

Evaluating the Impact of Microfinance on Household Welfare: An Empirical Study in Delhi

Dr. Vandana Sethi

Associate Professor, Department of Economics, Motilal Nehru College, University of Delhi, New Delhi. INDIA

Corresponding Author: vandanasethidu@gmail.com

Received: 10-07-2024

Revised: 28-7-2024

Accepted: 17-08-2024

ABSTRACT

Microfinance institutions, through the availability of credit to low-income households, create opportunities for self-employment, facilitate the expansion of existing businesses, and positively impact their welfare levels. Many researchers support the view that access to microfinance loans considerably increases household consumption expenditure, while others argue that it has minimal or no impact on average household consumption levels. An attempt has been made in the present paper to study the impact of microfinance on the welfare of households in the context of MFIs in Delhi. The welfare is broadly measured through an increase in households' (HHs) monthly per capita consumption expenditure (MPCE). Using the Logit regression model, an empirical analysis is carried out based on primary data collected from 368 households in Delhi Slums in 2016. The key findings reveal that access to MFI's loans has a positive impact on the MPCE of its clients as an increase in the consumption expenditure after MFI's loans is larger for HHs in the 'treatment group' as compared to those in the 'control group'.

Keywords-- Microfinance Institutions (MFIs), Household Welfare, Monthly Per Capita Consumption Expenditure (MPCE), Socio-economic Factors, Financial Inclusion

I. INTRODUCTION

Microfinance institutions, through the availability of credit/loans, open up avenues for self-employment opportunities, enable the poor to scale up their existing enterprises, make them creditworthy, and improve their economic and social conditions (Singh, 2006; Yahaya et al., 2011; Shastri 2009). The provision of microcredit to poor families, particularly to women, is stated to have the potential to bring improvement in various indicators of welfare such as income, consumption, health, education, status, and empowerment (Tenaw and Islam, 2009). Various studies have used household consumption expenditure as a proxy for household welfare, considering it the most accurate indicator of overall well-being. Many researchers argue that access to microfinance loans significantly boosts household consumption expenditure.

However, other studies, such as those by Morduch (1998) and Crepon et al. (2015), have found minimal or no impact on average household consumption levels. The issue stands important due to divergent claims about this impact varying from positive to neutral and even negative depending upon differences in the household's level of financial literacy, entrepreneurial capabilities, group cohesion, population density, etc. (Armendariz and Morduch, 2005).

The present paper focuses on the study of the impact of microfinance on the welfare of households in India's capital city - Delhi. The welfare is broadly measured through an increase in households' (HHs) monthly per capita consumption expenditure (MPCE). An attempt has been made to study the impact of MFI's loans on the 'increase in MPCE' of the HHs. It is hypothesized that other things being constant, an increase in the consumption expenditure after MFI's loans is larger for HHs in the 'treatment group' as compared to those in the 'control group'. The empirical analysis is based on primary data collected from 368 households (grouped under treatment and control groups) in Delhi Slums in 2016. The hypothesis is empirically tested using the Logit regression model.

Following the introduction, section 2 reviews some highlights of findings about the impact of microfinance on household welfare as revealed in the existing literature on this subject. Section 3 presents data base and methodology used. Section 4 presents empirical findings on the effect of MFIs loans and various socio-economic factors on households' 'increase in MPCE'. The last section concludes.

II. IMPACT OF MICROFINANCE ON HOUSEHOLD'S WELFARE– A BRIEF SURVEY OF EXISTING LITERATURE

The broad determinants of a household's welfare are income and per capita consumption expenditure levels. Many researchers, in their assessment of the impact of microfinance on poverty and welfare, support the view that

access and availability of funds through participation in microcredit schemes have a positive influence on household's welfare (Hulme 2000; Aghion & Morduch, 2000; Puhazhendhi and Badatya, 2002; Li et al. 2011b). Concomitantly, microcredit may not be a magic wand to improve welfare though it does help HHs to borrow, invest, and expand their businesses (Banerjee et al., 2009). The literature on the impact of microfinance on household welfare can be broadly categorized as (a) studies that find the impact to be positive and (b) studies that observe the negative or inconclusive impact.

