AN EMPIRICAL ANALYSIS OF THE DETERMINANTS OF OVERSEAS WORKERS INCOME IN RURAL AREA OF DISTRICT SWABI, PAKISTAN

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ABSTRACT

The main objective of this study was to analyze the determinants of income of overseas workers. For this purpose 360 respondents were randomly selected from eleven villages in District Swabi, Khyber Pakhtunkhwa, Pakistan during 2008. Results of the study clearly establish a positive and significant correlation between the level of ‘formal education’ and ‘professional training’ of emigrants with their income level abroad. The correlation between emigrants' non-formal skills with their income was negative and insignificant; thus discounting the general perceptions about the utility and adequacy of skills as a sufficient condition for good income abroad. The study recommends that formal education and professional training are important determinants in enhancing the income of overseas workers.

Key Word: Oversea’s workers, correlation, formal education, professional training

Citation: Khan, M. and M.K. Shah. 2012. An empirical analysis of the determinants of over sea’s workers income in rural area of district Swabi. Sarhad J. Agric. 28(1): 115-120

INTRODUCTION

Millions of people from various parts of the world are working in different countries for better income. International migrants increased by 14% during 1990 and 2000. In 2002, some 175 million people lived outside their home country, and this figure is projected to reach 230 million by 2050 (Ramirez et al. 2005). When migrants send home part of their income in the form of either cash or goods to support their families, these transfers are known as workers' or migrant remittances. They have been growing rapidly in the past few years and now represent the largest source of foreign income in many developing countries (Ratha, World Bank, 2003).

International income flows have grown faster than foreign direct investment (FDI) and official development aid (ODA) in the past decade, doubling in several countries and rising by 10-15% per annum over 2001-05. Their main role in some poorer regions is to increase consumption and investment, as well as to alleviate poverty, especially in the poor economies of sub-Saharan Africa and South Asia (Maimbo and Ratha, 2005). These income flows now represent the largest single source of foreign exchange in many developing countries. In 2002, remittances were larger than both official and private flows in 36 developing countries (Cattaneo, 2005). In 2004, the global remittances were US$204.5 billion, and the largest share of these global remittances (70%) was sent to the developing countries. During 2006, officially recorded flows of the world were over US$280 billion, which were equal to or more than 10% of Gross Domestic Product (GDP) in twenty-two countries; and were equal to or more than 20% of GDP in six countries (Ratha, et al. 2008).

Growing numbers of work migrants and an increase in the income flows have a profound effect on many socioeconomic, demographic and political issues (Mikhail and Lokshin 2007). International migration and remittances significantly contributed to reduction in the level, depth, and severity of poverty in the developing world (Balbo and Marconi, 2006).

Several recent studies have found that the money sent by migrants plays a vital role in the economic development of many developing economies. It can improve the country’s development prospects, maintain macroeconomic stability, mitigate the impact of adverse shock, and reduce poverty and possibly inequality. It helps families to maintain or increase expenditure on basic consumption, housing, education, health, small-businesses formation and construction activities (World Econ. Outlook, 2006). Majority of the emigrants and their families have found an exceptional opportunity to raise their standards of living and patterns of consumption (Connall, 1984, Burki, 1984).

The need of income flows from abroad are mostly felt at household level. The recipient households having larger increase in income are more likely to leave poverty status, to send their children to school, and to invest in new entrepreneurial enterprises and small business activities in the country of origin Yang and Martinez (2005); Yang (2006); Yang (2008); de Haas (2008); Woodruff and Zenteno (2007). It provides self-insurance to the recipient households during economic crises and natural disasters. These flows also provide steady employment and
livelihoods for its people at time of uncertainties. The income sent by emigrants contributes to transforming and modifying the economic base of the recipient households (Canales, 2001).

At the regional and local levels, the role of income flows does seem to be significant and, generally speaking, remittances may be said to contribute to lessening economic inequalities. International migration does not represent a drain of resources but that, on the contrary, it may even constitute a significant source of productive capital and a dynamic engine for promoting business activity, for forming businesses, stimulating job creation and for spurring economic growth, at least at the local and regional levels (Canales, 2001) (Massey and Parrado 1994) and Durand (1988).

