

THE RATE OF RETURN TO EDUCATION IN MALAYSIAN SERVICE SECTORS

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ABSTRACT

The purpose of this study is to examine the rate of return for education amongst workers in service sectors (banking, insurance and financial institution) with 300 respondents were selected in Kuala Lumpur Area. This study used Mincer function and used variable years of schooling (s) and working experience (EXP) as a main variable to influence rate of return in labour market. Besides that, these research also using demography variables like location and race. The findings showed, years of schooling (S) and working experience (EXP) are significant with the rate of return on education, where increase in one year of schooling and experience working increased rate of return 0.062 percent and 0.046 percent. These result is parallel with Mincer function (1974), where increase in one years of schooling and experience working will increase rate of return for workers. The results also show that, both location and Malay are significant with the rate of return of 0.173 percent and 0.193 percent. However for Chinese, it is not significant and has negative relationships with the rate of return of 0.154 percent. The all result of this research was used SPSS package and E-views programme. The research analysis showed, years of schooling are very important in influencing the individual returns.

Key Words: The rate of return, years of schooling, working experience

INTRODUCTION

Since achieving independence in 1957, Malaysia has been facing numerous changes towards fine tuning and modernizing its national education system. Today, our nation once again is facing another challenge from the internal and external forces as a result of globalization, liberalization and development of information and communication technology (ICT). One of the challenges is to build one economic system based on knowledge or k-economy to equip our nation in order to compete with other nations. Changes in the system requiring support from other sectors such as the education sector that has been the most important element to fulfil our nation's agenda.

To further fulfil the national agenda of being a fully developed country while producing diversified experts work force. Malaysia has allocated and invested huge amount of money in the educational sector and other sectors. From the budget 2014, government was distributed the development expenditure is RM46.5 billion, a sum of RM29 billion is allocated to the economic sector, RM10.5 billion is allocated to the social sector for education and training, health, welfare, housing and community development. In addition, RM3.9 billion is allocated to the security sector. The balance of RM1.1 billion is for general administration and RM2 billion for contingencies. Based on that figure, we can see that, government spent more to education expenditure and during the 1994-2010 periods, there was a substantial increase in the educational funding. In 1994, the amount allocated for education was RM8.955 million, while the number continues to grow to RM50.195 million in 2010. This statement is also supported by Psacharopoulos (1985) and Blaug (1968), who believe that investments in education would generate profits, thus contributing to wealth to the nation. Besides that, Mincer (1974) found out that higher educational qualification is the main role in determining higher returns. Many researchers have examined the relationship between the rates of return with years of schooling and working experience using Mincer Function (1974). Most of these results are consistent with Mincer Function. (David, (1980); Bloug D.M (1986), Demetriades and Psacharopoulos (1994) Siphambe (2000) Mock and Patrinos (2003).

The objective of this paper is to investigate the relationship between the education achievements and the rate of return using Mincer Function (1974) in service sectors such insurance, banking and finance institution. Furthermore, this paper will provide a new evidence of returns by using the latest data sets and used the method of Ordinary Least Squares (OLS). This method is increasingly important in the literature because it also reduces the potential bias. Furthermore, it has never been applied to the Malaysian data. Besides that, this paper also can give true picture in the rate of return to education in service sectors.

The rest of the paper is organized as follows. Section 2 reviews the related literature. Section 3 explains the empirical model, method estimation and data used in the analysis. Section 4 reports and discusses the econometric results. The final section summarizes and concludes.

A BRIEF OF LITERATURE REVIEW

Many researchers have examined the relationship between the rates of return with years of schooling (educational achievements), working experience and other factors using Mincer Function (1974). Most of these results are consistent with Mincer Function. For example, David (1980), found positive relationship between the earning returns and the educational level with used the Malaysian Family Life Survey data after 1975, and the human capital model data. Besides that, other information such as age, education level, race, experience and family background were also examined. The results obtained showed that the increase in years of schooling and education will increase the earnings level, in which for the Malays are 14.24 percent, the Chinese 13.87 percent and the Indians 13.50 percent. It was found that the 'experience' variable does have influence on the earnings received by an individual.

Bloug D.M (1986) found the positive impact of education on work salary using Mincer rate of return by taking several factors into account. The results of research and a detailed analysis of the labour market indicate a positive return from attainment of education at an individual level, and they strengthen the hypothesis about a correlation among higher education attainment, higher employment levels and welfare.

Demetriades and Psacharopoulos (1994) examined the years of schooling with earnings in Cyprus, whereby the information for this research was obtained from the survey done in 1984 with 1,249 respondents selected out of 5,429 individuals. In this research, Mincerian earnings function was used and the result obtained showed that the increase in one year of schooling will increase an individual's earnings at approximately 11 % earnings.

