

## MICROCREDIT PARTICIPATION AND ITS IMPACT ON WOMEN LABOUR SUPPLY – A CASE STUDY OF TAMIL NADU

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**Abstract:** The study makes a modest attempt to examine the link between participation in microcredit and subsequent changes in their labour supply and time allocation behavior. The expected path is that women beneficiaries use their loans to acquire productive assets, spend their time working on these assets and earn a sustainable income. This is likely to enhance their financial independence and help them spend more time in self-employment than wage work which is considered to be better remunerative and socially respectable activity. The findings from the study indicate that women participation in microcredit programs does not help them to spend more time in self employment but in fact increases their work time in low status activities like wage work and housework. Men, on the other hand use the loan acquired through their wives membership in the microcredit program to purchase assets for self employment. The implication is that although the SHG-program targets women the real beneficiaries in terms of self employment are their husbands.

### INTRODUCTION

Despite rapid expansion in microcredit SHGs and a higher percentage of relatively poor households being the microcredit clients the effectiveness and impact of microfinance in achieving its potential has always been put into question. As far as the impact-oriented studies in the area of microfinance are concerned, numerous studies are being carried out on impact of microcredit programs on rural poor, especially with reference to India. Many of these studies (Lathif, 2001), (Namboodhri & Shiyani, 2001), (Pitt, 2000), (Varman, 2005, 2011), (Khandkar, 2005) reveal that microcredit programs are important institutional devices for providing small credit to the rural poor in order to alleviate poverty. And they suggest that increased availability of micro-credit to the poor will enable the rural households

to take up larger productive activities, increase savings, empower the poor women and decrease the dependence on exploitative local money lenders. Karlan and Zinman (2009, 2010) use a randomized design to estimate the impact of access to credit for potential borrowers near a creditworthiness threshold in urban Philippines and South Africa. They found evidence of profit increases and overall improvements in several welfare-related outcomes.

However there are other researchers such as Adams & Pischke (1992), Rogaly (1996), Navjas et.al. (2000) who caution against such optimism and point to the negative impacts that the micro-finance have led to. Buckley (1997)

argues that despite the incredible growth over a decade in micro-credit programs throughout Africa, there appears to be little evidence to suggest significant and sustained positive impacts for the supposed beneficiaries<sup>1</sup>. Crepon et al. (2011) study in 81 villages of rural Morocco find no impact of microcredit programs on total expenditure, health and schooling, although they document increases in self-employment activities.

To add to this, there is substantial information about the crisis in microfinance sector in the states such as of Andhra Pradesh where in the Governor had passed an ordinance to control the crisis. The Andhra

Pradesh Microfinance Institutions (regulation of money lending) Ordinance (Govt. of Andhra Pradesh, 2010) quotes “Government of Andhra Pradesh has facilitated organization of the below poverty line households into self help groups (SHGs) for the purpose of their economic advancement by achieving financial inclusion through linking with the banking network; Whereas these SHGs are being exploited by private Micro Finance Institutions (MFIs) through usurious interest rates and coercive means of recovery resulting in their impoverishment & in some cases leading to suicides. This is a caution against the optimism of microcredit impact. In-between these two contrary arguments there are studies (Navjas et.al. 2000; Cuong, 2008; Guush and Gardebroke, 2012) that identify beneficial impacts but argue that timing and length of participation in microcredit matters and micro-finance does not assist the poorest.

Though many studies have made attempts to examine the impact of microcredit on poverty, social & economic status and women empowerment, quite surprisingly not many studies have made a thorough analysis on the impact of microcredit on labour supply and time allocation behaviours of women SHG members. Therefore the major task of this study is to examine if the disbursement of microcredit through SHGs has made any impact on women labour supply and time allocation behaviours of SHG members. The rest of the research article is designed as follows.

Section 2 discusses the expected path of microcredit impact on labour supply and time allocation behavior of women. Further it highlights previous studies on women labour supply and time allocation behavior especially in the light of economic incentives. Section 3 explains the methodology of the study focusing mainly on the sampling technique and sample size. The empirical model and estimation procedure is discussed under section 4. Sections 5 and 6 discuss the impact of microcredit on labour supply and time allocation behavior of Female and Male respectively. Summary and conclusion of the study is given under section 7.

