Micro-Enterprises Development for Poverty Alleviation

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Micro-credit Support Effect among Micro-Entrepreneurs in Nepal:[1] A Case Study of Micro-Enterprise Development Programme

Abstract

The role of micro-credit in poverty reduction has been highly emphasized globally. In Nepal too, micro-credit programme is implemented with a priority. Inadequate access to finance has been a major problem for micro-entrepreneurs to start a new enterprise or to scale up the existing enterprises. This study was carried out to get insight into this problem by assessing the effects of micro-credit support on enterprise development in MEDEP. This study has used micro-enterprise data generated by MEDEP in Sindhupalchok district during 2005-08. Hence, the analysis of impact was limited to two years' data. In any micro-credit programme, poverty reduction is ensured once the micro-enterprise starts hiring outsiders (non-family members) to run its operation. Against this backdrop, this study has analysed sales, profit, employment and production costs as the indicators to assess the effects of micro-credit by using Propensity Score Matching (PSM) technique.

In such analyses, the impact of agriculture and livestock could not be captured properly as the data allowed the analysis of "after one year" and "after two years" scenarios only, whereas the impact is realised in longer than two years' period. The conclusion of this study is that micro-credit has positive effect on enterprise level in terms of income generation, employment creation and savings, and positive but mixed effects on the entrepreneur level in terms of enhanced self-esteem, control over resources and community participation. Despite some problems that need to be addressed, MEDEP is found as a better anti-poverty model in Nepal at the moment. As per its commitment, the Government of Nepal (GoN) should expand this model nationwide.

1. Introduction

1.1 Background to the Study

In any anti-poverty-targeted programme, the role of micro-credit has been highly emphasized over the years. As the results have remained mixed (Bardhan, 1996), there is no consensus on its impact. Studies have unveiled that wealthier borrowers have often been benefited from the credit subsidies meant for the poor. The claimed success of Grameen Bank has also been doubted as over-advertised (Islam, 2007). In Nepal too, micro-credit has remained a major tool for poverty alleviation for the last four decades, trying out various micro-credit models including Micro-Enterprise

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Development Programme (MEDEP). Unlike other models, MEDEP facilitates to provide micro-credit along with entrepreneurial training, skill training, market linkages and technical backstopping for the purpose of enterprise development as an important basis for off-farm employment (Bhandari and Tamang, 1999). The MEDEP model is acclaimed as one of the best models that Nepal has ever adopted. However, the micro-credit component of the model has witnessed a number of problems, especially after state-owned Agricultural Development Bank, Nepal (ADB/N) stopped providing loans to MEDEP-supported micro-entrepreneurs in 2004 (MEDEP, 2009).

1.2 Statement of the Problem

Ensuring easy access to finance for poor and disadvantaged groups has always been a challenge in Nepal in most of the development projects, especially in anti-poverty programmes. So is the case with MEDEP as well. In spite of the utmost efforts and innovations of MEDEP to expand financial services to the target group, only 61 percent of MEDEP-supported micro-entrepreneurs have access to credit. The access is very low in case of Dalit (11%), indigenous communities (23%) and women (43%). Therefore, either complete absence or inadequate access to finance has been a major problem for micro-entrepreneurs to start a new enterprise or to scale up the enterprises in MEDEP (Pun et al, 2010). In order to get insight into this problem, a detailed study to explore micro-credit effects and its contribution to poverty reduction in MEDEP has been felt necessary.

1.3 Objectives of the Study

The major objective of the research was to assess the effects of micro-credit support on enterprise development for poverty reduction among MEDEP-supported micro-entrepreneurs. The specific objectives were to:

- assess the effect of micro-credit on sales, cost and profit of entrepreneurs in their enterprise activities;
- analyze the effect of micro-credit on the enterprise level; and
- explore the effect of micro-credit on micro-entrepreneurs at the personal level.

2. Literature Review

2.1 Overview of Micro-credit

The vicious cycle of poverty is the reality of poor people in the developing countries. Their subsistence production, rules out any saving to invest in future production. Women are further vulnerable as they generally have even less access than men to formal credit markets (Coleman, 1999). Against this backdrop, microfinance has long been considered as an effective and powerful tool for poverty reduction (Morduch and Haley, 2002; Halimana and Zwizwai, 2004). The development of the microfinance sector is based on the belief that the poor possess the capacity to implement income-generating activities and it is limited by a lack of access and inadequate provisions through saving, credit and insurance facilities (Hulme and Mosley, 1996). Micro-credit made available to small enterprises has become a cornerstone of economic

development efforts around the world (Morduch, 1999). High repayment rates, salutary effects on poverty and inequality, and positive roles in fostering job creation and economic growth are some of the reasons (claims) to justify the prominent role of micro-credit programs as a major tool of poverty alleviation (Qayyum and Ahmad, 2006; Morduch and Haley, 2002).

