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NEXUS BETWEEN EDUCATIONAL ATTAINMENT AND INCOME IN KHULNA CITY: AN EMPIRICAL EXPLORATION

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Abstract

The economic development of any country not only depends on physical capital but also human capital. Education is an important and valuable factor of human capital development and overall improvement of society. This paper aims to examine the determinants of education and its effect on income level in Khulna city. The sample size is 250 service holders. Therefore, the study estimates are based on the method of ordinary least squares (OLS) and two stage least squares (2SLS). The results suggest that parents' education is important factors of education attainment. Moreover, education and experience are positively correlated with the income. This study has recommended that the parents should be educated and conscious about the educational environment for their child. Moreover, it is essential to improve the cognitive ability, training facilities, institutional opportunities, result which also affect the income level. To get a good atmosphere, different education policies should be taken by the authority like – inclusive policy, mandatory higher secondary education and subsidy for students.

Keywords: Education, experience, income, Khulna.

Introduction

Education is the process of facilitating learning. Knowledge, skills, values, beliefs, and habits of a group of people are transferred to other people, through story-telling, discussion, teaching, training, or research. According to the US Census Bureau, educational attainment refers to the highest degree of education an individual has completed (Arcidiacono, 2010). At a higher education level, participating students expect certain gains from attending universities as opposed to working immediately out of school. Income is the amount of money or its equivalent which is received during a period of time in exchange for labor or services, from the sale of goods or property, or as profit from financial investments. As per the latest literacy survey report of Bangladesh, the country's literacy rate of the population aged above 15 years reached 75.6 percent (BBS, 2021). There are lots of socio-economic and legal factors which can influence the literacy rate as well as the opportunity of education attainment for an individual. The family background, family type, educational level of mother and family head, family income level, mandatory primary education law – those can affect the education. Besides education and experience, major choice, result, employment type, cognitive ability, working duration, institute type, training duration help to predict percentage increase/decrease in income (Babones, et

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al., 2007). In 1974, Mincer agreed with Becker and Collins (1964) that the productivity and upward sloping income profile occur as human capital, or skills, increase with education, training and experience. (Mincer, 1984). A study examines the effect of education and experience on income of workers in Thailand and the result suggests that both are positively correlated with the income (Wannakrairoj, 2013). The other research shows that college major choice, academic performance, natural ability, and industry selection do have a significant impact on earnings (Kimbrough and Arcidiacono, 2012). A paper explains the effect of education and cognitive ability on the income of educated people and finds a correlation between education and income in Khartoum where P = 0.012 (Salih, 2007). Previous literatures have shown the separate results about the effect of education on income and the major factors of education. But this paper has aimed to find out the determinants of education and to explore the impact of education on income simultaneously. Moreover, it has focused on some education policy related opportunities to enhance the literacy rate of Khulna city. This article has incorporated the introductory speech, detailed methods and materials used in this paper including the sample size and sampling techniques. Moreover, it has mentioned the estimated techniques as well as equations of OLS, 2SLS models and hypothesis. In addition, the results have been described properly and some education related policies of Bangladesh are given for the improvement of law about education. The present results are explained and previous finding are compared in the discussion part with the recommendations. Last of all, the summary of the paper and what should be done have been elucidated in the conclusion.

