

Wage Rate Determinants: A Survey Addressing Christian Minority in Lahore, Pakistan

Noel Alter

Lecturer Economics, Government Degree College Lalamusa Gujrat, Pakistan
MPhil Economics, Forman Christian College, a Chartered University Lahore Pakistan

Abstract: *Socioeconomic status of people in a society is mainly affected by the human capital returns, higher returns mean better living standard and for higher wage returns it is important to address wage rate determinants. First time in Pakistan a research study is carried out to tackle with wage rate determinants at Christian community level. Mincerian (1974) human capital earning function is estimated by taking data of 403 households, yielded an accomplished sample of 614 wage employee. Results elaborate positive and significant association of years of schooling and experience with wage rate. Male gender earns higher returns as compared to female Christian workers while estimated coefficients highlights higher private returns. Attained results affirm serious policy implications for the economic and social improvement and growth strategy of Christian minority of Lahore Pakistan. Every household should focus on education as primary goal for their children especially for girls. Private and public schools should be opened in Christian colonies, financial assistance should be provided and job going parents should be accommodated with educational allowances for their off-springs. Under higher private returns private sector should fix reasonable quota for Christians. Lastly to encourage female Christian workers, social allowances and educational training centers should be introduced.*

Keywords: Christians, Wage returns, Estimates, Households, Gender gap

1. Introduction

Human capital returns are considered important factors for settling down the socioeconomic status of people in a society. Keeping in view the worth of economic returns (wages), individuals try to enhance the capacity of human capital in the labor market for the higher productivity. Generically human capital is referred as human skills which are resolute by market, personal and environmental dynamics. Association between human capital dynamics and human returns (wage rate) are not obvious, furthermore diverge over time and space.

This specific study address, figure out and analyze the important wage rate determinants for Christians (the largest minority in Pakistan, about 3 million and 1.6 percent of total Pakistan population) in Lahore, Pakistan. This is first time in Pakistan that a profound research is being carried out to scrutinize the factors persuading the earnings of Christians. Therefore this meticulous research implies serious policy relevance at family, private and public segments to tackle and target the highlighted areas for the development and progress of minorities in Pakistan in order to raise their living standards through wages in labor market. Lahore is among the largest Christian populated cities of Pakistan containing 0.4 million people and 5.83 percent of total population of Lahore [Punjab Development Statistics 2011, Bureau of Statistics, Government of Punjab, Lahore]. Thus it becomes evitable to address this issue of capital returns of Christian minority for their socioeconomic betterment and improvement.

Study utilizes Mincerian (1974) Human Capital Earning Function to estimate and determine the key dynamics associate with human capital returns (wages). Earnings are regarded as economic returns of different factors taking part in economic activities. Where schooling and experience are regarded as the key explanatory factors of wage rate as priory elucidated by many studies on wage rate determinants.

But there are also some political and social variables that fluctuates the rate of returns of individual in labor market. Keeping this issue under meditation this research estimates the impact of gender and private and public sector employment on wage rate in addition to schooling and experience. For data acquisition household survey is carried out where ten most populated Christian localities of Lahore are surveyed. This survey is carried out under the supervision of Khristos Enterprise International "A registered trading firm operating in Pakistan" through different churches. Sample consists of 403 households yielded an accomplished sample of 614 wage employee.

Study is comprised into three sections. Firstly, a brief review of the literature regarding wage rate determinants is addressed. Secondly, research methodology is developed where theoretical and empirical models are formulated for estimation. Lastly, through estimation of Human Capital Earning Function results are deducted for policy of wage compression engendered both by government policy and by economic forces.

2. Literature Review

This section reviews and discusses the theoretical and empirical literature on wage rate determinants. There exists substantial literature on the human capital earning or wage rate determinants. Roots of human capital earning function is given by the human capital theorists Becker (1962) and Mincer (1962) where they emphasized the role of training, schooling and other productivity related factors in enhancing the human wage earnings. After the development of human capital earning function extensive work has been carried out to analyze, scrutinize and purify the earning function.