Cholesas and Tsakloglou (1994) conducted a research pertaining to the relationship between private earnings and education in Greece during the early 1960s to the early 1990s by using questionnaires and the Household Budget Survey (HBS). Almost all the surveyed studies estimated used simple Mincerian functions using OLS. The result showed positive significant relationship between years of schooling and the income received by an individual. For secondary education level result was 0.008 and for higher education was 0.158 at the significant level of 5 percent. However for the experience factor, it was less influential as a determinant of income level.

Johson. N.E and Chow G.C (1997), estimated the rate of return to schooling in china using Mincer Equation. They found, the rate of return to schooling in China using Mincer Equation. They found the rate of return to schooling was estimated at 4.02 per cent in the rural areas and 3.29 per cent in the urban areas. The rate of return to schooling for females was significantly higher than for males in urban areas.

Another study by Siphambe (2000) conducted a research regarding the rate of returns on education and working experience in Botswana by using questionnaires and the Mincer earnings function. The obtained results illustrated that the received returns and the educational levels differs from each individual. The returns received by individuals with higher education was between US\$ 1699 per year and graduate students received earnings of US\$2504. Both of the variables were significant in relations to the rate of returns at 0.16 and 0.067 represents the significant level of 1 percent.

Bijorklund and Kyellsstron (2002) analysed the rates of marginal returns on education and experience in Sweden by using the Living Survey data from 1968 until 1991, by utilising Mincer earnings function. The obtained results showed that the rates of marginal returns for college education expressed a decrease in 1981 at approximately 4.2 as compared in 1968 at approximately 8.9. However, the rate of marginal returns for high school was stable for both of the respective years at approximately 5.3 to 5.4. As for experience, working experience was very sensitive and significant to the rates of return, with a significant level of 1 percent.

Mock and Patrinos (2003) examined the relationship between the earnings and education returns in Czech by using of Mincer earnings function, where 2300 respondents were selected as sample by using questionnaires in 1998. The obtained results showed that the rate of returns for post-graduate education and college graduates were averaged at 13 percent and 11 percent. As for gender, the rate of returns for women was higher at 12 percent as to compare to the rate of returns for men at only 10 percent.

Chung (2003) in his research analysed that earnings returns on education in Malaysia by using of the Household Earnings Investigation data (1997) and the Mincer function as the main method in his research. There were 171,792 respondents selected. The result showed that earnings returns from education is higher and have positive relationship with higher education especially at the pre-university education. It was evident from the marginal returns at approximately 14.1 for the middle education level and at 16.4 for the higher education level. From the gender aspects, the marginal return for men was 12.0, for the middle education level and 18.1 for the higher education level. However for women, the marginal return for the middle education level was approximately 15.7 and for the higher education was at 16.4 percent.

Other studies estimated the returns to education using MFLS 1 and 2. It was conducted by the government during 1976-79 (MFLS1) in Peninsular Malaysia. The sample consisted of 1,262 households. The data of earnings and occupational histories of the women, and the data for their husbands included in survey. Blau (1986), Gallup (1997) and Chung (2004) estimated the rate of return to education using these data. However, the results of their studies were inconsistent, probably because their objectives and methods were different. The average rate of return to an additional year of schooling education reported by Gallup was 7.6 percent. On the other hand, Blau and Chung did not report the overall return. Chung (2004) has estimated that the marginal returns to education were 12 percent for lower secondary, 17 percent for upper secondary, 26 percent and 17 percent for pre-university and higher education respectively.

Qian zhengmig and yi yingying (2009), used CHNS data to estimate the rate of return on education in China during 1989 to 2006 based on Mincer wages function. They apply parametric and semiparametric methods to estimate the models and further compare these two models using the Hausman test. The results indicate that the former is more efficient than the latter from the perspective of estimation efficiency, but it is opposite from the perspective of estimation accuracy. In other words, the latter is a consistent estimator while the former is a biased one. Moreover, despite the fact that the rate of return on education trends toward a gradual increase, it is still much lower than the rate of return on capital in kind. Both the education market and the labor market in China need substantial investments and substantive reforms

Trostel.A.P (2005), estimated the marginal rates of return to investment in schooling in 12 countries. The result showed that, the marginal rate of return is increasing significantly at low levels of education, and decreasing significantly at high levels of education. This may help explain why estimates of the return to schooling are often considerably higher when instrumenting for education

Junsen Zhang, Yaohui Zhao, Albert Park and Xiaoqing Song (2005) provided the estimation of the returns to schooling in urban China over an extended period of economic reforms. They found a dramatic increase in the returns to education, from only 4.0 percent per year of schooling in 1988 to 10.2 percent in 2001. Most of the rise in the returns to education occurred after 1992 and reflected an increase in the wage premium for higher education. The rise is observed within groups defined by sex, work experience, region, and ownership, and is robust to the inclusion of different control variables.