The most significant impact of the inflow of money income from abroad is that it enhances the foreign exchange earnings of the labor sending country. The foreign exchange increasing effect of these inflows has been very vital in many developing countries, which have fiscal deficits, external debts, growing trade imbalances and little foreign direct investment (Pernia, 2006).

Thus, the workers remittances represent a key factor for the working of the economy, for achieving macroeconomic stability and for satisfying the needs of consumption of the receiving families (Lindley, 2006). A better understanding of the determinants could have substantial impact on public policy, by suggesting policy measures to enhance the income of overseas workers and increase the remittance flows and to get the maximum benefits, particularly for the overseas workers themselves and their families out of their remittances. With this aim an in-depth study was conducted to analyze the determinants of workers income abroad.

MATERIALS AND METHODS

The study’s universe comprises the villages of District Swabi, Pakistan from where men have migrated abroad for jobs in a large numbers. There are, in all, 622 villages in District Swabi, out of which 343 villages (55%) were reported to have men working abroad in varying numbers, in other countries, according to District Census of Rural Settlements (DCRS), undertaken by Planning and Development Department, Government of Khyber Pukhtukhwa Province (formerly NWFP), conducted in 1988.

The study adopted the stratified sampling approach for selection of sample respondents (Cochran, 1977). Based on the DCRS (1988), the villages were grouped into seven strata in terms of incidence of emigration from the villages. As the focus was on the villages from where emigration has taken place, the no emigration villages were left out. Stratum-VI was selected for reaching the sample villages and the sample households. As will be seen in (Table I) this stratum has 43 villages accounting for 73% of the total emigrants in the study universe.

<table>
<thead>
<tr>
<th>Stratum differentiated by number of emigrants</th>
<th>No.</th>
<th>% age</th>
<th>No.</th>
<th>% age</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-10 immigrants</td>
<td>225</td>
<td>66</td>
<td>769</td>
<td>8</td>
</tr>
<tr>
<td>11- 20 immigrants</td>
<td>41</td>
<td>12</td>
<td>612</td>
<td>7</td>
</tr>
<tr>
<td>21- 30 immigrants</td>
<td>19</td>
<td>5</td>
<td>478</td>
<td>5</td>
</tr>
<tr>
<td>31- 40 immigrants</td>
<td>10</td>
<td>3</td>
<td>348</td>
<td>4</td>
</tr>
<tr>
<td>41- 50 immigrants</td>
<td>5</td>
<td>1</td>
<td>231</td>
<td>3</td>
</tr>
<tr>
<td>&gt; 50 immigrants</td>
<td>43</td>
<td>13</td>
<td>6698</td>
<td>73</td>
</tr>
<tr>
<td>Total All Strata</td>
<td>343</td>
<td>100</td>
<td>9136</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Survey Data

After a thorough study of the characteristics of all the six strata, and in light of the time and resource availability factor, it was decided to select a stratum with the heaviest incidence of emigration, accounting for the bulk of emigrants from the study universe, and which represented the different socio-economic as well as topographic situations in the District Swabi. With these factors in the background, Stratum-VI was selected for reaching the sample villages and the sample households.

Stratum-VI was further split into six sub-strata in order to give representation to a cross section of different rural zones of Swabi, and similarly to different socio-economic situations, so as to fully capture the socio-economic impact of the phenomenon under study. The overall sample size was fixed at 11 villages, representing a little over 25% of the villages in Stratum-VI. The total sample of 11 villages was allocated to the six sub-strata purposively. Each sub-stratum was allocated a minimum of one sample village; the maximum allocation was two villages per sub-strata. In the 11 sample villages, 360 sample households of the emigrants were selected randomly for interview. These 360 sample households represented 17.55% of the emigrant’s households.
Model for Estimating Income Level