Materials and Methods

This is cross-sectional research where information had collected in one time period of survey. The information of 250 samples has been collected through multi-stage judgmental sampling design. Firstly, the different areas of Khulna i.e. *Daulatpur*, *Khalishpur*, *Shonadanga*, *Gollamari* and *Rupsha* were selected purposively. Exactly 50 respondents were collected from each study area. Then, the service holders who were (30-60) years old, had education level above 12 years of schooling were also selected purposively for this study. At first, for the purpose of primary data collection in Khulna region, an interview schedule had been prepared which had been pre-tested on the basis of pilot survey findings and experience. Based on the final interview schedule, primary data had been collected through interviewing process at the time of field survey, where person to person interaction was occurred. Besides, secondary data had been taken from published articles, working papers, Bangladesh Bureau of Statistics (BBS), Bangladesh Economic Review, Bangladesh Bureau of Education and Information Statistics (BANBEIS). The multiple regression model has applied to find out the determinants of education. Mincerian model proved the positive relationship between education and experience with income. To prove the Mincerian model, another multiple regression has used in this paper, including other socio-economic and education related factors like result, family income, parents' education etc. The result of the Mincerian model has estimated through OLS and quantile regression (25^{th} - lower income group, 50^{th} - middle income group, 75^{th} - high income group) model to compare the difference of various income group easily. At last, the results of OLS and 2SLS models have compared to understand the reliability and robustness of the model estimation.

Variables

There are basically two multiple regression models. Firstly, education is the dependent variable which was measured by schooling year. The independent variables are gender of the participants, fathers' education, mothers' education, family income, family type, education level of the head of a family, the respondents' family has migrated from one place to another or not, cost behind education and knowledge about educational policies. Secondly, Mincerian model has included the income of the service holder (BDT) as the dependent variable. The corresponding explanatory variables are education, experience, age, gender, major (humanities, science, business background), institute type (public or private), result, employment type, cognitive ability, in-job training and duration of work in their career. These variable are also applied in the 2SLS model.

Estimation of Multiple Regression Model of Education

This model has shown the factors which have encouragement on education attainment.

$$E_i = \beta_0 + \beta_1 S_i + \beta_2 FE_i + \beta_3 ME_i + \beta_4 FI_i + \beta_5 FT_i + \beta_6 EH_i + \beta_7 MS_i + \beta_8 EC_i + \beta_9 L_i + u_i$$

Where E corresponds to education as dependent variable. Moreover, explanatory variables are S for gender, FE for fathers' education, ME for mothers' education, FI for family income, FT for family type, EH for education of head, MS for migratory status, EC for education cost, L for knowledge about education policy and u is disturbance term.

Estimation of Mincerian Model of Income Incorporating Other Factors

The Mincer model was proposed by Jacob Mincer in 1974. The general Mincerian income model is:

$$lnY_i = \beta 0 + \beta_1 E_i + \beta_2 X_i + \mu_i$$

Where Y_i corresponds to individual i's income, E_i is his/her education and X_i his/her working experience and μ_i a disturbance term. But authors would like to extend the equation by including some other educational and skill based variables.

$$lnY_i = \beta_0 + \beta_{11} E_i + \beta_{22} EX_i + \beta_1 A_i + \beta_2 A_i^2 + \beta_3 S_i + \beta_4 M_i + \beta_5 IT_i + \beta_6 R_i + \beta_7 ET_i + \beta_8 CA_i + \beta_9 IJ_i + \beta_{10} WD_i + u_i$$

Where, E corresponds to education, EX is experience, A is age, A^2 is age^2, S is gender, M is major, IT is institute type, R is result, ET is employment type, CA is cognitive ability, IJ is in-job training, WD is duration of work and u is disturbance term.

Two Stage Least Squares (2SLS) Model

Assuming education as an instrumental variable, authors try to compare the results of OLS and 2SLS to identify the reliable results of the research. Estimating the first stage (reduced form) equation with only exogenous regressors,

$$y_2 = x_0'\alpha_0 + x_1'\alpha_1 + x_2'\alpha_2 + x_3'\alpha_3 + x_4'\alpha_4 + x_5'\alpha_5 + x_6'\alpha_6 + x_7'\alpha_7 + x_8'\alpha_8 + x_9'\alpha_9 + x_{10}'\alpha_{10} + e$$

Where x_1 corresponds to age, x_2 is age^2, x_3 is employment type, x_4 is experience, x_5 is experience^2, x_6 is duration of work, x_7 is gender, x_8 is education of family head, x_9 is members of family, x_{10} is mother's education and e is disturbance term.