2.2 Impact on Employment, Income and Poverty

Micro-credit provisions were found to have positive impact on employment creation (Hossain, 1988; Mosley, 1996). However, this increase was more for family labour. Because of limited technological change there is a limited impact on paid employment (Hulme and Mosley, 1996). In countries where self-employment is prestigious, micro-credit programme is thus becoming popular (Islam, 2007). Increased capacity utilization, diversification of goods or services sold, and lower cost of supplies and raw materials were reasons cited for the positive impact of microfinance on enterprise income (Sebastad and Chen, 1995). Micro-credit through a Grameen Bank Model was found to increase household income by 29 percent (Khandker, 1996) and such incomes were found pushing up total family consumption (Islam, 2007), thereby improving family health, children's education and leisure. Regarding impact on overall poverty reduction, there are controversial views. The ability of micro-credit in reducing vulnerability of the poor by establishing their own micro-enterprises and to increase their net wealth is well documented. Inherent characteristics of micro-credit are that it caters only the short-term need of the poor by providing short-term financial services. The MFIs have yet to develop long-term financial services to the poor as a long-term measure for poverty alleviation (Almeyda, 1996 as cited in Islam, 2007). Morduch (1998) argues that short-term financial services help smooth consumption without contributing to poverty alleviation. Even if credit can be an important source of income for the poor through the establishment of micro-enterprises, no single source of income can uplift the poor out of poverty (Hulme and Mosley, 1996). Micro-credits can be a necessary but not a sufficient condition for micro-enterprise promotion. Other inputs namely, training, market linkages, social mobilization, networking, etc. are urgent. MEDEP has well considered this fact and has tried to link micro-enterprise development with micro-entrepreneurs' demand, availability of raw materials, markets and skill development training.

2.3 Review of MEDEP and Its Micro-credit Linking Activity

MEDEP is the most widely acclaimed anti-poverty programme in Nepal. It is a multi-partnership effort between state institutions (especially local government) and the private sector to promote micro-enterprises. It is a unique programme in the sense that it develops sustainable micro-enterprises for low-income families as a means to reduce poverty; helps in capacity building and development of service delivery mechanism to promote micro-enterprises. Moreover, it is based on the programme's strategic approach to inter-link and coordinate local resources, low-income people's interest and entrepreneurs' access to local and national markets (backward and forward linkages).

Micro-credit is one of the most important components of MEDEP. Since MEDEP itself is not providing micro-credit to micro-entrepreneurs, it has built partnerships with (i) the private sector, (ii) the MFIs and (iii) the commercial banks to link the micro-entrepreneurs with their credit services. Micro-credit under the arrangement of MEDEP has targeted poor and vulnerable people, especially Women, Dalits and Janajati who lack skills and capital to start an enterprise. MEDEP has successfully managed to provide credit to those people living on the edge of poverty who are considered as unbankable by the commercial banks. Moreover, credit component of the programme focuses not only on credit, but also on other financial services like group savings where a group works as a guarantor to receive credit without collateral (MEDEP, 2000).

3. Research Methodology

3.1 Conceptual Framework

Based on literatures (Hulme 2000; Sebstad et al, 1995; Chen and Dunn 1996; and Gulli 1998), this study has developed a suitable model to assess the effects of micro-credit support for micro-enterprise development in MEDEP. The constituents of the model are: *factors determining demand and supply of micro-credit; micro-credit; circular flow of micro-credit along with other physical and human resources; and flow back of income, knowledge, and skills to resources of an entrepreneur; (iv) effect/impact on the enterprise and entrepreneurs' levels; and (v) poverty reduction.* As shown in the model, poverty reduction is ensured once the micro-enterprise starts hiring outsiders (non-family members) to run its operation.