In the light of literature reviewed, major determinants of income of the emigrants are; age, education, training, skill, and experience-abroad. The above-mentioned independent variables have direct relationship with the income of emigrants. The influence of these determinants of income of emigrants was tested with an econometric model. This model can be expressed in the following mathematical form:

\[ Y_i = f (\text{Age}, \text{Education}, \text{Training}, \text{Skill}, \text{Experience Abroad}) \]

where:

- \( Y_i \) Income level of emigrant i, to be measured in Pak Rupees per year
- Age Age of emigrant to be measured in years
- Education Education of emigrant to be measured in years
- Training Training of emigrant (dummy variable is used: 1 if training from a recognized institution is taken and 0 otherwise). Training means undergoing professional training from a recognized training or vocational institution and have a certificate/diploma or degree.
- Skill Skills of emigrant (dummy variable is used: 1 if doing some skilled work abroad and 0 otherwise). Skill here implies non-degree local skills like (driving, tailoring, carpentering, painting, mechanic, technician, welder, barber, meson, plumber, electrician, blacksmith, etc.)
- Experience Duration of emigrant abroad to be measured in years

The econometric design of the above mathematical model is as follows:

\[ Y_i = \beta_0 + \beta_1 A + \beta_2 A^2 + \beta_3 \text{EE} + \beta_4 \text{Exp} + \beta_5 \text{Exp}^2 + \beta_6 \text{Trg} + \beta_7 \text{Skl} + U_i \ldots \ldots \ldots (1) \]

where:

- \( Y_i \) Income level of emigrant i, to be measured in Pak Rupees per year
- \( \beta_0 \) Intercept of the model
- \( \beta_1, \beta_2, \ldots, \beta_7 \) Are the corresponding slope co-efficients/parameters of the independent variables i.e., \( A, A^2, \text{EE}, \text{Exp}, \text{Exp}^2, \text{Trg}, \text{Skl} \)
- A Age of emigrant to be measured in years
- A\(^2\) Age Square
- EE Education of emigrant to be measured in years
- Exp Experience of emigrant abroad to be measured in nearest years
- Exp\(^2\) Experience Square
- Trg Training of emigrant (dummy variable is used: 1 if training from a recognized institution is taken and 0 otherwise)
- Skl Skills of emigrant (dummy variable is used: 1 if doing some skilled work abroad and 0 otherwise)
- \( U_i \) Disturbance or error term is a random (stochastic) variable. It represents all those factors that affect the dependent variable \( Y \) but are not taken into account (Gujarati, 1995)

RESULTS AND DISCUSSION

Results of the estimation of empirical model used for the analysis of the determinants of yearly income of overseas workers are.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Estimated Coefficient</th>
<th>Standard Error</th>
<th>t-Ratio, df =352</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>9448.50</td>
<td>5264</td>
<td>1.795</td>
<td>.074</td>
</tr>
<tr>
<td>Age Square</td>
<td>-103.55</td>
<td>70.23</td>
<td>-1.474</td>
<td>0.141</td>
</tr>
<tr>
<td>Experience</td>
<td>12761</td>
<td>2956</td>
<td>4.317</td>
<td>0.000</td>
</tr>
<tr>
<td>Experience Square</td>
<td>-66.639</td>
<td>90.69</td>
<td>-0.7348</td>
<td>0.463</td>
</tr>
<tr>
<td>Education</td>
<td>9241.3</td>
<td>1648</td>
<td>5.606</td>
<td>0.000</td>
</tr>
<tr>
<td>Training</td>
<td>0.11955E+05</td>
<td>0.2119E+05</td>
<td>5.642</td>
<td>0.000</td>
</tr>
<tr>
<td>Skill</td>
<td>16332</td>
<td>0.1459E+05</td>
<td>1.120</td>
<td>0.264</td>
</tr>
<tr>
<td>Constant</td>
<td>18915</td>
<td>0.9531E+05</td>
<td>0.1985</td>
<td>0.843</td>
</tr>
</tbody>
</table>

\( R^2 = 0.3972; \quad R^2_{adj} = 0.3853; \quad F\)-ratio = 33.1

Source: Survey Data
Results of age and experience were positive and results of experience were significant at 1% level of significance whereas age was significant at 10% level of significance. Parameters of Age Square and Experience Square are negative which reveal that the relation of age and experience when squared was non-linear and insignificant to emigrant’s income. It means that these variables become less relevant to the model. On the basis of this we can claim that the relation of age and experience were linearly related to emigrant’s earnings. The ‘Education’ and ‘Training’ were significant at P<0.000, while ‘Skill’ was non-significant contributor.