Wide range of literature exists on the estimation of human capital earning function (wage rate determinants) for different countries where studies of Pascharapoulos (1980, 1985 and 1994) and Pascharapoulos and Chu Ng (1992)

analyzed the impact of education and experience on rate of returns. Schultz (1961) fortifies that labor productivity and efficient allocation of resources are heavily determined by human capital investment i.e. investment in education, training and health. According to Sabot (1992), Behrman, Ross, Sabot and Tropp (1994), Alderman, Behrman, Ross and Sabot (1996) and Behrman, Khan, Ross and Sabot (1997) there subsists positive, substantial and significance relationship between years of schooling and experience on measurement of earning. Empirical investigation to human capital earning function highlights utilization of various estimation techniques. Initially OLS estimation technique is used by many studies but with the passage of time studies of Ashenfelter and Zimmerman (1997), Butcher and Case (1994), Card (1995), Angrist and Krueger (1991) and Ashenfelter and Krueger (1994) highlighted inefficient, inconsistent and biased estimates attained through OLS. Further revolution for estimation of human capital earning function occurred and more emphasis is made over accurate and efficient estimation technique. So keeping in view need of the hour this study utilizes GMM estimation technique to address this issue.

Specifically talking about Pakistan, availability of literature lacks estimation of human capital earning through Mincerian earning function. Only the studies of Shabbir and Khan (1991), Shabbir (1994) and Nasir and Nazli (2000) estimated the Mincerian earning function for Pakistan and concluded positive and significant impact of education and experience on wage rate and are in line with prior studies. Furthermore studies of Haque (1977), Hamdani (1977), Guisinger et al (1984), Khan and Irfan (1985), Ahmad, et al (1991), Van der Gaag and Vijverberg (1989), Awan & Hussain (2007), Awan et al. (2011) and Ashraf and Ashraf (1993, 1996) analyzed the influence of schooling on human earning by estimating the human capital earning function at country, province and city level but not a single study exists which tried to estimate human capital earning function at community level. So, keeping in view the research gap this meticulous work is set up to figure out the wage rate determinants for Christian community residing in Lahore Pakistan for policy design, economic and social improvement and growth strategy of Christian community. Above stated studies investigated not only the influence of education and experience on human earnings but also justified the need of other socioeconomic factors (region, gender etc) in determining the personal earnings. Moreover vast gender gap exists in human capital accumulation as elaborated by numerous studies for example Sabot (1992), Alderman, Behrman, Ross and Sabot (1996), Sawada (1997), Shabbir (1993) and Ashraf and Ashraf (1993 and 1996) highlighted gender gap. Thus this study tries to incorporate the influence of gender on human capital accumulation along with schooling and experience. And also the effect of private returns is also determined for Christians in this study. As far as empirical investigation regards previous literature about earning function in Pakistan used OLS estimation technique yielding inefficient estimates and ultimately leading towards wrong policy implication thus inculcating this problem in this study GMM estimation technique is used for more effective outcomes. In next section research methodology of this research study is elaborated.

3. Research Methodology

Under research methodology theoretical framework, empirical model, variable description and data collection and estimation technique will be laid down.

3.1 Theoretical Model

According to Mincer (1974) Human Capital Model which is also known as Human Capital Earning Function, wage rates are associated with human capital. And are determined by regressing earning or wage rate of individual on vector of market, personal and environmental variables influence human capital and ultimately wage rates. The point at which human capital is higher, wage rate will be at its peak reflecting positive association between these two entities. Human capital and productivity can be enhanced through preliminary human capital investment i.e. investment in schooling and on the job training investment etc. Thus wage rate is increased through investing on schooling and on job training, Becker (1962, 1964). Investment in schooling reflects education and investment on job training can be attained through experience. Willis (1986) elucidates that Human Capital Earning Function assumes workers endeavors to maximize their lifetime earnings by the direct cost of investment. Therefore it is assumed that Human Capital Earning is a function of years of schooling and experience. In addition to these two major determining elements some other socioeconomic factors are also evitable in finding the human capital earning and vary under different circumstances. In this study gender, nature of job and private/public sector employment is considered other important explanatory variable additive to years of schooling and experience. Human Capital Earning Function (HCEF)

$$HCEF = f(\text{years of schooling, experience, gender, pri/pub sector EMP})$$

3.2 Empirical Model

Mincerian type Human Capital Earning Function illuminates the dependency of earnings (wage rate) on schooling and experience, Mincer (1974).

