

Micro-Enterprises and Household Income

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ABSTRACT

This study assesses the role of micro-enterprises in rural poverty reduction and reveals many facts concerning the role of micro-enterprises and some socio-economic and demographic factors in rural poverty reduction in Parbat district. The study has observed a positive role of micro-enterprises in the household income consequently reducing the rural poverty. It has also found that the size of economically active population in the family and secondary or higher level of education of the principal earner of the households also have positive influence in the household income.

Key words: micro-enterprise, household income

MICRO-ENTERPRISE DEVELOPMENT is also one of the most popular poverty reduction strategies in contemporary development discourses. Micro-enterprises are very small and family-based (with regard to investment) enterprises. These are also called small scale businesses. These are generally originated within the home. Most of these have one employee i.e. the owner himself/herself. Basically the micro-enterprises are of two types: formal and informal micro-enterprises. Informal enterprises are generally initiated by an individual family to earn money using their traditional craft skills, whereas formal enterprises are initiated by NGOs and government agencies as an income generating programme for poor families. Formal enterprises are, to some extent, backed by training, funds, technology, business counseling, market linkage, etc.

From the World Bank to the tiniest local nongovernmental organizations, development interventions have embraced micro-entrepreneurs as the key to unlocking the potential of stagnant economies and improving the livelihood of the poor. Micro-enterprises are expected to provide employment and thus sustainable incomes (Mann, 2002). Micro-enterprises are also expected to provide lower-cost goods and services to poor people (Kirkpatrick and Hulme, 2001). Micro-enterprise focuses on the assets of the poor, rather than on their deficits, and strives to empower citizens to become economically self-sustained. Unlike other poverty reduction programmes that tend to create paternalistic relationships between the economically disadvantaged and those providing assistance, the goal of micro-enterprise is to empower citizens to become economically self-dependent. The popularity of micro-enterprises has been growing across the globe as a new form of development agenda of poverty reduction strategy and even more so in the developing world, because such enterprises offer income and employment opportunities.

However, there are some arguments that the impacts of the micro-enterprises are not in the same way as it was purported to be. For example, a study by Ehlers and Main (1998) in USA argue that micro-enterprise development is more detrimental and problematic than it is purported to be. Schreiner (1999) claims in the line that the absolute increase in the number of people who would start small firms if they had access to micro-enterprise programmes is probably about 1 per 100 for the unemployed. This thesis was also confirmed by Dreze (1990) in a study on IRDP in the state of UP India (Sarangi, 2007: op. cit.). Similarly, Servon (1996); and Sherraden, Sanders, and Sherraden (1998); have the same

version that only few poor people will use self-employment to escape from poverty (Schreiner 2001: op. cit.). Eversole (2003) argues that due to the lack of the resources and the constraints they face, many micro-enterprises are poor, undercapitalized and inefficient.

Moreover, the effect of micro-enterprises is also influenced by the socio-economic, demographic factors in the particular context. Hulme (1990); Taub (1998); and Bhatt and Tang (1998) have suggested that the success of the micro-enterprises depends on the context of the country as well (Schreiner, 2001: op. cit.). Gennrich (2002) in his study entitled "The Impacts of Micro-enterprises on Poverty Reduction in Rural Area: The Case of El Quiche - Guatemala" argues that the impact of the micro-enterprise are related to education, social capital, farm characteristics and the access to markets.

In case of Nepal, a number of anti-poverty policies and programmes have been launched during the 1990s including micro-entrepreneur development. Government of Nepal in its Ninth Five Year Plan (1999-2003) gave high priority to the promotion of self-employment opportunities in the informal sector. The plan focuses on poor segments of the community. The objective of the plan was to provide support to the people living in absolute poverty to create self-employment opportunities through micro-enterprise establishment and development. During the plan period, although there was no specific definition of micro-enterprises in Nepal, the government of Nepal, with especial financial and technical supports of the United Nations Development Programme (UNDP), initiated many types of micro-enterprises from July 1998 as a tool to support the poverty reduction efforts in 10 districts where Parbat, the study area, is also one of these districts. However, in the second phase it has been extended to 20 districts. The main objective of establishing micro-enterprises is to address the poverty through the development of micro-enterprises among the low-income families that are identified as those living on or below the poverty line¹.

