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Economic Returns To Primary, Secondary, And Tertiary Education : A Case Study Of Ilam Municipality of Eastern Nepal

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INTRODUCTION

While education is an end objective of human development, it is also a means for enhancing the level of utility at both the individual and collective levels. Education provides economic, political and cultural returns to an individual as well as the society. Economic returns to education, in particular, is important for the development of any country (NSAC 1998).

Psacharopoulos (1985, 1994) has summarized the results from more than 55 studies on returns to education in Africa, Asia, and Latin America. These summaries present a consistent pattern of very large returns to primary education and somewhat smaller returns to secondary and post secondary education and have stated that the average private rate of return to primary education in developing countries is 29 percent, while the returns to secondary and post-secondary education are 18 and 20 percent, respectively.

Knowing the imprtance of human capital to national development, HMG/N has spectacularly risen educational expenditure over the past 40 years of plan development. Now the country is investing nearly 3 percent of its GDP on education sector, its contribution to social and economic development must be critically reviewed occasionally.

Investigation on economic returns to education for Nepal is relatively limited. Some empirical studies on the returns to education in Nepal show that significant relationship exist between education and agricultural productivity, female education and health and education and population control. Further, controlling other variables, literacy leads to mild but significant, (3-5 percent), increase in the productivity of wheat and rice (Sharma 1997).

Few studies so far carried out previously on this ground would be less relevant by now. Since up to date knowledge on returns to education is of crucial importance for policy makers; this study carried out in Ilam municipality of eastern Nepal would be good guideline for this purpose.

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METHODOLOGY

Selection Of Study Area

Ilam Municipality has been purposively selected as study area for this study. This Municipality is higher, 52 percent, literate in educational standard in Ilam and people of this municipality are performing different occupations. It is also easily accessible.

The study area is located approximately 600-1600 meters above mean sea level and covers 2700 hectares of total land area. Among the total land area 13.77 hactares are residence area, 1293.5 hactares agricultural land and the remaining is forest and pasture. Socially, Brahmin/Chhetri, 47.47 percent, Newar, 12.41 percent, Tamang/Sherpa, 11.64 percent, Rai, 6.38, Limbu, 5.77 percent and other occupational castes reside in this area.

Natura And Source Of Data

This study is based on primary data. Field survey was conducted to collect primary data in December, 2000. All necessary input-output data were collected in physical units of meaurenment at first hand with the help of pre-developed questionnaire, then these has been converted into value terms.

Sampling Procedure And Sample Size

Systematic random sampling has been used to select sample households. The total number of 2756 households of the Ilam Municipality area have been taken as the population for this study and household as sampling unit. First total number of households of municipality area are written serially from tax register of the municipality office. From this sampling frame, every 15^{th} household have been selected for a sample household. Thus a total of 175 households have been surveyed for this study. From the survey of 175 households, eithteen households are not included in this analysis because of incomplete information. The other 28 households are not included because of illiteracy of household head. Therefore, analysis covers only 129 sample households in this study.

Method Of Analysis

To find out the returns to Primary education, secondary education and tertiary education, three log-linear production functions have been estimated by ordinary least square (OLS) method. The production function has been given below:

$$Y = f(A, L, W, X, n) \quad \ldots\ldots (1)$$

Where,

Y = log value of total household income,

A = log value of farm and off-farm fixed inputs,

L = log of number of household labour supplied by a household,

W = log of years of work experience,

X = log value of farm and off-farm variable inputs, and

n = log of years of schooling.

Measurement Of The Variables

The included variables in the method of analysis and their measurement are as follows:

Dependent Variable

Total Household Income

The total household income is the aggregate of all farm and off-farm income in Rupees received by a household during a year.

Independent Variables

The Years Of Schooling

The years of schooling is included in the model as an independent variable. Respondents who can read and write with understanding and performs simple arithmetic calculation (3R) is given five score for the elasticity of primary education. The reason behind the five score is HMG/N, Ministry of Edcatuion has clearly stated that main objective of primay education is to make people literate. It requires five years of schooling to complete primary education. Then for the returns to secondary education maximum of 10 score is given for every additional year of schooling. The years of schooling greater than 10 is regarded as tertiary education in this study.