### **ECONOMIC INCENTIVE AND FEMALE TIME ALLOCATION BEHAVIOUR**

Microcredit is considered as one of the primary vehicles of

developmental change for rural women in poor countries. The expected path is that women beneficiaries use their loans to acquire productive assets, spend their time working on these assets and earn a sustainable income. This is likely to enhance their financial independence and help combat unfair social norms. This ideological construct has been so forceful that all microfinance clients worldwide are women. The question, of course, is whether microcredit has succeeded in achieving the envisioned goal of moving women into respectful market-work / self-employment and consequently improving the value of their market time. This question becomes more significant given the debate surrounding the impact of microcredit on women clients.

One way to examine this question is to study the association between microcredit and women’s time allocation. If microcredit has the acknowledged effects, then female micro credit clients are likely to spend significantly more time in self-employment when compared to non-clients. As women’s time becomes more valuable, this may also mean that she spends less time in house work. The impact that lending to women is likely to have on male time-use is somewhat more ambiguous that needs further research.

Ever since the economic theory of the household was pioneered by Becker (1965) and Gronau (1973), a good deal of research has gone into the study of time-allocation behaviour of rural households in developing countries. Women’s time-use patterns, in particular, have received much attention. For instance, see Evenson (1978) for Philippines; Khandker (1988) for Bangladesh and Duraisamy & Duraisamy (1995) for India. Further, there are several studies that have focused on how male and female time-allocations respond to new economic opportunities in rural areas. For instance, Braun and Webb (1989) investigate the impact of new crop technology on the division of agricultural labor in West Africa. Mukesh et.al. (2011), argue that women in the rural areas of India are not inclined to participate in market work because of family status concerns in a culture that stigmatizes market work by married women. They also find that the ratio of women’s market work to men’s declines as we move up the caste hierarchy

Given this prolific literature it is surprising that

hardly any work has been done to understand the impact of microcredit on household's time-use. The only exception which was found is Pitt (2000), who examines the effect of microcredit, by gender of participant, on the household's mix of agricultural contracts and the supply of male agricultural labor for the landless poor in rural Bangladesh. Given that women are less involved in income-generating activities in rural Bangladesh Pitt focuses on male time-use only. Consistent with expectations, he finds strong evidence to suggest that participation in microcredit substantially increases own-cultivation through sharecropping, coupled with a significant increase in male hours in self-employment and a reduction in male hours in agricultural wage work. He also finds that female credit effects are larger than male credit effects, both in increasing sharecropping and in increasing male self-employment and reducing male wage labor.

Women employment in India especially in rural areas has two intrinsic characteristics. (i) The family poverty status which dictates that both men and women participate in market production and (ii) patriarchal characteristic that excludes women from inheriting family's productive assets, mainly, arable land. The characteristic of women employment mentioned above gives a picture that women especially in rural areas are forced to work in low paid wage works, having very less opportunities to be self employed. Self-employment is closely related to the household's asset ownership, and moving from wage laboring to self-employment requires substantial investments in productive assets.

The aim of this study is predominantly to examine whether women participating in the microcredit schemes have been able to use their loans to reduce the time spent in badly paid wage laboring and increase the time spent in self-employment when compared to women who do not participate in microcredit schemes. Similar linkages are examined for the husbands of the women microcredit borrowers. The association between participation in microcredit and time allocation behaviour is tested

with data collected from a sample survey of seven villages belonging to Madurai districts of Tamilnadu, that participate in the microcredit programs. The methodology, sampling size and sampling techniques is discussed in the section 3.