1. Key Variables

Household Income: The household income includes the average annual income of the micro-entrepreneurs (non-micro-entrepreneurs) earned from various sources of income such as micro-enterprises, agriculture, service, pension, foreign job, daily wage/labour, etc., in the study area. Apart from the several definitions and indicators of poverty, this study accounts only income domain as the proxy measure of poverty. The changes in the income of the micro-entrepreneur/household indicate the direction of poverty

Micro-enterprises: Micro-enterprises in this study are defined as the formal micro-enterprises that have been initiated and supported by government and United Nations Development Programme (UNDP) since its first phase of Micro-Enterprise Development Programme (MEDEP) in the district. Micro-enterprise (Case/Experimental group) in the model is included as a dummy variable where the households not running micro-enterprises (Control Group) which were surveyed in the 1996 by the government to identify the targeted beneficiaries of the Micro-Enterprise Development Programme are the reference category.

Sex: It includes the sex (male/female) of the principal earner of the households of micro-entrepreneurs (non-micro-entrepreneurs) in the study area.

¹ The people below the poverty line in Nepal have been defined as those people with a per capita income of less than NRs. 5,750 equivalent to US \$ 84 (inflation adjusted to 1999) in the year 1996 (NPC, 1996; Pun, 2000: op. cit).

Caste/Ethnicity: It includes the caste/ethnicity of the micro-entrepreneurs (non-micro-entrepreneurs) in the study area which is categorized in the three groups: Dalit, Janajaties and Others. Dalit includes: Kami, Sarki and Damai; Janajaties includes: Gurung and Magar; and Others include: Brahamin, Chhetri, Thakuri, Giripuri, and Newar.

Agricultural Landholdings: It includes the total agricultural landholdings of the households of the micro-entrepreneurs (non-micro-entrepreneurs) in the study area. It is measured in Ropanies.

Economically Active Population: It includes all the members of the family who participate in the economic activities and contribute in the income of the household of micro-entrepreneurs (non-micro-entrepreneurs) in the study area.

Education: It includes the education of the principal earner of the households of the micro-entrepreneurs (non-micro-entrepreneurs) in the study area which is categorized in the four groups: Illiterate, Literate, Lower Secondary Level and Secondary or higher.

2. Data and Methodology

This study examines the changes in income of the households running micro-enterprises (experimental group) and the households not running micro-enterprises (control group) in the study area. Therefore, this is a Quasi-Experimental Research Design. This study is based on the primary data. The primary data was collected with the help of the semi-structured questionnaire schedule from the respondents. Direct personal interview method was applied to administer questionnaire. The data have been analyzed in two methods: Descriptive and Inferential analysis. Descriptive analysis includes formulation of cross tabulation, frequency distribution and percentage. Inferential analysis includes multiple regression analysis, computation of beta coefficients, and testing of the hypotheses. The alternative hypotheses of interest are:

- H1:1 :** Micro-enterprises have significant impact on increasing the household income.
- H1:2 :** Male principal earners of the households are likely to earn more income
- H1:3 :** Caste/Ethnicity has an effective influence in the household income
- H1:4 :** Agricultural landholdings have a positive relation to household income
- H1:5 :** The households having large number of economically active populations are likely to earn more income
- H1:6 :** Education of principal earner has a positive effect in the household income.

Multiple Regression was run with the help of the SPSS software to see the net effect of the micro-enterprises and the influence of the intervening socio-economic and demographic variables.

3. Models of the Study

The following models are run in order to test the effect of the predictor variables included in the research framework. Because of the variables with different nature, Multiple Regression with dummy variables is applied in this study. Some categorical variables are converted into dummy variables and added to the basic regression equation. With the introduction of each successive variable, the equation holds additional predictor.

Model Description	
Model No.	Model
Model 1:	$\hat{Y} = \hat{\beta}_o + \hat{\beta}_{iMES} + \hat{\varepsilon}$
Model 2:	$\hat{Y} = \hat{\beta}_o + \hat{\beta}_{iMES} D_{iMES} + \hat{\beta}_{iMAL} D_{iMAL} + \hat{\varepsilon}$
Model 3:	$\hat{Y} = \hat{\beta}_o + \hat{\beta}_{iMES} D_{iMES} + \hat{\beta}_{iJAN} D_{iJAN} + \hat{\beta}_{iOTH} D_{iOTH} + \hat{\varepsilon}$
Model 4:	$\hat{Y} = \hat{\beta}_o + \hat{\beta}_{iMES} D_{iMES} + \hat{\beta}_{iMAL} D_{iMAL} + \hat{\beta}_{iJAN} D_{iJAN} + \hat{\beta}_{iOTH} D_{iOTH} + \hat{\beta}_{iAGL} X_{iAGL} + \hat{\varepsilon}$
Model 5:	$\hat{Y} = \hat{\beta}_o + \hat{\beta}_{iMES} D_{iMES} + \hat{\beta}_{iMAL} D_{iMAL} + \hat{\beta}_{iOTH} D_{iOTH} + \hat{\beta}_{iAGL} X_{iAGL} + \hat{\beta}_{iECO} X_{iECO} + \hat{\varepsilon}$
Model 6:	$\hat{Y} = \hat{\beta}_o + \hat{\beta}_{iMES} D_{iMES} + \hat{\beta}_{iGEN} D_{iGEN} + \hat{\beta}_{iJAN} D_{iJAN} + \hat{\beta}_{iOTH} D_{iOTH} + \hat{\beta}_{iAGL} X_{iAGL} + \hat{\beta}_{iECO} D_{iECO} + \hat{\beta}_{iLIT} D_{iLIT} + \hat{\beta}_{iLSW} D_{iLSW} + \hat{\beta}_{iSCA} D_{iSCA} + \hat{\varepsilon}$