$$\ln Y_i = \beta_0 + \beta_1 S_i + \beta_2 X_i + \beta_3 X_i^2 + \epsilon_i \quad (1)$$

Where Y_i is wage rate (earning), S_i indicates years of schooling and X_i shows the experience while square of X_i (X_i^2) highlighting quadratic association of experience with wage rate. This relation between wage rate and experience explains that firstly as experience increases it uplifts the earnings showing positive linkage but after a certain limit of years with the further increase of experience leads towards human capital deprivation causing decline in returns having negative association thus have inverted U-shaped graph. This negative relation of experience with earnings is elaborated by taking square of experience. Furthermore in accordance with Mincer (1974) age is considered as more suitable proxy of experience by making few adjustments ($X = a - s - 6$) known as Mincer transformation. Gender and private/public sector is also used as explanatory variables in this specific study. To incorporate the effect of gender and private/public sector jobs on wage rate dummy variables are introduced. For gender dummy one is used (Male=1, Female=0) and for private/public jobs dummy two is utilized (public=1,

private=0). Thus the Human Capital Earning Function which will be estimated in this study is in followings;

$$\ln Y_i = \beta_0 + \beta_1 S_i + \beta_2 X_i + \beta_3 X_i^2 + G_i + E_i + \epsilon_i \quad (2)$$

3.3 Variable Description and Data Collection

For estimation earning (Y_i) is used as explained factor. Sample of 614 earning hands yielded data on monthly basis in Pak rupees after surveying 403 household in ten most populated localities of Christians in Lahore Pakistan. Wages are converted in natural logarithmic expression for better responsiveness. Details about the explanatory variables are in followings;

Investment in schooling is the crucial influencing entity of human capital productivity. To deal with this factor year of schooling (S_i) is used as proxy of investment in schooling. Generally years of schooling reflects positive association with rate of returns of workers, where highly qualified individual has more opportunities to get higher wage. In this study years of schooling is ranked into non-educated, primary, middle, matric, intermediate, graduate, masters and PhDs category. Second more powerful addressing capricious element to rate of returns of workers is on the job training. On job training is referred as experience (X_i) and age is considered as more suitable proxy to deal with the experience that is done after some transformation.

Mincer transformation (1974) is an adjustment to derive years of experience from age ($X_i = A_i - S_i - 6$) where " A_i " is age and " S_i " is regarded as years of schooling. Level of experience reflects dual linkage with wages. In first phase intensity of experience positively boost earning but at later stage human capital deprivation (Ageing) causes negative impact on productivity of a worker and upshot decline in returns. To inculcate this phenomenon of human capital deprivation square of experience (X_i^2) is used.

In addition to above stated crucial capricious entities of human capital earning (wage rate) there are also some other socioeconomic variables i.e. gender (G_i) and private/public sector employment (E_i) which used as explanatory variable in this study as they show respectively considerable impact on wage rate.

For data acquisition household survey is carried out where ten most populated Christian localities of Lahore are surveyed. This survey is carried out under the supervision of Khristos Enterprise International "A registered trading firm operating in Pakistan" through different churches. Sample consists of 403 households yielded an accomplished sample of 614 wage employee.

3.4 Estimation Technique

Studies of Ashenfelter and Zimmerman (1997), Butcher and Case (1994), Card (1995), Angrist and Krueger (1991) and Ashenfelter and Krueger (1994) highlights that wage rate estimation leads to low determination power of the model due to natural restrictions to capture all explanatory factors. Therefore due to omitted variables the problem of heterogeneity arrives. And Ordinary Least Square (OLS) estimates leads towards inefficient, inconsistent and biased estimates ultimately causing overestimation and

underestimation of estimates through incorporating instrumental variables. Heterogeneity causes inconsistency of error violating properties of Classical Linear Regression Model. In addition to omitted variable bias and heterogeneity under cross section data the problems of heteroscedasticity and autocorrelation are also critical. Thus under this situation estimation through OLS is not wise decision and leads toward implausible results thus Generalized Method of Moments (GMM) is utilized. GMM gives consistent, efficient and unbiased results under overestimated and underestimated models. GMM employs method of Weighted Least Square (WLS) and removes the inconsistency of the error so avoid serious estimate problems i.e. heterogeneity, endogeneity, heteroscedasticity, autocorrelation and non-linearity. So GMM is asymptotically more proficient to be functionalized.