The welfare impact assessments differ across countries and regions due to variations in programs and socio-economic and country-specific factors. Noreen et al. (2011) analyzed four microcredit programs in Pakistan, while Li et al. (2011b) examined their impact on rural households in China. Islam et al. (2013) evaluated the performance of the four largest microfinance institutions in Bangladesh. These studies consistently found a positive correlation between microcredit programs and the consumption expenditure of participating households. Pitt and Khandker (1998) and Khandker (2005) using data from World Bank and BIDS (Bangladesh Institute of Development Studies) surveys conducted in the 1990s, found that the microfinance programmes positively impacted household's consumption levels, and this effect was significantly higher in case of the female borrowers. Fattah (2014) found an increase in consumption expenditure of extremely poor households in Bangladesh, as shown by the rise in per capita food and non-food expenditures. Hossain (1984) observed that credit by Grameen Bank in Bangladesh did have a positive impact, leading to an increased level of both, per capita income and household income. Hulme (2000) conducted studies in some of the countries in Asia using village-wise aggregate data and a control group approach. The studies found a positive impact on borrower incomes. "Their incomes over the control group had increased (1988-1992), ranging from 10-12 percent in Indonesia to around 30 percent in Bangladesh and India". Samer et al. (2015), studied the Malaysian microfinance programme 'Amanah Ikhtiar Malaysia' (AIM) and found that the programme made poor women self-sufficient and had a positive effect on their socio-economic well-being. These findings reaffirmed the widely held view that microcredit programmes contribute to improvement in the welfare of participant households by enabling them to increase their earnings and raise their consumption levels (Li et al., 2011b).

As against these 'positive impact' studies, there are several others that have come out with inconclusive or less positive results. Morduch's (1998) results for households in Bangladesh showed no evidence of increasing consumption levels. The consumption smoothing of these households seems to be largely due to

income smoothing and not due to borrowing. A study by Crepon et al. (2015) in rural Morocco indicated minimal impact of AI Amana microfinance program on average consumption levels. However, households that already had a business reduced their overall consumption, opting to save and invest the borrowed money in expanding their businesses. On the other hand, households without prior business activities increased their spending on food and durable goods, leading to no significant impact on business outcomes. Hulme and Mosley (1996) found only a limited impact of microcredit on the real income (nominal income adjusted for inflation) of BRAC clients. Coleman (1999) studied the village banking microfinance schemes in Thailand and suggested that there was virtually no positive impact of loans on household income and assets even after a period extending to many months of bank's membership as these small-sized loans were mainly used to improve their consumption levels because they were too inadequate for building income-generating assets. However, Coleman (2006) using the same data with a modified strategy of assessing the efficacy of microfinance in improving levels of income of the poor, found a positive impact of microloans on committee member's income, wealth, and savings while for other members, it was zero or negative.

III. DATABASE AND METHODOLOGY

The present study is based on a primary survey of 368 households from selected slums in urban Delhi, where MFIs are operating. The scorecard approach has been used to predict the MPCE of the HHs. The National Sample Survey (NSS) 68th round (2011-12) household (HH) data on consumption expenditure for Urban Delhi is used to develop a scorecard. The selected indicators in the scorecard were used to collect the primary data from MFI clients.

The structured household questionnaire used for the primary survey includes all the variables selected for the scorecard. Data was collected from a total of 368 respondents, with 215 in the treatment group (T-group) and 153 in the control group (C-group). The T-group consists of respondents who have already obtained loans from microfinance institutions (MFIs) and have been associated with them for at least three years. The C-group consists of respondents who have been approved for their first loan by MFIs but have not yet received the loan amount.

²To develop a scorecard, a Household's monthly per capita expenditure based on mixed reference period (MPCE-MRP), as used in the NSS 68th round (2011-12) has been taken to be the dependent variable which serves as a proxy indicator of household's welfare. Different variables from the survey are taken as independent variables. The Ordinary Least Squares (OLS) step-wise

regression method is employed to select the final indicators that best predict household expenditure. These indicators include the average education level of adults in the household, dwelling type, household size, number of children in the family, and ten assets owned by the household.