Calculating the predicted values of y_2 and substituting them in the structural equation model,

$$y_1 = x_0'ß_0 + y_2'ß_1 + x_1'ß_2 + x_2'ß_3 + x_3'ß_4 + x_4'ß_5 + x_5'ß_6 + x_6'ß_7 + x_7'ß_8 + x_8'ß_9 + u$$

Where y_2 is education, x_1 corresponds to age, x_2 is age^2, x_3 is employment type, x_4 is experience, x_5 is experience^2, x_6 is duration of work, x_7 is gender, x_8 is cognitive score and u is disturbance term.

Hypothesis Testing

H_0: There is no difference in income level between the students of public and private institution

H_A: There is difference in income level between the students of public and private institution.

Results

Estimation of Education Analysis

The result of education multiple regression model is estimated in Table 1. It has been seen that gender has significant influence on education attainment in Khulna city. Due to the prejudice of having boy child and over caring on them, a family may provide proper educational facilities to the boy child than the girl. Furthermore, the educational qualification of child' father and mother has positive and significant effect on the respondents.

Generally, when the parent of a child is being educated, he/she can understand the necessity of education and focus on their child's mental, physical and learning skills. When a family is poor, it is tough for them to manage all the basic needs for the family members. Ultimately, the child of the family does not get proper opportunities to be educated. In the same time, joint family contains more members, so the head of the family cannot take care on their educational system. In Khulna city, there are many schools, colleges and universities which have high cost of study. Sometimes, people cannot avail the cost, as a result, they are bound to stop going to educational institutions. Although, Bangladesh is signatory to major international declarations of inclusive education and it has enacted policies and legislation in favor of inclusive education (Malak, 2013) to remove the disparities in education but the implementation of inclusive education is yet at an early stage in Bangladesh. The education policy of Bangladesh prescribes mandatory primary education, free education, food for education and so on. But, the people of Khulna city are not yet conscious about their rights to education. Thus, the knowledge of the policy has a positive and significant impact on education.

Table 1. Multiple Regression Analysis on Education

Education (Schooling Year)	Unit of Measurement	Sign	Coefficients of OLS
Gender (S)	Male = 0, Female = 1	β_1	-3.059**
			(5.537)
Father's Education (FE)	Schooling Year	β_2	2.180*
			(3.109)
Mother's Education (ME)	Schooling Year	β_3	3.007***
			(5.088)
Family Income (FI)	BDT	β_4	5.001*
			(8.001)
Family Type (FT)	Nuclear = 0, Joint = 1	β_5	6.882*
			(11.471)
Education of Head of Family (EH)	Schooling Year	β_6	2.577***
			(4.084)
Migratory Status (MS)	Rural = 0, Urban = 1	β_7	4.092
			(7.396)
Education Cost (EC)	BDT	β_8	-3.001*
			(6.001)
Knowledge of Education Policy	No = 0, Yes = 1	β_9	5.101**
			(6.321)
Constant		β_0	6.388
			(9.735)
Number of Observations			250
R^2			0.60

*N.B.: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 Source: Authors Estimation, 2021*

Estimation of Income Analysis (Extending the Mincerian Model)

In Mincerian model estimation, it is also proved that the income is positively influenced by education and experience. Among 250 participants in this study, it has been again accomplished that the more schooling year and long years of experience, both have significant influence over the income. The result of the income model equation is estimated through multiple regression (OLS) and quantile regression (25th, 50th, 75th quantile) model in table 2. It can be explained the coefficient results of OLS, 25th, 50th and 75th quantile and can be compared easily the differences of these two models. The variable age is significant in OLS, 50th and 75th

quantile and the effect of age is more for the people who are in upper income group. Though income is increased with the increasing age of people but after a certain period of time, considering other variables constant, when age of a respondent is increased in 1 year, his/her income is decreased. Gender discrimination is more in median income group. The significant effect of major background on income is high in upper income group. The respondents who have completed their education from public institute earn more than the respondents who have completed from private institute. The consequence of result is more for the people who are in middle income group. The outcome of cognitive ability on income is high in upper income group. Actually, female people have low income opportunities in Khulna city than the male. Moreover, at the job market, the demand for the employee who has science and business background is high. The students of public universities get more facilities in the job market than the private institutional students. But in the field of own business or entrepreneurship business, the students of private institutions are doing well in Khulna. Additionally, the good result, cognitive ability, creativity and in –job training- all those things work for the better job and enhancement of income level.