4. Results

Human Capital Earning Function in equation (2) is estimated through GMM estimation technique through SPSS estimation software. The GMM estimation converges after five iterations. The results of wage rate determinants and model specification are illustrated in table (1). To address the relationship and responsiveness of explanatory variables standardized beta (β) coefficients are utilized as they upshot efficient estimates under unit disparity among variables.

Years of schooling are positively and significantly associated with the wage rate, indicating that higher educational qualification will earn elevated returns in the form of wage in monetary terms and reflect low wages for less educated individuals. Relationship of job experience with wage rate is also stated in table (1), where experience expresses linkage with wages in two phases. In first stage experience influences wage returns positively and at later stage due to age factor and human capital deprivation experience indicates negative connection with wage rate. These results of beta (β) coefficients of experience highlights that to a certain limit more job experienced people yields higher wages due to their job expertise and job knowledge but as they grow in age capability and capacity of doing job depletes ultimately effects wages negatively. Therefore experience elucidates inverted-U shape relationship with wage rate. This inverted-U shaped association of job experience with wage rate for the Christian minority in Lahore, Pakistan is statistically significant.

In this study impact of gender and private/public jobs is also scrutinized on human capital returns. And results explain positive influence of male sex in earning function. Christian males have more chances in Lahore Pakistan to earn higher wages as compare to females. This phenomenon may be due to male dominant society and also that female in Christian minority of Lahore has low educational background. As far as the impact of private/public jobs on wage rate is regarded it affirms high private returns. Estimation results of private/public jobs deduct negative relationship with earnings which means that private jobs lead towards greater earnings for Christian minority in Lahore as compared to public jobs furthermore this relation is statistically significant.

Table 1: Estimation Results of Wage Rate Determinants

Variables	Coefficients	t-statistics	Significance
Dependent Variable: Wage rate Constant	0.873 (0.024)	6.238	0
Schooling (S_i)	0.617 (0.029)	14.652	0
Experience (X_i)	0.431 (0.043)	3.475	0.001
Sq. Experience (X_i^2)	-0.295 (0.030)	-2.496	0.013
Gender (G_i)	0.115 (0.037)	3.312	0.001
Private/Public job (E_i)	-0.055 (0.476)	-1.594	0.112
Sample (N) = 614 $R^2 = 0.537$ Adj. $R^2 = 0.483$ Standard Error of Estimate = 0.177 F- Statistics (sig.) = 49.215 (0.000) Durbin-Watson = 2.178 White test (F. prob) = 0.087 *Figures in parenthesis represent the standard error of variables. **All coefficients are statistically significance at 5 percent level			

The strength of the educational qualification and level of experience is also determined in this study. As far as the educational qualification is concern with every increasing level of educational year wage rate adds to six hundred and seventeen rupees, again reflecting beneficial upshots of education on personal earnings. Similarly, level of experience also gives additional level of income to individuals. Every increasing year of experience causes personal salary to ascend to four hundred and thirty one rupee on average. But after a certain age, experience and wage rate shows negative behavior with each other and with every aging year income demises to two hundred and ninety rupees.

Results of standardized beta (β) coefficients attained through estimation are statistically significant at 5% level of significance. Moreover goodness of fit criterion, error and model specification is also stated. Coefficient of determination (R^2) is equal to 0.537, expressing that 53.7 percent of the variations is explained by the stated explanatory factors. Adjusted R^2 is 0.483 which is also moderate and acceptable as this study deals with micro data over cross section areas. F-statistics is 49.215 and F-probability is 0.000, highlighting the statistical significance of overall model. To check the problem of autocorrelation among variable Durbin Watson test is applied and giving the value 2.178, reflecting that the problem of autocorrelation exists in this model but this problem is not savoir. For the scrutiny and consistency of the variance results of White test for heteroscedasticity are elaborated (F. prob = 0.087). Result justifies the estimated results under homoscedasticity and absence of heteroscedasticity problem.