Data for both groups was collected for the 'current' period and the 'before' period. The 'before' period refers to the time when the treatment group (T-group) joined a specific MFI, and for the control group (C-group), it refers to three years before the survey date. The 'current' period corresponds to the time of the household survey conducted in the last quarter of 2016. Data for the 'before' period was collected based on recall. Using the scorecard (regression model) and information from the questionnaire, the monthly per capita expenditure (MPCE) of each household was predicted for both the 'current' and 'before' periods. This prediction was made by inputting the values of the independent variables from the household questionnaire into the regression model and calculating the value of the dependent variable, which is the MPCE of each household.

To empirically understand the factors that bring about an 'increase in MPCE' of (all) households, whether in the treatment group or control group, a logit regression method is used. The dependent variable 'MPCE-increase' is a dummy variable that measures if there is an increase in the MPCE between the 'before' period and the 'current' period. sTC-code (i.e., whether HH belongs to a treatment group or control group) along with various socio-economic factors of HHs are taken to be independent variables in the model. Marginal effects are also estimated to show the difference in the predicted probabilities for the cases in one category relative to the reference category. Table 1 presents the estimated coefficients of the parameters obtained in the empirical analysis.

IV. EMPIRICAL ESTIMATES ON THE IMPACT OF MFI'S LOANS ON HOUSEHOLD'S MPCE

This section empirically examines the effect of MFI's loans along with other socio-economic factors of HHs on their MPCE using the following equation. Equation (1) determines the factors that bring about an 'increase in MPCE' of (all) households, whether in the treatment group or control group, based on Logit regression.

$$\text{MPCE-increase (all HH)} = \beta_0 + \beta_1 \text{Family-type} + \beta_2 \text{HH-type-B} + \beta_3 \text{Social-group} + \beta_4 \text{Religion} + \beta_5 \text{TC-code} + \beta_6 \text{Age-women-B} + \beta_7 \text{Education-women-B} + \beta_8 \text{Age-less than 15-B} + \beta_9 \text{Education-head-B} + \beta_{10} \text{Female-headed-HH} + \beta_{11} \text{MPCE-quintile-B} + \beta_{12} \text{Access-bank-loan} + \beta_{13} \text{women-employment-type-B} + \mu \dots \dots \dots (1)$$

For equation (1), the dependent variable 'MPCE-increase' is a dummy variable that measures if there is an increase in the MPCE between the 'before' period and 'current' period, it is assigned the value of '1' for an increase in MPCE and '0' otherwise. The independent variables include primary variables of interest related to the MFIs loan (TC code), control variables reflecting the household's socio-economic features, and those capturing women's and household's head's personal characteristics. These include a dummy variable TC-code (it is assigned the value of '1' if the household belongs to the treatment group and value '0' if the household belongs to the control group) and socio-economic factors such as household's MPCE, social group, religion group, family type, household type, female-headed households, number of children below 15 years of age, education of household head, access to a bank loan, education of women, age of women and employment status of women.

Some of these variables are time-invariant such as household's social group, religious group, family type, and female-headed households, and others are time-variant. All the time-variant variables are measured in the 'before' period to study how the 'increase in MPCE' of the household is affected by the conditions prevalent in the 'before' period.

Table 1: Determinants of increase in household's MPCE based on logit regression

VARIABLES	Coefficients	Marginal Effects
0. Family-type (Joint)		
1. Family-type (Nuclear)	0.560 (0.407)	0.0758 (0.0560)
0. HH-type-B (Casual labour)		
1. HH-type-B (Wage/salary earnings)	0.132 (0.448)	0.0192 (0.0654)
2. HH-type-B (Self-employed)	1.038** (0.460)	0.135** (0.0624)