Following the nested model approach we dropped the most insignificant variables i.e. Skill, Exp$^2$ and Age$^2$ one by one so that we can get a model that gives the best fit for the related set of variables. Results of these models are presented below:

**Results of the Model without Experience Square**

Dropping the contribution of the square of experience from model, the model estimated is as follow:

\[ Y_i = \beta_0 + \beta_1 A + \beta_2 A^2 + \beta_3 EE + \beta_4 Exp + \beta_5 Trg + \beta_6 Skl + U_i \]  

Results regarding the determinants of yearly income of the emigrants (without square of the experience) are displayed in (Table III). It was observed that regression results improved in terms of significance for the remaining variables as evident from their t-values as well as in terms of the overall model fit, evident from the improved value of F-statistic. The effect of Age becomes significant at 1% level of significance after removing the effect of the square of experience. Results of the Age$^2$ have also improved and it is significant at 10% level of significance. Thus, our initial interpretation of linear relation of age with income does not hold. Results of the rest of the variables showed improvement with the exception of variable Skill, which is still insignificant. In order to get the best-fitted model it is suggested to drop the insignificant variable i.e. Skill and then run the regression analysis for obtaining the required objectives.

<table>
<thead>
<tr>
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<th>Standard Error</th>
<th>t-Ratio, df =352</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>11033</td>
<td>4799</td>
<td>2.299</td>
<td>0.022</td>
</tr>
<tr>
<td>Age$^2$</td>
<td>-124.33</td>
<td>64.25</td>
<td>-1.935</td>
<td>0.054</td>
</tr>
<tr>
<td>Experience</td>
<td>10905</td>
<td>1534</td>
<td>7.110</td>
<td>0.000</td>
</tr>
<tr>
<td>Education</td>
<td>9150.4</td>
<td>1643</td>
<td>5.571</td>
<td>0.000</td>
</tr>
<tr>
<td>Training</td>
<td>0.11891E+05</td>
<td>0.2116E+05</td>
<td>5.621</td>
<td>0.000</td>
</tr>
<tr>
<td>Skill</td>
<td>15817</td>
<td>0.1456E+05</td>
<td>1.086</td>
<td>0.278</td>
</tr>
<tr>
<td>Constant</td>
<td>-69.538</td>
<td>0.9168E+05</td>
<td>-0.7585E-03</td>
<td>0.999</td>
</tr>
</tbody>
</table>

\[ R^2 = 0.3943; \quad R^2_{adj} = 0.3857; \quad F-ratio = 46.090 \]

Source: Survey Data

**Results of the Model without Skill**

After removing the independent variable “Skill”, the model becomes as below:

\[ Y_i = \beta_0 + \beta_1 A + \beta_2 A^2 + \beta_3 EE + \beta_4 Trg + \beta_5 Exp + U_i \]  