### **METHODOLOGY, SAMPLE SIZE AND SAMPLING TECHNIQUE**

For this study, information on individual's microcredit participation, their socio-economic status and time allocation to various activities is essential. In the Indian microfinance context there are no reliable sources of secondary data available on the above mentioned variables at a macro level and therefore data needs to be obtained from a primary survey. Keeping in mind the time and financial constraint, a sample survey of villages in Madurai district of Tamilnadu (India), where microcredit programs are in existence was carried out. Madurai was chosen in such a way that it represents the average in number of SHG among the districts of Tamilnadu. A stratified random sampling was done such that the whole of Madurai District was divided in to seven parts based on the number of Taluks. After the stratification of the district seven villages having sufficient number of microcredit-SHG clients/households, each representing one taluk was chosen. From these 7 villages a representative proportion of microcredit client and non-client households were selected in random for the study. Table 1 gives a glimpse of how the sampling has been done. The seven Taluks in Madurai district that were chosen for collecting data from sample households are South Madurai, North Madurai, Melur, Perayur, Thirumangalam, Usilampatti and Vadipatti. Each of these taluks comprises of several villages under it. Due to time and resource constraints, seven villages viz., Kaithirinagar, Vaagaikulam, Pulipatti, Vittilpatti, Nadukottai, Pullaneri and Vaigasipatti was chosen to represent, each of the above mentioned taluks respectively. The sample households were drawn on random from these chosen villages.

**Table 1: Sampling Design and Sample Distribution of Survey Households**

Taluk	Village	# of Total HH	Tot.Pop. of Village	# & % of SHG-HH	# & % of Non-SHG HH	10% of Total SHG HH	30% of Total Non-SHG HH	Total Sample Size
South Madurai	Kaithiri-nagar	536	1765	403 [75]	133 [25]	41	40	
North Madurai	Vaagaikulam	353	1487	271 [77]	82 [23]	27	24	
Melur	Pulipatti	344	1533	282 [82]	62 [18]	28	19	
Perayur	Vittilpatti	303	1123	219 [72]	84 [28]	22	25	
Thiru-mangalam	Nadukottai	447	1794	321 [72]	126 [28]	32	38	
Usilampatti	Pullaneri	410	1597	303 [74]	107 [26]	31	32	
Vaadipatti	Vaigasipatti	365	1488	276 [76]	89 [24]	28	27	
Sample Size						209	205	414

Note: Figures in the brackets indicates the percentage to total households  
 Source: Primary Survey Data

The sample units in our study are women microcredit clients (treatment group) and non-clients (control group) from randomly selected households within the chosen villages. In table 1 it can be observed that all the 7 villages chosen for the study have on an average of 74 percent of its households as client of microfinance SHGs. Since the villages had almost 3/4<sup>th</sup> of the households clients of microcredit programs (Columns 5 & 6) and the rest are non-client households, collecting data from sample client and non-client households proportional to their respective population would not ensure us sufficient number of non-client<sup>2</sup> households to the total sample size, restricting us in making statistically valid comparisons between them. Therefore, in order to draw sufficient and equal number of both client and non-client households a smaller percentage (10 %) of SHG client households and a comparatively larger percentage (30 %) of non-client households were randomly chosen from their respective population (Columns 7 & 8).

Subsequently, based on the above mentioned criterion, data was collected from a total of 209 SHG-client households and 205 non-client households putting

the total sample size for the study to 414 households. Data was collected using a well structured questionnaire enquiring details on family particulars, Socio-economic particulars, household ownership of consumer durables, land ownership, characteristics and facilities of household dwelling, Building materials of house, SHG member details, households banking transactions, and time allocation<sup>3</sup> to predetermined activities of the respondent (women microcredit client/non client) and their spouse.

### THE EMPIRICAL MODEL AND ESTIMATION PROCEDURE

Data from the household-survey is used to investigate whether lending to women is likely to have an impact on household's time-use or time allocation behavior. Instrumental Variables Regression (IV) technique has been used to estimate the male and female time use / allocation models separately. The dependent variables in these models are the time spent by the respondent (male or female / client or non-client as relevant) on different activities. Five dependent variables for different models are defined to capture male and female time-use, viz., (i)

Market Work, (ii) Self Employment, (iii) Wage Work, (iv) House Work and (v) Leisure, where; *Market* denotes total time spent by the individual in market-work which is the total time spent on Self employment and wage work; *Self employment* is the daily time spent in self-employment; *Wage Work* is time spent in wage work; *House Work* is time spent in household work and *Leisure* is the total leisure time. The time-use variables defined above are regressed separately for men and women, on independent variables measuring credit program participation and controls measuring personal and household characteristics that may influence time-use. Dummy variables are indicated by a (D). These are described below.