0.Social-group (SC/ST)		
1.Social-group (OBC)	0.321 (0.356)	0.0408 (0.0445)
2.Social-group (others)	-0.0373 (0.407)	-0.00496 (0.0541)
0.Religion (Islam)		
1.Religion (others)	-0.367 (0.509)	-0.0462 (0.0613)
Age-women-B	0.0837*** (0.0252)	0.0109*** (0.00305)
Education-head-B	0.149** (0.0663)	0.0195** (0.00858)
0.Male-headed-HH		
1.Female-headed-HH	0.812* (0.479)	0.0995* (0.0537)
5.MPCE-quintile-B		
1.MPCE-quintile-B	1.977*** (0.714)	0.263*** (0.0888)
2.MPCE-quintile-B	1.357** (0.566)	0.195** (0.0799)
3.MPCE-quintile-B	1.508*** (0.529)	0.213*** (0.0744)
4.MPCE-quintile-B	0.348 (0.446)	0.0546 (0.0696)
0.Access-bank-loan (Never tried bank loan)		
1.Access-bank-loan (Bank loan tried and received)	-	-
2.Access-bank-loan (Bank loan tried but rejected)	1.614** (0.823)	0.170*** (0.0619)
Age-less than 15-B	0.0150 (0.169)	0.00195 (0.0221)
0.TC-code (control-group)		
1.TC-code (treatment-group)	1.947*** (0.317)	0.286*** (0.0433)
0.women- employment-type-B(unemployed)		
1.women- employment-type-B(employed)	-0.0995 (0.331)	-0.0130 (0.0431)
Education-women-B	0.0573 (0.0758)	0.00747 (0.00985)
Constant	-5.636*** (1.309)	
Observations	354	354

Source: Author’s calculation (primary data). Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, B implies ‘before’ period, MPCE quintiles are arranged in decreasing order, 5th quintile being the highest and 1st quintile being the lowest, 5= Reference category for MPCE quintile and 0= Reference category for all other

Results furnished in Table 1 show that the ‘increase in MPCE’ of (all) households are affected by TC-code, household type, age of women, education of household’s head, female-headed households, household’s MPCE in ‘before’ period, and access to a bank loan.

The coefficient of TC-code is positive and statistically significant, indicating that for households in the treatment group, the probability of an increase in MPCE is around 29 percent higher than that of the control group. Thus, access to loans from MFIs results in a higher

increase in MPCE. It is consistent with other studies (Pitt and Khandker, 1998; Khandker 2005; Saad and Duasa 2011; Li et al., 2011b) which reported a positive effect of MFI programmes on household consumption expenditure. The result conforms to the hypothesis that other things remaining constant, an increase in the consumption expenditure after MFI's loans is larger for HHs in the treatment group compared to those in the control group.

The coefficient of the age of women is positive and statistically significant, indicating that with every additional year of women's age (or experience), the probability of an increase in MPCE improves by 1.09 percent. The plausible explanation for this is that with age, women become more experienced, have wider social relations, and become wiser enough to explore better avenues of utilizing MFI's loans that raise the MPCE of the household. The result is consistent with the findings of many other studies. Saad & Duasa (2011) found a positive correlation between age and per capita level of income. Tedeschi (2008), stated that after availing microcredit, the age of borrowers has positive and significant influences on HH's consumption expenditure. Older women, by using their experience and social capital, tend to invest their loan amount in avenues, that generate better returns, resulting in an increase in HH's welfare level (Khandker et al., 1998; Li, et al., 2011b, Kumar et al., 2012). This translates into higher income and consumption.

A positive and significant coefficient of the variable- education level of HH's head implies that with an additional year of education of the household's head, the probability of an increase in MPCE improves by approximately 2 percent. Education of the household's head plays an important role in awareness of opportunities for investment and better decision-making capacity, thereby adding to MPCE.

The coefficient of female-headed-HH is positive and statistically significant, implying that female-headed households have approximately 10 percent higher probability of an increase in MPCE. According to Padia (2005) "microfinance programmes are considered as an important approach to poverty alleviation and enhancement of living standards, particularly of women", therefore, female-headed households are expected to have a higher participation level in MFI as well as increased welfare outcome compared to male-headed households.

The coefficient of HH-type-B (2-Self-employed), is positive and statistically significant, implying that the self-employed households have a 13.5 percent higher probability of an increase in MPCE compared to the casual labour households. However, the coefficient of 'wages and salaried' households is insignificant, implying they are not likely to have any increase in MPCE over the casual labour households. Microfinance enables an individual to start their business enterprises (Crepton et al., 2011; Augsburg

et al., 2015). The self-employed use the loan for productive purposes (Microfinance India, 2006; Kumari, 2017), resulting in higher income and increased consumption expenditure.