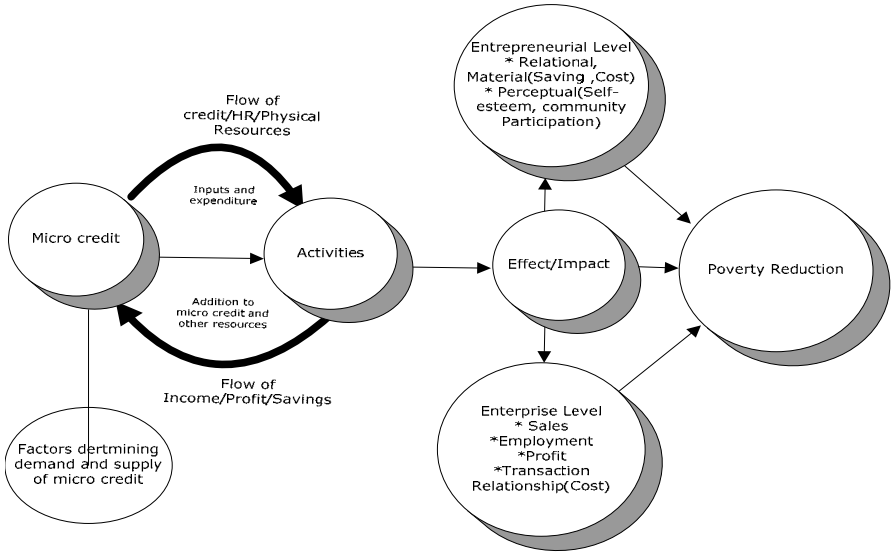

Figure 1: Micro-credit support effect assessment model

3.2 Analytical Framework

Based on the conceptual framework and the objectives to be captured, this study has considered sales, profit, employment and input purchasing (production cost) as the indicators to be analysed to assess micro-credit effect on the enterprise level. The unit of these variables was Rupees (Rs). The nominal values of these variables were converted into real value by using a Gross Domestic Product (GDP) deflator.

On the other hand, control over resources, self-esteem and leverage in decision-making are considered as indicators to evaluate micro-credit effect on the entrepreneur level. Indicators presented here do not represent an exhaustive list to explain the micro-credit effect on the basis of the framework presented. The representative indicators, however, were developed on the basis of available data of MEDEP for the research purpose and various estimations done in the research.

Based on methodological issues and programmes for PSM estimation elaborated by Rosenbaum and Rubin (1983); Becker and Ichino (2002); Dehejia and Wahba (2002); and Smith and Todd (2005) in their studies; the PSM techniques have been used for this research. By using this modern tool, efforts have been made in this study to compare the factual and counterfactual situations. The PSM requires fulfilment of two assumptions namely (i) the Conditional Independent Assumption (CIA) and (ii) the Common Support Assumption (CSA). According to the CIA, conditioned on the observable characteristics (X variables) of possible participants, the decision for participation in the programme should be independent of the outcome measures, written as:

$$(y_0, y_1) \perp T|X \quad (1)$$

Where Y_0 denotes independence, Y_1 means the outcome of the supported firm (outcome in the treated state) and Y_0 denotes the outcome of the unsupported firm (outcome in the untreated state). T is an indicator variable denoting participation (treatment) in the programme and X are observable variables.

CSA implies that the probability of participation in the programme for programme group (treated) and comparison group (non-treated) should lie in the same domain. When above two assumptions are satisfied and when a sufficient number of observable variables related to the characteristics of participants in a programme exists, it is theoretically possible to obtain an unbiased estimation of the effect of a programme (Diaz and Handa, 2004; Oh et al, 2009).

Propensity score is defined by Rosenbaum and Rubin (1983) as the conditional probability of receiving a treatment (to participate in a programme) given (when observable characteristics of applicants are given) pre-treatment characteristics (observables) (Backer and Ichino, 2002). In other words, it is a conditional probability of applicants to participate in a programme when observable characteristics of applicants are given (Oh et al 2009).

$$\text{Propensity Score} = P = P(X) = Pr\,(T = 1|X) = E\,(T|X) \quad (2)$$

where, T= (0, 1) is the indicator of exposure to treatment and X is the multidimensional vector of pre-treatment characteristics. Rosenbaum and Rubin (1983) have proved the following two lemmas under the CIA and the CSA (Oh et al, 2009):

Lemma 1: Balancing Hypothesis (balancing the pre-treatment variables given the propensity score)

If P(X) is the propensity score, then;

$$\mathbf{T \perp X|(X)} \quad (3)$$

This implies that given a specific probability of having access to micro-credit, a vector of household characteristics is orthogonal to the access to micro-credit. In other words, for a specific propensity score, the micro-credit is randomly distributed and thus on average those micro-entrepreneurs who borrowed micro-credit and those without are observationally identical (given a propensity score). Otherwise, one cannot statistically match entrepreneurs of different categories.