\hat{Y} = average annual household income, D_{iMES} = micro-enterprises dummy, D_{iMAL} = Male dummy, D_{iJAN} = Janajaties dummy, D_{iOTH} = Others (non-janajaties or non-dalits) dummy, X_{iAGL} = Agricultural landholdings, X_{iECO} = Economically Active Population, D_{iLIT} = Literate dummy, D_{iLSW} = Lower Secondary dummy, D_{iSCA} = Secondary or higher level of education dummy, and ε_i = random error term.

The variable D_{iMES} is the variable of major interest for this study; therefore, it is inserted in the model first. The households not involved in micro-enterprises are omitted from category which serves as the reference category for D_{iMES} . A new dummy variable of sex of the principal earner of the household (D_{iMAL}) representing male is introduced. Female being an omitted category serves as reference category for sex of principal earner of the household variable. Two additional dummy variables of caste/ethnicity (D_{iJAN} and D_{iOTH}) representing Janajaties (includes Gurung and Magar) and Others (includes Brahamin, Chhetri, Thakuri, Newar and Giripuri) respectively are introduced in the model 3. Dalits being an omitted category serves as the reference category for D_{iJAN} and D_{iOTH} . The predictor variable agricultural landholdings (D_{iAGL}) is introduced in model 4. The predictor variable economically active population in the household (D_{iECO}) is added in model 5. The final model of the study includes three dummy variables of level of education D_{iLIT} , D_{iLSW} and D_{iSCA} for literate, lower secondary and secondary or higher level of education respectively. The illiterate being an omitted category serves as the reference category for all the dummy variables for model 6.

4. Results and Discussion

Comparison of Mean Annual Income of Households: While comparing the mean annual income of micro-entrepreneurs' and non-micro-entrepreneurs' households, it is identified that the average annual household income of the micro-entrepreneurs has increased in comparison to the non-micro-entrepreneurs. The average annual income of the households of the micro-entrepreneurs has increased by around Rs. 17230.63 (significant at <0.01) comparing to the non-micro-entrepreneurs in the study area (Table 1). This gap signifies the impact of micro-enterprises. However, it is found that there is higher variability of income among micro-entrepreneurs despite their higher income.

Table 1: Average Annual Household Income Difference

Control and Experimental group	Mean income	N	Std. Deviation
Non-micro-entrepreneurs	55427.03	111	29243.883
Micro-entrepreneurs	72657.66	111	42253.240
Total	64042.34	222	37267.358

F Statistics (between groups): 12.481***

***Significant at <0.01

In the regression model, the major predictor variable (micro-enterprise) as a dummy variable is included at the first model. The change in the income coefficient is observed as a richer set of the control variables are progressively added to the models. The following table (Table 2) illustrates the model summary of this study.

Table 2: Model Summary of Multiple Regressions

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					F Change	Sig. F Change
1	.232(a)	.054	.049	36335.527	12.481	.001
2	.232(b)	.054	.045	36416.971	.017	.896
3	.257(c)	.066	.049	36347.053	1.422	.244
4	.285(d)	.081	.060	36130.896	3.604	.059
5	.317(e)	.101	.076	35831.540	4.624	.033
6	.374(f)	.140	.104	35283.964	3.242	.023

a Predictors: Micro-Enterprises

b Predictors: Micro-Enterprises, Sex of the Principal Earner

c Predictors: Micro-Enterprises, Sex of the Principal Earner, Others, Janajaties

d Predictors: Micro-Enterprises, Sex of the Principal Earner, Others, Janajaties, Agricultural Landholdings

e Predictors: Micro-Enterprises, Sex of the Principal Earner, Others, Janajaties, , Agricultural Landholdings, Economically Active Population

f Predictors: Micro-Enterprises, Sex of the Principal Earner, Others, Janajaties, Agricultural Landholdings, Economically Active Population, Literate. Lower Secondary, Secondary or Higher