**Duration of SHG membership:** In female time-use models, this indicates the number of years the woman has been a member of the credit program. In male time use models it indicates the length of the wife's membership. Non-members in all cases are coded as zero.

**Age:** Age of the respondent / Spouse measured in years.

**Education:** The education background of the respondent / Spouse. It takes the values 0 = illiterate), 1 = Educated up to High school level and 2 = Educated beyond High School Level

**Household Income:** Total Household Income per month

**No. of Children:** Total number of children in the respondent family.

**Labour Share:** The proportion of household members aged 14 or above divided by household size. This number indicates the dependency burden on the working members of the household. A lower share denotes greater dependency.

**Type of Dwelling (D):** Coded as 1 if the roof is made of concrete or durable roof (tiles or similar materials) and zero otherwise. This variable indicates the relative economic status of the household.

**Caste(D):** Coded as one if the household is from the lower castes (Scheduled Caste or Scheduled Tribe) else 0.

**Majority Caste (D):** Coded as 1 if respondent belonging to a caste other than majority caste in their respective village else zero.

**Land Holding:** The amount of land owned by the household in acres.

For *Duration of SHG membership*, a positive sign of the coefficient is expected in the *Self-Employed* model and a negative sign is expected in the *Wage-Work* model for women as an increase in length of credit program membership is likely to increase women's time in self-employment and decrease the time spent in wage work. For control variables, *Age and Education*, a negative sign of the coefficient is expected in the *Wage Work* model for all respondents as an increase in respondent's age and education are likely to decrease the time spent in physically demanding and low skilled wage work. In addition, for *Education and Dwelling(D)*, a positive sign is expected in the *Self-Employed model* for men since an increase in education and wealth are likely to increase male time in self-employment. For *Household Land Holding*, a positive sign of coefficient is expected in *Self-Employed* model and a negative sign in *Wage-Work* model for men as an increase in access to land is likely to increase male time in self-employment and decrease the time spent in wage work. Wage work is less likely to be done by land owners because of low pay and low social status associated with it. There are no explicit expectations on the signs of the remaining variables.

However, Microcredit impact assessment studies are routinely confronted by the possibility of selection bias which would produce biased and exaggerated statistical effects participation in microcredit programs. One of the standard methods used to correct for the endogeneity of credit program participation is the instrumental variable (IV) technique (Pitt and Khandker, 1998; Pitt, Khandker and Cartwright, 2006). Under the instrumental variable technique, the variable measuring participation is not used directly but is estimated using instruments, which are variables not endogenous to program participation. Following Pitt and Khandker, this study uses the instrumental variable method to estimate *Duration of SHG Membership*. Given the nature of the data we were able to identify one instrumental variable viz., *Majority Caste*. A dummy variable coded as 1 if respondent belongs to a

caste other than the majority caste in the village else 0. The computational method used to compute Instrument Variables estimates is the two-stage least squares (2SLS).

**IMPACT OF MICROCREDIT ON FEMALE TIME ALLOCATION BEHAVIOR**

As mentioned in the previous sections 5 variables are used to capture male and female time allocation behavior viz., (i) Market Work, (ii) Self Employment, (iii) Wage Work, (iv) House Work and (v) Leisure. Table 2 gives the average time in hours that the sample men and women spend on different activities and corresponding

t-statistics. The t-statistic for comparing means of female time-use with male time-use differs significantly with respect to all the mentioned activities. In particular, women are seen to spend significantly less time doing self-employed work within market-work than men. They do most of the housework and enjoy significantly less leisure when compared to men. t-statistic comparing two means indicate that men spend more than double the time women do in self-employment but spend far less time in wage work.

**Table 2: Time Allocation to Self Employment, Wage Work, Work at Home and Leisure of Females & Males**

Mean Time Allocation To Various Activities	Female Time Allocation (Hours per Day)	Male Time Allocation (Hours per Day)	t-Statistics for Comparing Two Means
Market (Self + Wage)	6.01 ( 2.02)	8.38 (1.98)	-8.443 ***
Self Employment	2.42 (2.10)	5.39 (2.95)	- 6.91 ***
Wage Work	3.77 ( 2.96)	2.99 (2.15)	4.27 ***
House Work	4.27 (1.74)	0.82 (1.46)	17.40 ***
Leisure	13.54 (1.78)	14.80 (2.14)	3.86 ***
N	414	414	