Lemma 2: Unconfoundness given the propensity score

If treatment (whether a household has access to an MFI) is unconfounded under the CIA and Lemma 1, then the conditional independent result extends to the use of the propensity score as:

$$\mathbf{(y_0, y_1) \perp T|P(X)} \quad (4)$$

The equation (4) shows that assignment to the treatment is unconfounded given the propensity score. Based on the above lemmas, for a population of units denoted by i, we can define the policy impact, which is defined as the difference between real (treated) and counterfactual (controlled) outcomes, as the average effect of treatment on the treated (ATT) as follows:

$$\begin{aligned} \mathbf{ATT} &= \mathbf{E\{Y_{1i} - Y_{0i}|T_i = 1\}} \\ &= \mathbf{E\{(Y_{1i} - Y_{0i}|T_i = 1, P(X_i))\}} \\ \underline{\mathbf{CIA}} \quad & \mathbf{E\, P(X_i)\{E(Y_{1i}|T_i = 1, P(X_i)) - E(Y_{0i}|T_i = O, P(X_i))|T_i = 1\}} \end{aligned} \quad (5)$$

where; the outer expectation is taken over the distribution of $P(X_i)$ in the population of participants, Ti =1. If $\mathbf{T \perp X|P(X)}$ is satisfied, observation with the same propensity score must have the same distribution of observable (unobservable) characteristics independent of treatment status. In other words, for a given propensity score, exposure to treatment is random and therefore, treated and control units should be on average observationally identical (Becker and Ichino, 2002). Referring to our case, it implies that given a propensity score the observed characteristics (covariates) are uncorrelated to the access to the microfinance services. If the above lemmas are satisfied, the policy effect can be estimated (Becker and Ichino, 2002; Smith and Todd, 2005; Dehejia and Wahba, 2002). For this, the propensity score is estimated and the balancing hypothesis (Lemma 1-equation 3) is tested using the balancing test, according to the iterative algorithm suggested by Dehejia and Wahba (2002) and Becker and Ichino (2002).

3.3 The Data

This study has used unpublished secondary data generated by MEDEP on micro-entrepreneurs in one of its programme districts – Sindhupalchok. The data was extracted from the MIS of MEDEP. Of the total 1,717 micro-entrepreneurs supported during 2005 to 2008, there were 925 in the comparison group and 792 in the treated group. The entrepreneurs are separated as the ones who borrowed from the microfinance institutions (treated) and others who have not but are still operating their enterprises (comparison group). The data set is further separated into two different scenarios: (i) after one year; and (ii) after two years. The micro-credit borrowed date is considered as a cut-off point to determine the category mentioned above. In the first category, those borrowers are included who borrowed credit either in 2005, 2006 or 2007 and the effect is observed one year later of their borrowings. In the second category, those entrepreneurs were included who borrowed either in 2005 or 2006 and the effect was assessed two years later. Those borrowers who have borrowed only one cycle of micro-credit from the MFIs were included.

In addition, qualitative (exploratory) research methodology has also been used by interviewing 35 MEDEP-supported micro-entrepreneurs in order to supplement information needed to better explain the results received through the PSM estimation.

As constrained by data, this study has used data for two scenarios - after one year and after two years. Whereas, some of the agriculture- and livestock-related and manufacturing enterprises could take even more time to generate micro-credit effects. Such effects are not captured in this study.

4. Results and Discussions

4.1 Propensity Score Estimation Results

The probit results showed that savings, secondary education, chairperson dummy, member dummy, Hindu dummy, Dalits dummy, and service-related micro-enterprise dummy have significant impact on micro-credit borrowing. The number of years of education, intermediate education, age of enterprise, and women dummy were not contributing to the micro-entrepreneurs in borrowing micro-credit. The negatively significant coefficient of the number of years of education and positively significant coefficient of Dalits and Hindus imply that illiterate Dalit Hindu micro-entrepreneurs tended to borrow micro-credit. The insignificant value of the rural dummy shows that despite the fact that the major objective of MEDEP is to serve the people of rural areas; in reality they were not benefited. Actually the beneficiaries were in urban or urban-oriented rural areas. It also indicates that the MFIs had not been successful to reach to the real poor living in rural areas of Sindhupalchok district. Negative but significant value of the women dummy shows that in rural households in Sindhupalchok males were more likely to borrow micro-credit for micro-enterprise development. This has also been justified by MEDEP's (2010) finding that women have less access to micro-credit in comparison to men. Negative but significant value of coefficient for

age of an entrepreneur signifies that micro-entrepreneurs needed more micro-credit in the initial phase of establishment of micro-enterprises than in the later stages.

Therefore, the older the enterprise, the lesser is the borrowing of micro-credit. The positively significant coefficient of saving indicates that it is one of the best determining factors to participate in MEDEP and borrow credit to carry micro-enterprises. The positive and significant value of the chairperson of a MEG implies that a MEG chairman had high probability of borrowing micro-credit. The probit regression value also shows that there was a high probability that Dalits borrowed micro-credit either to establish or to run micro-enterprises. The positive and significant value of service-related micro-enterprises imply that there is a high probability of borrowing micro-credit by those entrepreneurs who were running service-related enterprises.