The Influence of Micro-enterprise Alone: Descriptive analysis reveals the strong relation between micro-enterprises and the household income (Thapa, 2007). The regression analysis explains that the households running micro-enterprises are likely to earn larger incomes. Table 3: Model-1 explains that keeping all other variables constant, micro-enterprises contribute an average annual household income of Rs. 17,230.631 (significant at <0.01) in comparison to non-micro-enterprises. However, when the effect of the major socio-economic and demographic factors is recognized, the effect of micro-enterprises decreases to Rs. 15,114.310 (significant at <0.01). However, it remains largely unchanged which shows that the socio-economic and demographic intervening variables included in the models also do not have much influences in the micro-enterprise income. Moreover, the income from the micro-enterprises can explain around 5 percent variance in the average annual income of the households (Table 2: Model-1).

Is it Sex of Principal Earner of the Household?: Generally, males are likely to earn more

income in comparison to females counterparts. Descriptive analysis illustrates that among the micro-entrepreneurs, females are likely to earn more income which in case of non-micro-entrepreneurs is just opposite (Ibid, 2007). In regression analysis the results are not statistically significant (Table 3: Model-2). However, in this study no sufficient evidences are found to claim this assumption. Perhaps, the initiation of micro-enterprises has encouraged those females who did not have access to economic domain of the household more than their counter part already having dominance in economic domain of the household. However, the role of micro-enterprises in raising women's status can not be ignored.

Does Caste/Ethnicity of a micro-entrepreneur influence Household Income?: Generally the Janajaties and Others are likely to earn more income than Dalits. This study does not observe the sufficient evidences to claim this hypothesis. Moreover the descriptive analysis illustrates the improvement in the other castes rather than Others (Ibid, 2007). It may be because the disadvantaged groups (eg. Dalits) do not hesitate to initiate any sort of hard work which may return attractive income, whereas on the other hand due to the attitudinal problems, the so called upper castes like Others (eg. Brahamin, Chhetri, etc.) may not like such hard work. Regression analysis also illustrates when caste/ethnicity is introduced in addition to the earlier variables, Janajaties are likely to have larger average annual household income of Rs. 11284.835 (significant at <0.1) in comparison to Dalits (Table 3: Model-3). However, when other probable variables are introduced in the succeeding models, the effect of caste/ethnicity turns to be insignificant. There are also no sufficient evidences to claim that Others have higher household income than Dalits. Table 3: Model-3 tells that after the insertion of Caste/ethnicity in this model, the effect of the micro-enterprises income in the household income also remains unchanged. It indicates that there are no sufficient evidences to claim that the caste/ethnicity has significant effect on the micro-enterprise income.

Does Agricultural Landholding have positive influence in Household Income?: Descriptive analysis illustrates the positive relation of agricultural landholdings with household income (Ibid, 2007). Table 3: Model-4 shows that increase in each unit ropani of agricultural landholdings in the household contributes an average annual income of Rs. 1793.254 (significant at <0.1). However, after controlling the effect of other probable factors in the final model, the effect of the agricultural landholdings diminishes. In the final model, no sufficient evidences are observed to claim the effective influence of this factor in the household income. Table 3: Model-4 shows that after the insertion of agricultural landholdings factor, the effect of the micro-enterprises income in the household income is not significantly changed. It indicates that the agricultural landholdings do not have significant effect over the micro-enterprises income.

Does Economically Active Population correlate with Household Income?: It is obvious to say that economically active population is simply assumed to have positive correlation with household income. This study also observes that economically active population has significant influence on the household income. In the regression analysis, after the insertion of the economically active population in model five, the explanation of the variance in the household income by the model significantly increases by 1.6 percent (significant at <0.05). From this figure, we can infer that the size of the economically active population in the

family is one of the major predictors of household income. Table 3: Model-5 tells that each unit increase in the size of the economically active population in the family contributes an average annual income of Rs. 4834.780 (significant at <0.05). On the other hand, although the effect of the economically active population is significant, it does not bring significant changes in the contribution of the micro-enterprises income in the household income (Table 3: Model-5). From this, we can infer that still the micro-enterprises have significant positive effect on the household income. Table 3: Model-6 further illustrates that after controlling some other variables in the final model, it is observed that each unit increase in the size of economically active population in the family contributes an average annual income of Rs. 5775.686 (significant at <0.05). It shows that economically active population has significant effects in the household income.