**Note:** (i) Figures in the brackets are Standard Deviations  
 (ii) t-statistics is done to compare mean values of variables 'Male' and 'Female' in the sample  
 (iii) \*\*\* indicates Significant at 1% Level.  
 Source: Primary Survey Data

Tables 3(a) and 3(b) provide descriptive statistics of all the variables used in female and male time allocation model respectively (comparing SHG-members with that of non-members). In case of male time allocation model, the wife's SHG membership is considered for participation in microcredit SHGs. The descriptive statistics in female time allocation model given in table 3(a) shows that the statistics for couple of the variables included in the empirical model differ significantly between SHG-members and non-members. The significant differences are with respect to time spent in self-employment, and leisure. Apart form these two variables, household income, labour share and land holdings show significant difference between the SHG members and non-members. t-statistics in Column 4 indicates that the individual characteristics do not differ much between the two categories of respondents. As far as the descriptive statistics of variables in male time allocation model is concerned given in table 3(b) a significant differences for time spent in different activities especially Market work, Self-Employment and Leisure can be observed. The t-statistic for all except leisure is positive. This suggests that men whose wives are SHG-members spend more time in market-work, specifically self-employment and as a consequence spend less time in leisure as compared to men whose wives are non-members.

**Table 3(a): Descriptive Statistics of Variables Used in Female Time use Model (SHG Members / Non-Members)**

Variables Used	SHG Members	Non-SHG Members	t-statistic
Dependent Variable(s): Average Time Spent on Various Activities (No. of Hours per Day)			
Market ( Self + Wage)	6.47 (2.31 )	5.90 (2.78 )	1.72*
Self Employed	2.51 (1.98)	2.33 (2.16)	1.16
Wage Work	3.96 ( 2.80)	3.57 (3.12)	3.35 **
Work at Home	4.36 (1.27)	4.18 (2.20)	1.14
Leisure	13.17 (1.86)	13.92 (1.71)	2.48 **
<b>Individual Characteristics</b>			
Age	38.16 (6.24)	39.52 (5.81)	-1.34
Education	1.19 (0.61)	0.98 (0.31)	1.38
<b>Household Characteristics</b>			
Education of the Household Head	0.06 (0.25)	0.03 (0.32)	-0.26
Household income per month	2892.34 (1328.5)	3612.20 (2105.86)	-4.168 ***
No. of Children	2.86 (1.64)	2.44 (1.83)	1.07
Labour share	12.66 (4.3)	18.41 (5.7)	3.45 ***
Type of Dwelling	0.21 (0.24)	0.64 (0.44)	1.77
Caste	0.54 (0.33)	0.21 (0.48)	1.85
Land Holdings	1.02 (1.81)	2.35 (1.49)	-8.15 ***
N	209	205	

**Note:** (i) Figures outside the parenthesis in column 2 and 3 are mean values of respective Variables

(ii) Standard Deviations are given in the Parenthesis

(iii) (\*\*\*) Significant at 1% level, (\*\*) significant at 5% level,

(\*) Significant at 10 % level.

Source: Computed from Primary Survey Data

**Table 3(b): Descriptive Statistics of Variables Used in Male Time use Model (SHG Members / Non-Members)**

Variables Used	SHG Members	Non-SHG Member	t-statistic
Dependent Variable: Average Time Spent on Various Activities (No. of Hours per Day)			
Market (Self + Wage)	9.06 (2.59)	7.76 (1.98)	2.25 **
Self Employed	6.17 (3.14)	4.62 (2.77)	3.16 ***
Wage Work	2.89 (2.45)	3.14 (1.85)	-0.88
Work at Home	0.73 (1.21)	0.91 (1.72)	-0.24
Leisure	14.21 (1.92)	15.33 (2.36)	-2.84 **
<b>Individual Characteristics</b>			
Age	40.68 (7.1)	43.58 (6.22)	0.97
Education	1.86 (0.85)	1.26 (0.73)	1.26
<b>Household Characteristics</b>			
Education of the Household Head	0.06 (0.25)	0.03 (0.32)	-0.26
Household income per month	2892.34 (1328.5)	3612.20 (2105.86)	-4.168 ***
Children	2.86 (1.64)	2.44 (1.83)	1.07
Labour share	12.66 (4.3)	18.41 (5.7)	3.45 ***
Dwelling	0.21 (0.24)	0.64 (0.44)	1.77
Caste	0.54 (0.33)	0.21 (0.48)	1.85
Land Holdings	1.02 (1.81)	2.35 (1.49)	-8.15 ***
N	209	205	