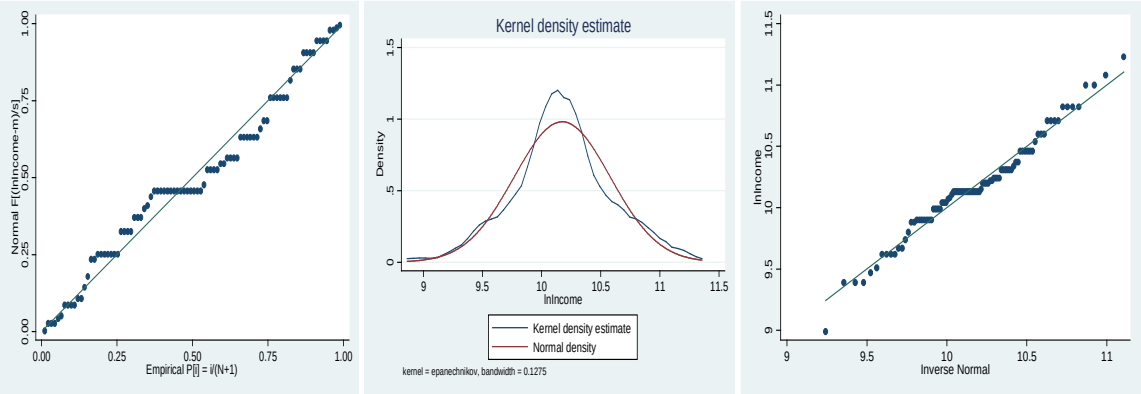
Table 2. Comparison of OLS and Quantile Regression Model (ii) of Income

ln Income	Unit of Measurement	Sign	Coefficients of OLS	25th	50th	75th
Education	Schooling Year	β_{11}	0.090***	0.102***	0.050**	0.085**
			(0.021)	(0.035)	(0.023)	(0.039)
Experience	Year	β_{22}	0.004**	0.001	0.001	0.009**
			(0.007)	(0.008)	(0.005)	(0.008)
Age (A)	Year	β_1	0.022**	0.019	0.056***	0.067*
			(0.048)	(0.055)	(0.059)	(0.078)
Age^2 (A^2)	Year	β_2	-0.011	-0.021	-0.040*	-0.031
			(0.001)	(0.006)	(0.001)	(0 .001)
Gender (S)	Male = 0, Female = 1	β_3	-0.052**	-0.047	-0.138***	0.004*
			(0.086)	(0.100)	(0 .107)	(0.144)
Major (M)	Humanities = 0, Others (Business + Science) = 1	β_4	0.045*	0.026	0.075*	0.079
			(0.041)	(0.047)	(0.051)	(0.069)
Institute Type (IT)	Private = 0, Public = 1	β_5	0.042***	0.043***	0.078***	0.087**
			(0.076)	(0 .088)	(0.094)	(0. 127)
Result (R)	Division	β_6	0.030**	0.049**	0.075**	0.031
			(0.065)	(0.075)	(0.080)	(0.108)
Employment Type (ET)	Private = 0, Public = 1	β_7	0.55	0.082	0.043***	0.020*
			(0.077)	(0. .089)	(0.095)	(0.128)
Cognitive Ability (CA)	Has not Ability = 0, Has Ability = 1	β_8	0.039*	0.066	0.035*	0.138**
			(0.086)	(0.099)	(0.106)	(0 .143)
In-job Training (IJ)	Yes = 1, No = 0	β_9	0.020*	0.031	0.079**	0.051
			(0.074)	(0.085)	(0.091)	(0.122)
Duration of Work (WD)	Hour	β_{10}	0.121	0.216***	0.110	0.169**
			(0.019)	(0.023)	(0.024)	(0.033)
Cons		β_0	9.244***	9.832***	8.636***	7.923
			(1.043)	(1.209)	(1.289)	(1.734)
Number of Observations = 90			R^2 = 0.44	R^2 = 0.33	R^2 = 0.22	R^2 =0.27