Is it Education?: Generally the education is expected to have effective influence in reducing rural poverty. An interesting finding in this study is that the education below secondary level is not significantly effective. This study does not find the sufficient evidences to claim the effect of literate and lower secondary education in comparison to illiterates. Perhaps, this may be because majority of the population depend on the traditional ways of agricultural production where simply having lower secondary education may have no effect in household income in comparison to illiterates. Table 3: Model-6 shows that effects of the literate and lower secondary education level in the household income is statistically insignificant. However, the effect of the secondary or above level of education is significant. Table 3: Model 6 presents that if the principal earner of the household has Secondary or higher level of education, the average annual income of the household increases by Rs. 15063.366 (significant at <0.1) in comparison to the income of the illiterates. The effect of the secondary or higher level of education in the household income is significant even after controlling the effects of other probable factors in the model. It also concludes that secondary or above level of education have effective influence in the household income or to contribute in reducing the rural poverty. Moreover, Table 3: Model-6 further shows that even after controlling the effect of the education variable in the household income, the effect of the micro-enterprises in the household income remains largely unchanged (significant at <0.01). Hence, it justifies the role of micro-enterprises contributing in the household income is not effectively influenced by level of education.

Final Model of the Study: Model-6 (significant at <0.01) is the final model of the regression analysis, where all the socio-economic and demographic factors used in this research are included. This model can explain 10.4 percent of variance in the household income (Table 2: Model-6). The final model illustrates the effect of each factor in the model after recognizing the effects of the remaining probable factors. In the final model of the study, it is observed that only three factors: micro-enterprises (significant at <0.01), economically active population (significant at <0.05) and secondary or higher level of education (significant at <0.1) are the major predictors of the household income. Final model also shows that even after controlling the effect of all the socio-economic and demographic factors selected in the research framework, the significant effect of the micro-enterprise income in the household income remained largely unchanged (Rs. 15114.310, significant at <0.01). It shows that the micro-enterprises have positive role in the raising the income of household.

The following table (Table 3) illustrates more detail statistics of regression analysis obtained in the study.

Table 3: Multiple Regression Statistics (a)

Predictor Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Unstd. Coefficient	Std Error	Unstd. Coefficient	Std Error	Unstd. Coefficient	Std Error	Unstd. Coefficient	Std Error	Unstd. Coefficient	Std Error	Unstd. Coefficient	Std Error
(Constant)	55427.027	3448.816	55824.660	4605.877	49337.882	6389.528	45149.070	6723.850	38709.176	7309.756	37147.545	8731.657
Non-Micro-enterprise(r)												
Micro-enterprises	17230.631***	4877.362	17119.527***	4961.739	17443.327***	4955.958	17776.941***	4929.618	16493.901***	4925.049	15114.310***	4973.626
Female(r)												
Male -	649.077	4969.004	1242.597	5085.546	454.529	5072.317	-342.060	5043.912	-4282.583	5148.773		
Dalits(r)												
Janajaties			11284.835*	6695.491	7615.817	6930.582	8240.457	6879.295	7005.977	6814.759		
Others			5160.274	5870.914	1154.567	6205.709	3870.760	6282.576	1994.770	6348.979		
Agricultural Landholdings												
Economically Active Pop.							1793.254*	944.576	738.545	1057.384	86.687	1064.373
Illiterate(r)									4834.780**	2248.311	5775.686**	2255.133
Literate											-4029.432	7583.643
Lower Secondary											11201.168	7381.053
Secondary or Higher											15063.366*	8227.896
Adjusted R2	0.049***		0.045***		0.049***		0.060***		0.076***		0.104***	

a Dependent Variable: Average Annual Household Income

Ⓜ Reference category.

*** Significant at <0.01

** Significant at <0.05

*Significant at <0.1

5. Conclusion

This study has established the positive relationship between the micro-enterprises and the average annual household income in the study area. Since the main objective of micro-enterprises is to raise the income of the poor households and thereby reducing poverty, from this study it can be concluded that the micro-enterprises have significant contribution in reducing poverty in Parbat district. However, sex of the principal earners of the household, caste/ethnicity, agricultural landholdings and the education of principal earner below secondary level do not have significant influences in the household income. This study claims that the economically active members in the family do have significant role in raising the household income. The study suggests that the government should focus on developing policies to extend micro-enterprises and to provide secondary or higher level education to raise the income level of the rural people.

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