**Note:** (i) Figures outside the parenthesis in column 2 and 3 are mean values of respective Variables  
(ii) Standard Deviations are given in the Parenthesis  
(iii) In case of male time allocation model, the wife's SHG membership is considered.  
(iv) (\*\*\*) Significant at 1% level, (\*\*) significant at 5% level,  
(\*) Significant at 10 % level.  
Source: Computed from Primary Survey Data

As mentioned earlier microcredit impact assessment studies are routinely confronted by possibility of credit program participants differing from that of non-participants in unobservable characteristics leading to problem of selection bias. Under such circumstances using program participation as a variable in estimating the impact of microcredit participation and male and female time allocation behavior would give biased and exaggerated results. To avoid the bias we use instrumental variable technique following Pitt, Khandker and Cartwright, (2006) where we first estimate participation by regressing microcredit program participation (*Duration of SHG Membership*) on covariates and instrument(s) (in our study 'majority caste' which is a variable not endogenous to program participation). The predicted values from the first stage regression are obtained. The In the second stage, the regression of interest is estimated as usual, except that in this stage the endogenous covariate i.e., program participation is replaced with the predicted values from its first stage model i.e., *Duration of SHG-Membership(est)*<sup>4</sup>. The first-stage regressions for both male and female models are reported in Table 4.



**Table 4: Estimation of Microcredit Program participation (Results of the First-Stage Regression)**

Variables Used	Female	Male
<b>Dependent Variable : Program Participation</b>		
Duration of SHG Membership		
<b>Instrumental Variable:</b> Majority Caste	0.171 (17.31) ***	0.184 (21.44) **
<b>Individual Characteristics</b>		
Age	0.011 (0.24)	-0.004 (-0.17)
Education	0.314 (0.80)	0.056 (0.62)
<b>Household Characteristics</b>		
No. of Children	0.126 (2.04) **	0.091 (1.03)
Labour share	-0.008 (-1.83) *	-0.141 (-2.031) **
Type of Dwelling	-0.051 (-0.26)	0.206 (0.19)
Caste	0.284 (1.88)*	0.021 (1.17)
Land Holdings	-0.323 (-1.21)	-2.35 (-1.36)
Household income	0.032 (0.64)	0.715 (0.86)
Constant	-2.348 (-4.37) ***	-1.641 (-2.17)**
N	414	414
R <sup>2</sup>	0.691	0.643

**Note:** (i) 't' statistics are given in the Parenthesis  
(ii) In case of male model, the wife's SHG membership is considered.  
(iii) (\*\*\*) Significant at 1% level, (\*\*) significant at 5% level,  
(\*) Significant at 10 % level.

Source: Computed from Primary Survey Data

The results in table 4 exhibits that the coefficients for number of children, labour share and caste to which the respondent belongs are statistically significant at 5%, 10% and 10% respectively, in determining the participation in microcredit SHGs in female model. Where as number of children and caste are positively related to SHG membership, labour share is negatively associated with SHG membership. In the male model the coefficient for labour share alone is statistically significant at 5% level and has a negative sign as in case of the female model. However the coefficients for the instrumental variable (Majority Caste) are statistically significant at 1% and 5% for female and male models respectively. Table 5 provides the results of the second-stage regression (Female time allocation model) which provides the estimates of female time allocation behavior. Each column in the table represents a separate time-use model representing each activity, which examines whether membership of the credit program affects the time used by the respondent in that particular activity. t-statistics are given in the parentheses. In particular, we do not find statistically significant coefficient for Duration of SHG membership(est) in any female empirical model except for wage work model [5(c)] among the female time-use models [5(a) to 5(e)] in table 5. It indicates that participation in microcredit increases the time spent by women in wage work rather than in self-employed activities.