Years Of Work Experience

It is the experience of respondent in his/her profession. A farmer who is taking farming occupation since birth and continues in farming 10 scores is subtracted in his age for farm work experience. Because he/she helps in farming in Nepalese economy after 10 years. For other occupations it is the years of taking that occupations by the respondent.

Number Of Household Labour Supplied

In farm household some labours are supplied from family members in agriculture. Similarly in other occupations household members are engaged in their occupation as full time workers. There are the labourers supplied by the household in their respective occupations.

Farm And Off-farm Fixed Inputs

In case of farm household, ropanies of land cultivated by farm household is taken only as a fixed input. In case of business, value of business assets divided by 15,000, average market value of land Rs. per ropani, is taken as a fixed input and in other occupations fixed input is ignored.

Farm And Off-farm Variable Inputs

It is the aggregate value of expenditure incurred by household to procure farm and off-farm variable inputs like, fertilizer, insecticide, pesticide, seed, lighting, heating, storage, transportation, and hired labourers.

RESULTS AND INTERPRETATIONS

For the elasticity of independent variables, the log-linear production function has been estimated by ordinary least square (OLS) method for three sets of data-primary education, secondary education and tertiary education from Ilam Municipality. Summary of estimated equations and relevant statistics are presented in Table 1.

Table 1
Estimated Equations And Relevant Statistics

Variables and Statistics	Primary Education	Secondary Education	Tertiary Education
Intercepts	23620.031 (2.051)*	23313.076*	24294.524 (2.078)*
Years of Schooling	0.297 (4.025)***	0.298 (4.016)***	0.286 (3.804)***
Household labour	-0.035 (-0.450)	-0.035 (0.445)	-0.025 (-0.313)
Work experience	-0.168 (-2.206)*	-0.168 (-2.195)*	-0.177 (-2.291)*
Fixed Inputs	0.249 (3.073)***	0.251 (3.072)***	0.250 (3.042)**
Variable Inputs	0.318 (3.813)***	0.314 (3.716)***	0.317 (3.727)***
F-Statistics	18.721***	18.581***	18.252***
N	71	24	34

*** Significant at all level

** Significant at 1 %

* Significant at 5 %

Figures in parentheses are "t" values.

The regression co-efficients of estimated log-linear production function in all three levels of education is significant at all level of significance with positive sign. The co-efficients are less than unity, indicates marginal return of education is decreasing. The co-fficients of primary education, secondary education and tertiary education are 0.237, 0.298, and 0.286 respectively, shows the returns to education of all three levels are more-or -less same, in contrast to Psacharopoulos because of heterogeneous nature of study area. The study area covers urban as well as rural area. In rural area people perform agriculture and allied occupations which requires low level of education. And shortage of alternative work opportunities in agriculture, their level of income is found low. In urban area people are more educated and perform different occupations and they earn more income than rural area. Due to this heterogeneous nature of study area the returns to education of all three levels is found nearly 29 percent in average. The other explanatiory variable fixed input (land holding size and business assets) is important variable. It is found significant at one percent probability level with positive signs in all levels of education. The co-efficient of household labour is found negative but insignificant and also the co-efficient of work experience is found negative and significant at five percent probabality level. The negative sign of co-efficients of household labour and work experience is due to lack of co-rrelation between these variables and household income and fluctuation of data in sampling. Therefore, these explanatory variables are not good explanatory variables of total household income in the study area. The other influential variable is farm and off-farm variable input which is significatn at all probability levels with positive sign. Thus, if we increase variable inputs, the total household income increases, holding other inputs at their geometric mean level. The values of 'f' statistics are high and significant at all probability levels and values of 't' statistics are also high in case of level of education, fixed inputs and variable inputs and significant. Therefore, there is goodness of hit between dependent and independent variables.

CONCLUSION

There is no doubt that human resources are the most important resource of any country. Therefore, HMG/N has investing nearly 3 percent of its GDP on education sector. Then its contribution to social and economic development is being studied by different sectors with keen interest.

In such a socio-economic milieu, returns to primary, secondary and tertiary education in Ilam Municipality of eastern Nepal have been found more-or-less same level of nearly 29 percent returns to all three levels of education. It is against of what Psacharopoulos found in most developing countries, i.e., very large returns to primary education and somewhat smaller returns to secondary and post secondary education. This would be due to heterogeneous (rural and urban) nature of study area and

inadequate sample size coverage in the study. Therefore, it still needs to devote more research in this field.

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