*N.B.: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 Source: Authors Estimation, 2021*

Tests for Ordinary Least Square

Some specification tests have been performed to check the results of the model. These are - test for normality (Shapiro-Wilk test, normal probability plotting, Kernal density plotting, quantile normal plotting tests), test for multi-colinearity (variance inflating factor-VIF), test for specification error (link test), test for omitted variable bias (Ramssey test). In Table 3, it can be said that the residual of income and education is normally distributed but experience is not. On the other hand, the residuals of age, age2, sex, major, institute type, result, employment type, cognitive ability, in-job training and duration are normally distributed and the data are randomly collected. From the Figure 1 (a), it has seen that the income line is close to normality line, so the residual is normally distributed. Additionally, it can be commented from the Figure 1 (b), the income curve is close to normal distribution curve. So, error term is normally distributed and stable; and if the sample size is changed there is no change in normality. The Figure 1 (c), has shown that the quantile curve of income is close to the normality line, so there is high normality. From Table 4, it can be disclosed that the mean VIF of multiple regression is 1.37 which is less than 10 and all the variable's 1/VIF values are greater than 0.10 separately, so there is also no multi-colinearity. The P-value of hat square in link test is 0.559, which are greater than 0.05.



(a) (b) (c)

Figure 1. (a) Normal Probability Plotting, (b) Kernal Density Plotting, (c) Quantile Normal Plotting

Table 3. Shapiro-Wilk Test

Variables	Observation	*P*-Value
lnIncome	250	0.423
Education	250	0.319
Experience	250	0.030
Age	250	0.120
Age^2	250	0.171
Sex	250	0.159
Major	250	0.315
Institute Type	250	0.999
Result	250	0.700
Employment Type	250	0.999
Cognitive Ability	250	0.634
In-job Training	250	0.847
Duration of Work	250	0.790

So, the null hypothesis is accepted in both models, i.e. there is no specification error. Furthermore, the P-value is 0.36 in Ramssey test which is greater than 0.05. As a result, the null hypothesis is accepted, i.e. there is no omitted variable bias. The existing variables are explained the model moderately.

Table 4. Multi-colinearity Test (VIF)

Variables	**VIF**	**1/VIF**
Education	1.01	0.81
Experience	2.03	0.78
Age	1.11	0.16
Age^2	1.39	0.26
Sex	1.23	0.73
Major	1.37	0.76
Institute Type	1.24	0.78
Result	1.31	0.80
Employment Type	1.28	0.81
Cognitive Ability	1.22	0.82
In-job Training	1.07	0.83
Duration of Work	1.20	0.93
Mean VIF	1.37	

Table 5. Determinant of Education (First Stage)

Education (Schooling Year)	**Coefficient**
Age (Year)	0.311
Age^2 (Year)	-0.013
Employment Type (Private = 0, Public = 1)	0.019
Experience (Year)	0.354*
$Experience^2$ (Year)	-0.002
Duration of Work (Hour)	0.130
Gender (Male = 0, Female 1)	-0.339
Education of Family Head (Schooling Year)	0.433***
Members of Family (Number)	-0.223**
Mother's Education (Schooling Year)	0.072***
Constant	14.980
Observations	250
R^2	0.39

*N.B.: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 Source: Authors Estimation, 2021*