Besides that, Monazza Aslam, Faisal Barib and Geeta Kingdon (2012). They investigate the economic outcomes of education for wage earners in Pakistan. This paper seeks to adjudicate between these theories using data from a unique purpose designed survey of more than 1000 households in Pakistan, collected in 2007. This is done by analysing the relationship between schooling, cognitive skills and ability, on the one hand, and economic activity, occupation, sectoral choice and earnings, on the other. They found positive relationship between the rates of return with schooling

METHODOLOGY

Sample

A cross section data used in this research was specifically obtained through interviews and questionnaires on workers in the services sector banking, financial institutions and insurance. Study on 300 respondents through a series of interview and questionnaire was selected in Kuala Lumpur. Respondents chosen came from various educational backgrounds and hold various positions comprising 10% managers, 40% assistant managers and officers, and 50% clerical and administrative assistants in that sectors. Several variables were used in this research such as annual gross income (RM), number of years schooling (S), working experience (EXP), race and location. Prior to conducting the research, a pilot test was taken to evaluate responses from queries provided in the form of questionnaires. Information gathered and collected were analysed using the SPSS package (Statistic Package For Sosial Science) and *Eviews* 5.1 programme.

Model Specification

To examine the relationship between the rate of return for workers' education in the banking, insurance and financial sectors, this research also used Mincer's model on income's function (1974). Generally, income function is stated as:

$$Y = f(S, EXP, D_1, D_2, D_3)$$

Where,

$$Y = \text{Income}$$

S	=	Years of Schooling
EXP	=	Working Experience
D_1	=	Malay Race Variables
D_2	=	Chinese Race Variables
D_3	=	Location Variables

Creation of Semi Log Income Model

$$Y = \beta_0 e^{\beta_1 S + \beta_2 EXP + \beta_3 D_1 + \beta_4 D_2 + \beta_5 D_3 + U}$$

$$\ln Y = \ln \beta_0 + \beta_1 S + \beta_2 EXP + \beta_3 D_1 + \beta_4 D_2 + \beta_5 D_3 + U$$

Where:

$\ln Y$	=	Annual Gross Income (RM)
S	=	Number of Years Schooling (Years)
EXP	=	Experience (Age - Years of Schooling)
D_1	=	Malay Race Variables (1 = Malay, 0 = Others)
D_2	=	Chinese Race Variables (1 = Chinese, 0 = Others)
D_3	=	Location Variables (1 = City, 0 = Others)
β_1	=	Coefficient Value Rate of Return for Additional Years of Schooling
β_2	=	Coefficient Value Rate of Return for Working Experience
β_3	=	Coefficient Value Rate of Return for Malay Race
β_4	=	Coefficient Value for Rate of Return for Chinese Race
β_5	=	Coefficient Value for Rate of Return for Location
U_t	=	Margin of Error Term

Estimation Function for Human Capital Income (Mincer, 1974)

Human Capital Income Function relatively had direct relationship with education. At education year = 0, annual income of individual = Y_0 . Investment in one-year education will give a rate of return r_1 . This is shown in equation (1.3) as follow:

$$r_1 = \frac{Y_1 - Y_0}{Y_0} \quad (1.3)$$

Based on equation (1.3.), this function can be derived such as Y_1 referred to annual income received after one year of education and is constant during this period.

$$Y_1 = Y_0 (1 + r_1) \quad (1.4)$$

If an individual makes an investment in the second year of education, the rate of return would be:

$$r_2 = \frac{Y_2 - Y_1}{Y_1} \quad (1.5)$$

Following equation (1.5) above, annual income could be modified to become:

$$\begin{aligned} Y_2 &= Y_1 (1 + r_2) \\ &= Y_0 (1 + r_1) (1 + r_2) \end{aligned} \quad (1.6)$$

Based on equation (1.6), annual income after (S) years of schooling would be as follow:

$$Y_S = Y_0 (1 + r_1) \dots (1 + r_S) \quad (1.7)$$

If the number of years of schooling is assumed as $r_1 = r_2 = \dots = r_S = r$. Equation (1.7) could be summarised as:

$$Y_S = Y_0 (1 + r)^S \quad (1.8)$$

Subsequent to equation (1.8), this function would change in logarithm as follows:

$$\ln Y_S = \ln Y_0 + S \ln (1 + r) \quad (1.9)$$

Finally, value of small r (less than 0.2), $\ln (1 + r)$ estimation = r . Then, the new function could be derived as:

$$\ln Y_S = \ln Y_0 + r S \quad (1.10)$$

Where, r value is the measurement for the rate of return from investment in one or more educational years. Thus, this equation could be shown from differences in equation (1.11) with sign S , finally obtained:

$$\begin{aligned} d(\ln Y_S) &= r [d(S)] & \text{or} & \\ \frac{d(Y)}{Y} &= r \end{aligned} \quad (1.11)$$

In short, changes in the rate of annual income would result in an additional increase in the number years schooling with sign r .