Among the control variables we find statistically significant negative coefficients for age in female wage work model. The coefficient for education is significant and positive in market and self-employed models [5(a)-5(b)] but negative in wage work model. The coefficient for number of children is positive and significant for wage work model. Labour share coefficient is negative for wage work and positive for leisure model. The coefficient for caste is not statistically significant in any of the female time use models except for wage work model. The coefficient for land holding is statistical significant impact on self-employed activities and work at home [5(b) & 5(d)].

In total the results of the female time allocation behavior given in table 5 indicate that lending to women does not affect the conventional demands surrounding women’s work and leisure. It does not help SHG women to spend more time in better remunerated and socially respectable activities.

**Table 5: Estimation of Determinants of Women’s Time Allocation Behavior (Results of the Second-Stage Regression)**

Variables	Market (Self+Wage)	Self Employed	Wage Work	Work at Home	Leisure
Model Identification no.	5(a)	5(b)	5(c)	5(d)	5(e)
<b>Dependent Variables: Time spent on Various Activities - Hours per Day</b>					
<b>Program Participation</b>					
Duration of Membership(est.)	1.063 (1.71)*	1.824 (0.76)	2.312 (1.87)*	0.135 (0.35)	-0.524 (-1.22)
<b>Individual Characteristics</b>					
Age	-0.022 (-1.21)	0.112 (0.93)	-121 (-3.34)***	0.002 (1.15)	1.342 (0.92)
Education	0.394 (1.92)*	1.312 (2.04)**	-2.454 (-2.31)**	-0.025 (-0.06)	0.212 (0.85)
<b>Household Characteristics</b>					
No. of Children	0.028 (0.19)	0.091 (1.03)	1.265 (2.33)**	-0.064 (-0.07)	0.022 (1.74)*
Labour share	-0.035 (-1.02)	0.127 (1.06)	-0.651 (-1.78)*	0.011 (0.64)	0.351 (1.84)*
Type Dwelling	-0.024 (-0.58)	-0.289 (-1.79)*	-0.071 (-1.01)	0.241 (1.74)**	-0.312 (-1.18)
Caste	0.748 (0.16)	-0.044 (-0.36)	1.348 (2.33)**	0.024 (1.10)	0.215 (1.34)
Land Holdings	-0.042 (-0.31)	0.012 (2.45)**	-0.571 (0.08)	0.238 (2.36)**	2.17 (0.98)
Household income	0.34 (0.56)	0.442 (1.17)	-0.51 (-0.02)	0.344 (0.65)	0.58 (0.73)
Constant	8.245 (5.84)***	3.794 (2.21)**	6.657 (8.54)***	8.768 (3.14)***	3.215 (3.97)***
N	414	414	414	414	414
R <sup>2</sup>	0.552	0.671	0.667	0.544	0.588

- Note:** (i) ‘t’ statistics are given in the Parenthesis  
(ii) Predicted values of Duration of SHG Membership from its first stage regression is used as a proxy for program participation.  
(iii) (\*\*\*) Significant at 1% level, (\*\*) significant at 5% level, (\*) Significant at 10 % level.

Source: Computed from Primary Survey Data

**IMPACT OF MICROCREDIT ON MALE TIME ALLOCATION BEHAVIOUR**

Table 6 presents the estimates of male time allocation models. The coefficient for Duration of SHG membership (est.) was not statistically significant in any of the female time allocation models except for wage work model indicating that, lending to females doesn't help them to put their time into self-employed activities.