Residual statistics are reported in table (2) to analyze the authenticity of the estimated score of coefficients. Obtained standardized predicted values have mean is equal to zero and the standard deviation is equal to 1.0 as shown in above stated table. These results obtained helps to confirm that estimated standardized scores of each variable are correctly computed. The minimum and maximum values of standardized predicted estimates also correspond to the residual statistics previously reported.

Table 2: Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	8.54	10.22	9.18	0.366	614
Residual	-2.435	2.41	0	0.575	614
Std. Predicted Value	-1.767	2.822	0	1	614
Std. Residual	-4.218	4.174	0	0.996	614

Furthermore to evaluate the normality assumption of residuals, P-P plot of regression standardized residuals is constructed and stated below. P-P plot of regression standardized residuals compares the observed distribution of residuals with the expected distribution of the residuals. Observed distribution of residual are normally distributed and expected are scattered. If the distribution of observed and expected values residuals matches up nicely with each other then it is reflects very litter deviation thus substantially of the estimates is fortified. P-P plot of regression standardized residuals obtained in this study affirms the consistency of statistical analysis and little deviation of expected value of residual form normalized observed straight line of residual.

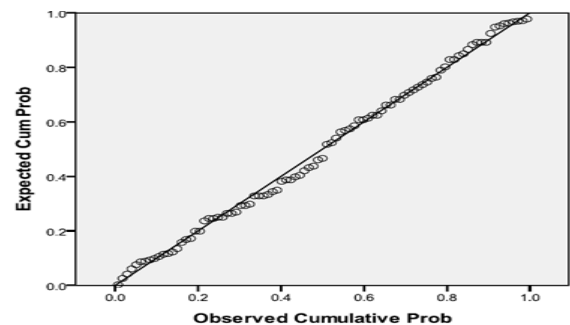


Figure 1: Normal P-P Plot of Regression Standardized Residual

5. Conclusion and Discussion

Human capital earning plays crucial and decisive role in determining the socioeconomic status of an individual in a society. So everyone tries to enhance human capital earning by targeting the market, personal and environmental dynamics. This very study addresses such phenomenon of determinants of human capital earning for Christian minority in Lahore Pakistan. Purpose of this research is to suggest policy tools to family, private and public segments to focus wage returns for the social development and progress of Christian minority of Lahore. To determine the impact of years of schooling, experience, gender and private/public jobs on wage rate a household survey is (being) carried out. Sample consists of 403 households yielded an accomplished sample of 614 wage employee. Human Capital Earning Function by Mincer (1974) for wage rate determinants is estimated for explanatory variables through GMM for consistent, plausible and robust results. GMM is asymptotically more proficient to be functionalized. Estimated results highlights positive association of education (years of schooling) with wage rate. Higher educational qualification yields elevated human capital returns. Furthermore job experience initially establishes positive linkage with wage rate and on later stage due to human capital depreciation experience expresses negative relationship with wage rate. This two phase association of experience with wage rate can be expressed with inverter U-

shape phenomenon. Estimated results of gender variable explain that male has higher wage returns as compare to female. This linkage may be justified by male dominant society and low educational qualification of female in Christian minority of Lahore, comparative to male. Regression coefficient of private/public jobs elucidates higher private returns for Christian minority which means that Christian people involved in private jobs earn higher wages than those who are concerned with public sector jobs. Relationship of stated explanatory variables with wage rate is statistically significant at 5 percent level. Meanwhile adjusted R^2 and F-statistics justifies the plausibility of estimated model. Error inconsistency is addressed through Durbin-Watson and White heteroscedasticity tests. Results of these tests fortify the absence of autocorrelation and heteroscedasticity problems.