The coefficient of Access-bank-loan (2-bank loan tried but rejected) is positive and statistically significant, implying that the household who applied for a bank loan but whose loan application was rejected, has a 17 percent higher probability of an increase in their MPCE as compared to those households who never applied for any bank loan. It implies that households who did not get a bank loan probably joined MFIs, and as a result of their access to MFI's loans, have a higher increase in their MPCE.

Another important variable that influences the 'increase in MPCE' of the household is their MPCE in the 'before' period. The positive and significant coefficients of MPCE-quintile-B show that households in the lower three quintiles are more likely to have an increase in MPCE compared to the households in the highest (fifth) quintile. Households in the first, second, and third quintiles have a higher probability (by 26 percent, 20 percent, and 21 percent respectively) of increase in MPCE, compared to households in the fifth quintile. This is consistent with the idea that the poor household's dependence on informal sources of credit reduces after associating with MFIs, which implies lower interest payments than before (Coleman, 2006). That households belonging to lower quintiles are more likely to take loans from MFI and have a higher probability of an increase in their MPCE, we can conclude that MFI loans have a positive impact on increasing the MPCE of poor households.

V. CONCLUSION

This paper aimed to evaluate the impact of MFI's loans on the welfare of households in the Union Capital Territory of India - Delhi. The analysis is based on the primary data obtained from a survey of 368 households (grouped as T-group and C-group) in Delhi Slum areas in 2016. To evaluate the impact of MFI's loans on an 'increase in MPCE' of all households (both in the T-group and C-group), a logit regression method is used.

The empirical results show that the age of women, education level of the household's head, household's occupational category, access to bank loans, female-headed households, household's MPCE in the 'before' period, and access to MFI's loans (TC-code) determine an increase in the MPCE. The probability of an increase in the MPCE of the households in the T-group (with access to MFI's loan) is found to be 29 percent higher than those in the C-group (without access to MFI's loan). Further, female-headed households have a higher probability of an increase in MPCE than male-headed households, and those

belonging to self-employed households have a higher probability of an increase in MPCE as compared to the casual-labor household. The level of education of the household's head and the age of a women respondent have positively influenced HH's MPCE. Also, the households whose loan applications were rejected by the bank, have a higher probability of an increase in their MPCE as compared to the households who never applied for a bank loan. HHs in the lower (first, second, and third) quintiles have a higher probability of an increase in MPCE compared to those in the highest (fifth) quintile.

These results accept the postulated hypotheses and substantiate the existing literature that other things being constant, an increase in the consumption expenditure after MFI's loans is larger for HHs in the 'treatment group' as compared to those in the 'control group'. By providing access to credit to low-income households, MFIs create opportunities for self-employment, facilitate the expansion of existing businesses, and positively impact their welfare levels.