**Table 6: Estimation of Determinants of Men's Time Allocation Behavior (Results of the Second-Stage Regression)**

Variables	Market (Self+Wage)	Self Employed	Wage Work	Work at Home	Leisure
Model Identification no.	6(a)	6(b)	6(c)	6(d)	6(e)
<b>Dependent Variables: Time spent on Various Activities - Hours per Day</b>					
<b>Program Participation</b>					
Duration of Membership(est.)	0.636 (2.61)**	1.347 (3.95)***	0.145 (0.53)	0.024 (0.72)	-0.282 (-2.33)**
<b>Individual Characteristics</b>					
Age	-0.014 (-0.95)	0.097 (1.81)*	-2.133 (-0.27)	0.002 (1.15)	0.542 (1.77)*
Education	0.025 (1.70)*	0.997 (1.16)	-1.625 (-0.95)	0.110 (0.47)	0.864 (1.92)*
<b>Household Characteristics</b>					
No. of Children	0.034 (1.98) **	0.091 (1.02)	0.342 (0.89)	0.081 (0.23)	-0.157 (-1.11)
Labour share	-0.027 (-0.56)	0.059 (1.77) *	-0.741 (-1.85)*	0.034 (0.59)	0.265 (2.47)**
Dwelling	1.520 (1.76)*	0.976 (0.63)	0.132 (0.41)	-0.332 (-0.14)	0.433 (0.55)
Caste	0.366 (0.67)	-0.443 (-0.05)	2.213 (1.32)	0.255 (1.21)	-0.017 (0.14)
Land Holdings	-1.832 (-2.17)**	0.054 (0.62)	-0.644 (-0.15)	0.465 (0.18)	2.17 (0.98)
Household income	0.586 (0.41)	0.091 (1.71)*	-0.485 (-0.67)	0.834 (0.54)	0.722 (0.39)
Constant	9.677 (7.65)***	5.468 (2.76)**	7.897 (5.25)***	4.871 (2.89)**	8.512 (6.95)***
N	414	414	414	414	414
R <sup>2</sup>	0.611	0.687	0.714	0.663	0.594

**Note:** (i) 't' statistics are given in the Parenthesis  
 (ii) In case of men time allocation model, the wife's duration of SHG membership is  
 (iii) Predicted values of wife's Duration of SHG Membership from its first stage regression is used as a proxy for program participation.  
 (iv) (\*\*\*) Significant at 1% level, (\*\*) significant at 5% level, (\*) Significant at 10 % level.

Source: Computed from Primary Survey Data

However we find the coefficient for same variable (program participation) statistically significant at 5%, 1% and 5% levels in three of the five male time allocation models viz., market model [6(a)], Self-employed model [6(b)],

and leisure model [6(e)] respectively. It has a positive sign in market model and self-employed model but a negative one in leisure model indicating that membership of female in microcredit increases the time spent by her husband in self employment and reduce the time spent on leisure.

The results of male and female time allocation models given in tables 5 and 6 reflects that the length of women's SHG-membership does not affect their time-use, but that it is likely to increase the amount of time their husband's spend in self-employment. Specifically, the results suggest that lending to women does not help them spend more time in self-employment but may actually increase their involvement in wage work. Garikipati (2009) has also found a similar observation in her study. The results, however, indicate that men whose wives' are SHG members are likely to spend significantly greater amount of time in self employment and enjoy less leisure when compared to men whose wives' are not members. This relationship is likely to be strengthened as duration of membership increases. It is possible that men are substituting leisure for work as a result of it becoming more expensive. In reality, loan to females are put into self employed activities of their male counterpart thereby increasing the time spent in self-employment by their male counterparts. Since these men are more likely to be involved in better paying self-employed activities, the opportunity cost of leisure is higher for them when compared to that of men who work mainly for wages and therefore we can justify the negative sign of the coefficient of SHG membership in male leisure model.

### CONCLUSION

Overall our estimates indicate that women participation in microcredit programs does not help them to spend more time in self employment which is considered as better remunerated and socially respectable activities. While women work for significantly longer hours when compared to their husbands, they spend most of their work time in low status activities like wage work and housework and microcredit does not allow them to break away from this pattern. Men, on the other hand, work mainly in self employed activities and their wives' membership of the credit program further helps strengthen the activity making it possible for them to

spend more time working on these. The implication of the results is that although the SHG-program targets women the real beneficiaries in terms of self employment are their husbands.

### (ENDNOTES)

- 1 In terms of increase in assets, increase in income flow of the household or the level of employment.
- 2 A larger sampling size for non-clients captures the presumably larger variance among non-clients with respect to any poverty indicator than the variance found among clients. Because of MFI targeting and self-selection of clients, the client group is likely less heterogeneous (has less variance) than the Non-client group (Zeller et al, 2000).
- 3 A recall period of 30 days was used for collecting data pertaining to respondents time allocation to predetermined activities
- 4 Duration of SHG membership(est.) refers to the estimated values of the same variable

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