Results attained through this research imply serious policy relevance for Christian minority of Lahore, firstly in the field of education. Every household should focus on education as primary goal. Higher level of education means greater monetary returns which will ultimately lead to family and social progress. On the other hand private and public sector should lead from the front to establish and promote such schemes that boost the education of Christian minority. New private and public schools should be opened in Christian colonies, financial assistance should be provided and job going parents should be accommodated with educational allowances for their off-springs. Secondly, as experience plays a vital role in determining the level of human capital returns thus employers should facilitates their workers with on job training and workshops to inculcate the quality and skill in workers. Thirdly, due to higher private returns for Christian minority private sector should hire more Christian workers and should set a special job quota. Furthermore public sector need to increase the salary package for Christian minority through special minority allowance, keeping in view that Christian minority is socially and economically deprived. Lastly to encourage female Christian workers, social allowances and educational training centers should be introduced.

Minority always play an important part in the growth of a country. Christians are the largest minority in Pakistan and Lahore is among the industrialized and model city of Pakistan. Thus Christians of Lahore should be encouraged to not only develop their selves, their families, and their community but also for the development of Pakistan. This can only be achieved through raising the living and economic standard of Christians through human capital returns. Thus Christian enterprise, NGO's, private and public sector should step forward to educate, train and develop Christian minority of Pakistan.

References

- [1] Ashenfelter, Orley and David Zimmerman (1997), "Estimating of Return to Schooling from Sibling Data: Fathers, Sons and Brothers," *Review of Economics and Statistics*, 79:1-9.
- [2] Angrist, Joshua D. and Alan B. Krueger (1991), "Does Compulsory School Attendance Affect Schooling and Earnings," *Quarterly Journal of Economics*, 106:979-1014.
- [3] Ashenfelter, Orley and Alan B. Krueger (1994), "Estimates of Economic Return to Schooling for A New Sample of Twins," *Quarterly Journal of Economics*, 113:253-284.
- [4] Alderman, H., J. Behrman., D. Ross., and R. Sabot. (1996). "The Returns to Endogenous Human Capital in Pakistan's Rural Wage Labour Market". *Oxford Bulletin of Economics and Statistics*. Volume 58. No. 1.
- [5] Ahmad, E. , M. F. Arshad and A. Ahmad (1991), "Learning and Earning Profiles in Pakistan's Informal Sector". *Pakistan Economic and Social Review*. Vol. XXIX, No. 2
- [6] Ashraf, B. and J. Ashraf (1996), "Evidence on Gender age Discrimination from the 1984-85 HIES: A Note". *Pakistan Journal of Applied Economics*. Vol. XII, No. 1.
- [7] Ashraf, J. and B. Ashraf (1993), "Estimating the Gender Wage Gap in Rawalpindi City". *Journal of Development Studies*. Vol. 24, No. 2.
- [8] Awan, M. S., and Hussain, Z. (2007). Returns to Education and Gender Differentials in Wages in Pakistan. *The Lahore Journal of Economics*, 12 (2), 49-68.
- [9] Awan, M. S., Iqbal, N., and Waqas, M. (2011). The Impact of Human Capital on Urban Poverty: The Case of Sargodha City. *Journal of Sustainable Development*, 4(1), 143-150.
- [10] Becker, Gary S. (1964), "Human capital: a theoretical analysis with special reference to education". New York: Columbia University Press for NBER.
- [11] Becker, Gary S. (1962), "Investment in Human Capital: A Theoretical Analysis". *Journal of Political Economy*. Vol. 70, Supplement.
- [12] Butcher, Kristin F. and Anne Case (1994), "The Effects of Sibling Composition on Women's Education and Earnings," *Quarterly Journal of Economics*, 109: 443-450.
- [13] Behrman, Jere. R., David Ross, Richard Sabot, and Mathew Tropp (1994). "Improving the Quality Versus Increasing the Quantity of Schooling". *Economics of Education Review*. Vol 16, No. 2. pp 127-142.
- [14] Behrman, Jere. R., Shahrukh Khan, David Ross and Richard Sabot (1997). "School Quality and Cognitive Achievement Production: A Case Study for Rural Pakistan". *Economics of Education Review*. Vol 16, No. 2. pp 127-142.
- [15] Card, David (1995), "Using Geographic Variation in College Proximity to Estimate the Return to Schooling", in: Louis N. Christofides, E. Kenneth Grant and Robert Swidinsky, eds., *Aspects of Labour Market Behavior: Essays in Honor of John Vanderkamp* (University of Toronto, Canada), 201-222.
- [16] Guisinger, S. E., J. W. Henderson, and G. W. Scully. (1984), "Earnings, rate of Returns to Education and Earning Distribution in Pakistan". *Economics of Education Review*. Vol. 3, No. 4.
- [17] Hamdani, Khalil. (1977), "Education and the Income Differentials: An Estimation of Rawalpindi City". *The Pakistan Development Review*. Vol XVI No. 2
- [18] Haque, Nadeemul. (1977), "An Economic Analysis of Personal Earnings in Rawalpindi City". *The Pakistan Development Review*. 16:4.
- [19] Khan, S. R. and M. Irfan. (1985), "Rate of Returns to Education and Determinants of Earnings in Pakistan". *The Pakistan Development Review*. 34:3&4