4.2 Micro-credit Support Effect Estimation Results

On the basis of the probit model, the propensity score for each category of effect (i.e., after one year and after two years) was estimated. In order to estimate average effect of treatment on the treated accurately, the treated micro-enterprises and micro-enterprises in a comparison group were matched on the basis of the computed propensity score. The results were as follows:

Micro-credit support effect after one year

The positively significant coefficients on sales and cost after one year of borrowing shows that borrowers were performing better in terms of sales and cost. The negatively significant coefficient of profit after one year of borrowing implies that after one year there was no positive effect of micro-credit support on profit.

Micro-credit support effect after two years

The significant ATT value for profit presents the fact that borrowers were able to make profit after two years. If one analyzes the sales, cost and profit values for treated and untreated groups, he/she can infer that sales and profit of the treated group were much bigger than those of untreated. The larger value of cost for treated group, in comparison to untreated, shows that the entrepreneurs were still trying to expand their production by investing more. Smaller sales value for treated after two years in comparison to after one year implies that sales performance is not as good as in the first year. Weaker performance of sales may entail prolonged market outlet problems and a failure of producers to establish networking with the traders. As a consequence, MEDEP entrepreneurs do not have systematic established linkages with the markets. In addition, a quite good numbers of entrepreneurs have to rely on external markets for their products as local markets consume only 50 percent of the entrepreneurs' production (MEDEP, 2010).

5. Micro-credit Effect

At the Enterprise Level: The value of sales in the treated group was higher than that of the untreated group. However, the value in the treated group was lower in the after

two year scenario indicating a fluctuation in the business. The cost was also higher in the treated group as compared to untreated group. The cost was declining in the after two years results indicating a better scenario for making profit. On the employment front, most of the enterprises were owner-operated. Yet, in agricultural economy where 80 percent people rely on the agriculture sector for their employment, micro-enterprises can be an important source of generating, at least self-employment.

At the Entrepreneur Level: The positive and statistically significant coefficient of ATT indicates that micro-entrepreneurs were doing well from the perspective of savings. It is because more profit is likely to have more saving. More savings bring confidence and self-esteem among entrepreneurs. The participation in MEG and holding important position there has helped to develop confidence among entrepreneurs and since this is a leadership position in the community holding such positions increased the sense of self-esteem as well.

Poverty Reduction: Based on the nature of the data available to this research and the results obtained it was hard to conclude that micro-credit reduced poverty in just a period of two years. Yet, the positive value for profit and the positive and bigger value for the sales for treated indicate that micro-credit has contributed to reducing poverty.

6. Conclusions and Recommendations

6.1 Conclusions

On the whole, this study has concluded that micro-credit had positive effect on the enterprise level in terms of income generation, employment creation and savings and positive but mixed results on the entrepreneur level in terms of enhanced self-esteem, control over resources and community participation. This conclusion has been supported by the findings of the qualitative research (interview) as well. However, the supply of micro-credit, institutional development support, human resource development on the part of borrowers, rural infrastructure, etc. were found inadequate. It is believed that micro-credit would have done much better, if those problems had been sorted out. The conclusion of this study is that there cannot be any anti-poverty model in Nepal better than MEDEP at the moment. Therefore, the Nepalese government should be committed to its target of expanding the coverage of MEDEP nationwide. The need, however, is to sort out problems and issues and addresses them in an effective way. In this regard, the credit component of MEDEP needs to have a more focused agenda of MEDEP in the pretext that Nepal has a target of expanding the coverage of MEDEP across Nepal within two years.

6.2 Recommendations

In order to sustain the reputation of MEDEP as one of the most successful anti-poverty programmes in Nepal, the said issues need to be seriously addressed. While doing so, care should be taken by not adopting a conventional approach of a "credit alone" strategy. It entails that uninterrupted and regular support services like training,

technical backstopping, business counselling, market survey should go hand in hand with micro-credit support. Most importantly, there is a need to have an overhauling in in-service delivery arrangement under MEDEP. In this regard, MEGAs, DMEGAs and BDSPOs can have a paramount role to enhance access to financial services to micro-entrepreneurs. However, they have not been able to do so thus far. In this regard, this research has proposed six-pronged strategies as follows: i) intensive human resource development of entrepreneurs; (ii) enhanced support services to the entrepreneurs; (iii) reform in the microfinance delivery system; (iv) sustainability of the achievement made so far; (v) regional development; and (vi) making participation of women qualitative.

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