Besides taking into consideration of the level of education in determine income, Mincer also looked at the impact of working experience on income received by individual. In general, Mincer's income function could be derived as follow:

$$\ln Y = \ln Y_0 + \alpha_1 S + \alpha_2 EXP + \alpha_3 EXP^2 \quad (1.12)$$

Where α_1 , the rate of return to increase in years of schooling and if $k_j = 0$, for $j = 1, T$ (It means that an individual is not making investment in education), α_2 and $\alpha_3 = 0$. Whereas in this case, the coefficient value α_2 would have positive relationship and α_3 would become negative with income. Increase in income as a result of an increase in one or more in working experience, could be shown in the equation as follow:

$$\frac{d(\ln Y)}{d(Y)} = \alpha_2 [d(EXP)] + \alpha_3 [d(EXP^2)] \quad \text{or} \quad (1.13)$$

$$\frac{Y}{d(EXP)} = \alpha_2 EXP + 2\alpha_3 EXP \quad (1.14)$$

Other factors have also influenced income such individual's ability, quality of school, demography (such as race, sex, family background and family income) and others that could also influence income. In the above case, others factors are assigning with U (refer equation (1.15)). Similarly, this shows that Mincer's income based function used in this research as:

$$\ln Y = \ln Y_0 + \alpha_1 S + \alpha_2 EXP + \alpha_3 EXP^2 + \alpha_4 U \quad (1.15)$$

RESULTS

Based on the regression analyse, the results show the years of schooling (S) and working experience (EXP) are related positively and significant with the return rate at 99%. The coefficient value of the years of schooling and working experience are 0.062 and 0.046 respectively. It means that an increase of a year in education and an increase of a year in working experience will result in a return rate of 0.062 % and likewise, an increase in a year of working experience will amount in a return rate of 0.046% with other factors are considered permanent. The gathered result is parallel with the theory and is the same as the previous survey which was conducted based on Mincer Function (1974). The findings show years in education and working experience affect the income yield of a certain worker.

For the Malay race variable and location are found that both variables are positively related and significant with the confident level at 97%. The coefficient value for variable for the Malay race is at 0.193%. This means that the income for the Malay race will increase 0.193% compared to other races. The value for the location is at 0.173%. The result shows that the income of respondents who are educated in the urban area increases at 0.173% in relation with the respondents who are educated somewhere else. The findings are parallel with surveyed conducted previously in Malaysia and other places, which were previously discussed.

CONCLUSIONS

Based on the results discovered through this study towards analysis on the investment return on the employees' education which is carried out in the banking, insurance and financial sector using the Mincer methods (1974), it is found that years of education (S), and work experience (EXP) are positively connected and affect the investment of employees' education. The finding therefore is parallel with the theory and studies previously conducted and discussed. The regressive finding also shows that locality and race variants are positively connected and very significantly related to the employees' investment towards education. But the race variant does not play a significant role in the return of investment in the case of Chinese race and negatively related. In the study conducted in the banking, insurance and finance sector.

RECOMENDATIONS

Based on the results of the study, the following recommendations were made:

1. The years of schooling are related positively and significant with the rate of return. So, the government need to be proactive in allocating adequate budget for the purpose of educating the masses, especially in the higher education level. Investment in education will ensure a good return for individuals in their future and at the same time the country would not be in short supply of individuals who are competitive, creative and highly productive and by the year of 2020, the vision of the country would be realized with highly skilled working population.
2. The involvement of such a body like PTPTN and others are a must and has to be more dynamic in providing finance for education. This thus ensures the created force of the human capital is of high quality and competitive at the domestic or international level. The community and individuals surely need to have that awareness in placing the importance of investment towards the education. They have to be able to set up education funds and not relying solely on aid. This education investment inevitably results in a better and more knowledgeable community who lives more comfortably than the previous generation and alleviates poverty which is closely associated with certain ethnic groups.
3. In this study, the work experience (EXP) variant is significant and closely related to the return of investment from education, other than the years of education variant. Thus this variant is seen as important in analyzing the return of investment from education and should be used in the coming studies. Based on the finding, individuals have to be dynamic in upgrading their work experience and at the same time enhance their investment towards education in ensuring that the return they will receive in the future is at the relative level. From this implication, other researchers can use other determinants and variants in their study and research. Further studies are important to determine what of the factors can contribute real and more significant determinants that really affect the return of investment from education.

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