REFERENCES

- [1] Aghion, D. A. & Morduch, J. (2000). *Microfinance beyond group lending, economics of transition*. Available at: Papers. SSRN. com/sol3/papers. cfm.
- [2] Armendáriz, Beatriz, Aghion & Jonathan, Morduch. (2005). The economics of microfinance. *Economic Record*, 82, 491–92.
- [3] Augsburg, B., De Haas, R., Harmgart, H. & Meghir, C. (2015). The impacts of microcredit: Evidence from Bosnia and Herzegovina. *American Economic Journal: Applied Economics*, 7(1), 183-203.
- [4] Banerjee, A., Duflo, E., Glennerster, R. & Kinnan, C. (2015). The miracle of microfinance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, 7(1), 22-53.
- [5] Coleman, B. E. (1999). The impact of group lending in Northeast Thailand. *Journal of Development Economics*, 60(1), 105-141.
- [6] Coleman, B. E. (2006). Microfinance in Northeast Thailand: Who benefits and how much?. *World Development*, 34(9), 1612-1638.
- [7] Crépon, B., Devoto, F., Duflo, E., & Parienté, W. (2011). Impact of microcredit in rural areas of Morocco: Evidence from a randomized evaluation. *MIT Working Paper*.
- [8] Crépon, B., Devoto, F., Duflo, E. & Parienté, W. (2015). Estimating the impact of microcredit on those who take it up: Evidence from a randomized experiment in Morocco. *American Economic Journal: Applied Economics*, 7(1), 123-50.
- [9] Fattah, S. (2014). *The effect of microcredit on standards of living in Bangladesh*.
- [10] Hossain, M. (1984). Credit for the rural poor, the experience of Grameen Bank in Bangladesh. *Research Monograph No. 4, BIDS, Dhaka*.
- [11] Hulme, D. (2000). Impact assessment methodologies for microfinance: Theory, experience and better practice. *World Development*, 28(1), 79-98.
- [12] Hulme, D. & Mosley, P. (1996). *Finance against poverty (2)*. Psychology Press.
- [13] Khandker, S. (1998). *Fighting poverty with microcredit: Experience from Bangladesh*. New York: Oxford University Press for the World Bank.
- [14] Khandker, S. R. (2005). Microfinance and poverty: Evidence using panel data from Bangladesh. *The World Bank Economic Review*, 19(2), 263-286.
- [15] Kumar, V.S., Sahad, T.A. & Karuppiah, M. (2012). SHGs: Micro-Finance strategy in empowering rural women. *Southern Economist*, 49(7), 47-51.
- [16] Kumari, U. (2017). Role of microfinance in promoting financial inclusion in urban poor of Kolkata. *International Journal of Management, IT and Engineering*, 7(2), 193-201.
- [17] Li, X., Gan, C. & Hu, B., (2011). The welfare impact of microcredit on rural households in China. *The Journal of Socio-Economics*, 40(4), 404-411.
- [18] Microfinance India Publication. (2006). A promise to pay the bearer, an exploration of the potential for urban microfinance in India.
- [19] Morduch, J. (1998). Does microfinance really help the poor? New evidence from flagship programs in Bangladesh. *Research Program in Development Studies, Woodrow School of Public and International Affairs*.
- [20] Padia, V. (2005). Social mobilization and micro-credit for women's empowerment: A study of the DHAN foundation. Micro-credit, poverty, and empowerment. *Linking the triad, Sage Publications India Pvt. Ltd., New Delhi*, 161-199.
- [21] Pitt, M. M. & Khandker, S. R. (1998). The impact of group-based credit programs on poor households in Bangladesh: Does the gender of participants matter? *Journal of Political Economy*, 106(5), 958-996.
- [22] Puhazhendi, V. & Badatya, K. C. (2002, November). SHG-Bank linkage programme for rural poor—an impact assessment. *In seminar on*

- SHG bank linkage programme at New Delhi, micro Credit Innovations Department, Nabard, Mumbai.*
- [23] Saad, N. M. & Duasa, J. (2011). An economic impact assessment of a microcredit program in Malaysia: The case of Amanah Ikhtiar Malaysia (AIM). *International Journal of Business & Society*, 12(1).
- [24] Samer, A.A.S., Majid, I.A., Rizal, S., & Muhamad, M.R. (2015). The Impact of Microfinance on Poverty Reduction: Empirical Evidence from Malaysian Perspective. *Procedia - Social and Behavioral Sciences* 195, 721-728.
- [25] Shastri, R. K. (2009). Microfinance and poverty reduction in India (A comparative study with Asian Countries). *African Journal of Business Management*, 3(4), 136-140.
- [26] Singh, J. P. (2006). *PEDO's SHG programme impact assessment: A draft report*. Jaipur: Centre for Microfinance.
- [27] Tedeschi, G. A. (2008). Overcoming selection bias in microcredit impact assessments: a case study in Peru. *The Journal of Development Studies*, 44(4), 504-518.
- [28] Tenaw, S., & Islam, K. Z. (2009). Rural financial services and effects of microfinance on agricultural productivity and on poverty. *University of Helsinki Department of Economics and Management (Discussion Papers Series)*, 1, 28.
- [29] Yahaya, K. A., & Osemene, O. F. (2011). Effectiveness of microfinance banks in alleviating poverty in Kwara State Nigeria. *Global Journal of Management and Business Research*, 11(4).