and Post Microfinance Programme Intervention

Variables	**Belthangady** (N=159)		**T.Narasipura** (N=159)		**Overall** (N=318)	
	μ	t-statistics	μ	t-statistics	μ	t-statistics
HH. Asset (Rs.)	13213.52	1.344**	18066.67	2.687**	15716.27	2.634*
HH. Expenditure (Rs.)	8231.89	10.759*	6652.08	8.492*	7322.23	13.258*
HH. Income (Rs.)	15163.52	17.589*	14421.38	21.291*	14765.16	26.859*
HH. Employment (in no. of days)	155.18	16.341*	86.21	8.428*	120.65	16.980*

Note: (i). N = number of households (ii). μ =Mean changes in households variables from pre to post microfinance intervention. (iii). *, **: Significant at 1 and 5 per cent level, respectively.

Source: Primary data

Now we have three possible regressions for both the taluks, Belthangady and T.Narasipura, respectively. Table 9 presents the description of the variables used in the *chow test* regression. Regression 3 and 6 assume that there is no difference between the two time period (pre and post microfinance intervention periods) 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 microfinance-plus services in the post microfinance programme.

Table 9: Description of the Variables

Variables	Description
Exp_b^0	Expenditure of the household in the pre microfinance programme intervention in Belthangady taluk.
Exp_b^1	Expenditure of the household in the post microfinance programme intervention in Belthangady taluk.
Exp_b	Expenditure of the household in both the periods in Belthangady taluk.
Exp_m^0	Expenditure of the household in the pre microfinance programme in intervention T.Narasipura taluk.
Exp_m^1	Expenditure of the household in the post microfinance programme intervention in T.Narasipura taluk.
Exp_m	Expenditure of the household in both the periods in T.Narasipura taluk.
Y_b	Income of the Households in Belthangady taluk
N_b	Assets of the Households in Belthangady taluk
N_b	Employment of the Households in Belthangady taluk
Y_m	Income of the Household in T.Narasipura taluk
N_m	Assets of the Household in T.Narasipura taluk
N_m	Employment of the Household in T.Narasipura taluk

Regression for pre-microfinance programme period in Belthangady taluk

$$Exp_b^0 = \alpha_1 + \beta_1 Y_b + \beta_2 A_b + \beta_3 N_b + u_1 \quad \text{........................} \ (1)$$

Regression for post microfinance programme period in Belthangady taluk:

$$Exp_b^1 = \alpha_2 + \beta_1 Y_b + \beta_2 A_b + \beta_3 N_b + u_2 \quad \text{........................} \ (2)$$

Pooled Regression for both periods period in Belthangady taluk:

$$Exp_b = \gamma + \beta_1 Y_b + \beta_2 A_b + \beta_3 N_b + u \quad \text{........................} \ (3)$$

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

$$Exp_{tn}^{0} = \alpha_1 + \beta_1 Y_{tn} + \beta_2 A_{tn} + \beta_3 N_{tn} + u_1 \quad \text{..................} \quad (4)$$

Regression for post microfinance programme period in T.Narasipura taluk

$$Exp_{tn}^{1} = \alpha_2 + \beta_1 Y_{tn} + \beta_2 A_{tn} + \beta_3 N_{tn} + u_2 \quad \text{..................} \quad (5)$$

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

$$Exp_{tn} = \gamma + \beta_1 Y_{tn} + \beta_2 A_{tn} + \beta_3 N_{tn} + u \quad \text{..................} \quad (6)$$

The *chow test* is used to test the impact of microfinance-plus services between pre and post microfinance programme interventions. The calculated F-value (chow test) is greater than the table value and significance at 1 per cent level. Therefore, it is clear that the microfinance-plus service of the microfinance programme has improved the income, assets and employment of the member household economy.

The study also attempts 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-plus services on the household economy of the member.

Table 10: Impact of Microfinance-Plus Services on the Household Economy of the Member Dependent Variable = Household Expenditure

Variables	Belthangady			T.Narasipura		
	Pooled reg.	Pre reg.	Post reg.	Pooled reg.	Pre reg.	Post reg.
Constant	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 Belthangady and T. Narasipura Taluks.
Exp^{1}_{btn}	Expenditure of the household in the post microfinance programme in Belthangady and T. Narasipura Taluks.
Exp_{btn}	Expenditure of the household in pre and post periods in Belthangady and T. Narasipura Taluks.
Y_{btn}	Income of the Households in Belthangady and T. Narasipura Taluks.
A_{btn}	Assets of the Households in Belthangady and T. Narasipura Taluks.
N_{btn}	Employment of the Households in Belthangady and T. Narasipura Taluks.

Regression for pre-microfinance programme period for Belthangady and T.Narasipura Taluks

$$Exp^{0}_{btn} = \lambda_1 + \lambda_2 Y_{btn} + \lambda_3 A_{btn} + \lambda_4 N_{btn} + u_1 \quad \text{.......... (7)}$$

Regression for post microfinance programme period for Belthangady and T.Narasipura Taluks

$$Exp^{1}_{btn} = \alpha_1 + \alpha_2 Y_{btn} + \alpha_3 A_{btn} + \alpha_4 N_{btn} + u_2 \quad \text{...... (8)}$$

Pooled Regression for both periods for Belthangady and T.Narasipura Taluks.

$$Exp_{btn} = \gamma_1 + \gamma_2 Y_{btn} + \gamma_3 A_{btn} + \gamma_4 N_{btn} + u \quad \text{......... (9)}$$

Table 12: Impact of Microfinance-Plus Services on the Household Economy of the Member Dependent Variable = Household Expenditure

Variables	Combined for Belthangady and T.Narasipura taluk		
	Pooled reg.	Pre reg.	Post reg.
Constant	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 is 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 microfinance-plus services of microfinance programme have made considerable improvement in the household welfare in the post microfinance.

Conclusion and Policy Implications

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 'microfinance-plus' services have positively correlated 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 nullifies the argument and proved that even vulnerable poor can save if he/she has the accessibility and reward from it (Hulme and Mosley, 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 microfinance-plus services of microfinance introduced the micro-insurance services to reduce vulnerability (result of risk and uncertainty) of the poor.

The microfinance-plus service of microfinance has tried to bring out the poor (women in particular) from below poverty line and fight against the poverty through 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 microfinance-plus services of microfinance not only uplifted the poor from income related poverty but also from the knowledge poverty. Hence, easily accessible and affordable "microfinance-plus services" should be provided to the vulnerable poor who are excluded socially and economically for a long period of time.

Notes

[1] The term 'Microcredit' is defined as "a small amount of money loaned to a client by a bank or other institution. Microcredit can be offered, often without collateral, to an individual or through group lending". However, the term 'Microfinance' has used in a broader framework by consisting of loans, savings, insurance, transfer services and other financial products targeted at low-income clients (International Year of Microcredit, 2005 – http://www.yearofmicrocredit.org/).

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

[3] 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.

[4] It is also called as the "integrated approach" or "maximalist approach" in microfinance (Shetty, 2008). Where the credit services will be provided with savings, micro-insurance, self-employment development, health care services, various training and awareness, networking with various institutions, etc, to the clients of microfinance.

[5] 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.

[6] The Chow test is a statistical and econometric test of whether the coefficients in two linear regressions on different data sets are equal. A variant of the test of linear restrictions occurs to test whether all the coefficients in the model differ two (or more) sub-groups or periods.

[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/membership with local institutions like, Banks, Cooperatives, Mahila Mandal, Gram- Panchayath, etc.

[9] Null hypothesis of equal mean is rejected.

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