Table IV indicates the results regarding the determinants of yearly income of the emigrants (with-out skill). It is evident that regression results improved still further in terms of significance for the remaining variables. Though R-square remains unchanged but that is a usual. When the number of variables in a model decreases the R-square results deteriorate a bit. However, the value of R-square is still acceptable at all standards for cross sectional data. It can be seen that all the variables in the model are significant at 1% level of significance (P < 0.01).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Estimated Coefficient</th>
<th>Standard Error</th>
<th>t-Ratio, df =352</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>11549</td>
<td>4777</td>
<td>2.418</td>
<td>0.016</td>
</tr>
<tr>
<td>Age$^2$</td>
<td>-131.77</td>
<td>63.90</td>
<td>-2.062</td>
<td>0.040</td>
</tr>
<tr>
<td>Experience</td>
<td>11239</td>
<td>1503</td>
<td>7.477</td>
<td>0.000</td>
</tr>
<tr>
<td>Education</td>
<td>9113.4</td>
<td>1643</td>
<td>5.548</td>
<td>0.000</td>
</tr>
<tr>
<td>Training</td>
<td>0.12752E+05</td>
<td>0.1962E+05</td>
<td>6.499</td>
<td>0.000</td>
</tr>
<tr>
<td>Constant</td>
<td>-3208.5</td>
<td>0.9166E+05</td>
<td>-0.3500E-01</td>
<td>0.972</td>
</tr>
</tbody>
</table>

\[ R^2 = 0.3943; \quad R^2_{adj} = 0.3857; \quad F-ratio = 46.090 \]

Source: Survey Data
Interpretation of the Model

The F-statistic is highly significant i.e. 46.09, which means that the model as a whole is significant. In other words, it tells that the R-square is significantly different from zero. The R-square value is 0.3943, which means that 39.43% variation in the dependent variable Income of Emigrants is explained by variation in the independent variables included in the model, which is acceptable by all standards. R-Square Adjusted measures the proportion of the variance in the dependent variable that was explained by variations in the independent variables. In this case, the R-Square Adjusted shows that 0.3857% of the variance in the dependent variable is explained by the independent variable. The findings of the individual explanatory variables are interpreted one by one in the following paragraphs.

Age is positively related with the income of emigrants, which means that the senior lot earns more than their younger counterparts. Income of the emigrants increases by Rs. 11549/- per annum with an increase of one year in age. The P-values and t-statistic reveal significance of the coefficient and the result can be accepted with 99% confidence. The negative sign of Age-Square, however, reveals that the relationships cease to exist beyond a certain age. The magnitude of the coefficient of Age-Square however, very low, which means that the decline of income with age is low or at least income cease to increase with increase in age. One reason of this relationship can also be that the aged emigrants may not get well-paid jobs and the young one may lack experience to be paid well. In other way, one who is in their prime age may be earning more.

Experience is positively correlated with the income of the emigrants. Its P-value and t-ratio are highly significant and results can be accepted at 99% confidence interval. Regression results reveal that Income of the emigrants increase by Rs. 11239/- per annum with one-year experience. Education is also a positive and significant contributor to the Income of the Emigrants. The results reveal that income of emigrants increases by Rs. 9,113/- with one additional year of the level of education.

Training is also a positive and significant contributor to the earning of emigrants. Value of the coefficient of Training i.e. Rs.12,752/-, indicates that it is the most contributing factor. Variable Training was represented with the help of dummy variable, where 1 indicates that an emigrant holds some professional or technical degree/diploma etc. from a professional or technical institute in some trade or profession. Most of the emigrants of the sample area were employed on jobs of their professional knowledge. It was because of the policy of emigration where firms of foreign countries prefer to hire workers for professional and technical jobs having some professional knowledge of the field. This is why training was the most contributing variable.

The variable Skill turned out to be an insignificant contributor. However, while interpreting the results of this study it should be cared that the variable Skill indicates the capability of an emigrant to a job that requires some special skill i.e., driving, painting, meson, electrician, etc. It is analyzed with the help of dummy variable where it was taken as 1 for those who were doing some skillful job while in Pakistan or were capable of doing a job required skill. The insignificance of skill indicates that most of the people are not employed on jobs that they were doing in Pakistan.

CONCLUSION AND RECOMMENDATIONS

The study found that formal Education, professional Training and Experience are significant contributing determinants to the income of overseas workers. Age is also positively related with the income of emigrants, which means that the senior lot earns more than their younger counterparts. An important finding of the study is that ‘Skill’ was non-significant contributor. This implies that any informal/local skill of the worker is of no importance abroad. The study recommends that formal education and professional training, proper counseling and guiding can facilitate migration and enhance the earnings of the migrants.

REFERENCES