- [20] Mincer, Jacob. (1962). On-the-Job Training Costs, Returns, and some Implications. *Journal of Political Economy*, Vol. 70, No. 5, Part 2 October, Pp. S50-S79.
- [21] Mincer, Jacob, (1974), *Schooling, Experience and Earnings*: New York: National Bureau of Economic Research.
- [22] Nasir, Z. M., and Nazli, H. (2000). Education and Earning in Pakistan. Research Report No. 177, Pakistan Institute of Development Economics.
- [23] Nasir, Z. M. (2002). Returns to Human Capital in Pakistan. *Pakistan Development Review*, 41(1), 1-28.
- [24] Psacharopoulos, G. "Returns to Education: An Updated International Comparison". In T. King (ed.), *Education and Income*. Washington D.C. July 1980. (World Bank Staff Working Paper No. 402)
- [25] Psacharopoulos, G., 1985. Returns to education: A further international update and implications. *The Journal of Human Resources*, 583-604.
- [26] Pasacharopoulos, G. (1994), "Returns to Investment in Education: A Global Update". *World Development*. Vol. 22: Issue 9.
- [27] Pasacharopoulos, G and Ying Chu Ng. (1992), "Earning and Educations in Latin America".
- [28] World Bank Working Paper Series No. 1056, World Bank. Washington, D.C.
- [29] Sabot, Richard (1992). "Human Capital Accumulation in Post Green Revolution Rural Pakistan: A Progress Report. *The Pakistan Development Review*. Volume 31. No. 4. Part I
- [30] Schultz, T. W. (1961). Investment in Human Capital. *American Economic Review*, 51(1), 1-15.
- [31] Shabbir, T. and A. H. Khan (1991), "Mincerian Earning Functions for Pakistan: A Regional Analysis". *Pakistan Economic and Social Review*. Vol. XXIX, No. 2.
- [32] Shabbir, Tayyab (1994), "Mincerian Earning Functions for Pakistan". *The Pakistan Development Review*. Vol. 33, No. 1.
- [33] Shabbir, Tayyab (1993), "Productivity-Enhancing Vs Credentialist Effects of Schooling in Rural Pakistan". International Food Policy Research Institute.
- [34] Sawada, Yausyuki. (1997). "Human Capital Investment in Pakistan: Implications of Micro- Evidence from Rural Pakistan". *The Pakistan Development Review*. Volume 36, No. 4.
- [35] Van der Gaag, Jacques and Wim Vijverberg (1989), "Wage Determinants in Côte d'Ivoire: Experience, Credentials and Human Capital." *Economic Development and Cultural Change*, 37:2.
- [36] Willis, Robert (1986), "Wage Determinants: A Survey and Reinterpretation of Human Capital Earnings Functions". University of Chicago and Economic Research Center (NORC). *Handbook of Labor Economics*, Volume 1.

Author Profile



Noel Alter received BS honors and M Phil degree in Economics from Forman Christian College University Lahore, Pakistan in 2009 and 2011, respectively. He has started his professional career as lecturer in public sector by competing in Public Services Commissions exam of Pakistan in 2012 and still professing as lecturer in Lalamusa, Gujrat.