Estimation of 2SLS and Comparison the Outcome with OLS

In this section, the first stage result of 2SLS for income and lnincome is estimated, where instrumented variable is education and instruments are age, age2, employment type, experience, experience 2, duration of work, gender, education of head of the family, members of family, mother's education (Table 5). It can be found that experience, education of family head, member of family and mother's education have significant contribution in education attainment in Khulna city. The result of OLS and 2SLS coefficients of age, age2, employment type, experience, experience2, duration of work, gender, education and cognitive score is estimated in Table 6. The employment type, experience, duration of work and education variables has significant impact of income for both level-level and log-level of OLS and 2SLS. Here, government job

holders have high income than the private employee, because there are little opportunities of private job in Khulna city. Experience has significant effect on income. But after a certain period of time, the impact of experience is being negative. In addition, there are some scope of working overtime, that's why the duration of work has positive influence on income. Unfortunately, the gender discrimination in income level is high in Khulna city. Education has significant impact on level-level and log-level models of OLS and 2SLS. The variable cognitive ability is significant in level-level model of OLS. Here, the test of over-identification problem and F-value are measured. F-value is greater than 10, so, 2SLS is appropriate in this perspective but where the p-value of endogeneity test is greater than 0.05, i.e. we accept null hypothesis (the variable is exogenous) and conclude that there is no endogenous variable. So, the OLS is well-explained and it has given the most robust, reliable and consistent result for this research.

Table 6. Comparison between OLS and 2SLS and Result of Test

Variables	OLS Coefficient		2SLS Coefficient	
Income (BDT)	Level-level	Log-level	Level-level	Log-level
Age (Year)	1266.237	0.040	1279.952	0.040
	(1699.78)	(0.054)	(1638.765)	(0.052)
Age^2 (Year)	-12.521	-0.003	-12.956	-0.003
	(19.48)	(0.006)	(18.842)	(0.005)
Employment Type (Private =	-4639.643*	-0.148*	-4158.508*	0.140*
0, Public = 1)	(2890.17)	(0.093)	(2744.663)	(0.087)
Experience (Year)	822.926	0. 023*	919.369*	0.024
	(745.07)	(0.023)	(715.946)	(0.022)
$Experience^2$ (Year)	-26.893*	.008	-29.51414	-0.001
	(20.54)	(0.006)	(19.737)	(0.004)
Duration of Work (Hour)	782.443	0.029*	919.977*	0.032*
	(690.44)	(0.022)	(646.948)	(0.020)
Sex (Male = 0, Female 1)	-3051.348	-0.109	-3020.41	-0.110
	(2956.43)	0.094	(2843.25)	(0.090)
Education (Schooling Year)	2195.601***	0.084***	2767.061***	0.093***
	(664.43)	(0.021)	(1081.533)	(0.034)
Cognitive Score (Number)	2071.429	0.037	2105.036**	0.235
	(2068.02)	(0.066)	(1836.471)	(0.457)
Constant	43519.79	7.616	48680.600	7.552
	(39796.89)	(1.274)	(42564.330)	1.353
(Test of Endogeneity)			0.398	0.099
Durbin (score) chi2(1)			(p = 0.527)	(p = 0.752)
Wu-Hausman F(1,80)			0.355	0.088
			(p = 0.552)	(p = 0.767)
(Test of Over identification)			6.711	7.523
Sargan (score) chi2(2)			(p = 0.034)	(p = 0.023)
Basmann chi2(2)			6.366	7.206
			(p = 0.041)	(p = 0.027)
F-Value			13.703	13.703
Observations	250	250	250	250
R^2	0.24	0.29	0.22	0.29

*N.B.: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1 Source: Authors Estimation, 2021*

Hypothesis Testing of Income Level between 'Public' and 'Private' Institution

In this research, 250 educated and service holder respondents are taken as sample. The hypothesis (two-sample t test) is tested that there is any difference or not in income between the students of public and private institution (Table 7). The obtained t-value (t) is 5.19, the degrees of freedom (n-2) are 248, and the statistical significance (2-tailed p-value) of the two-sample t-test (Pr (|T| > |t|) under Ha: mean (diff)≠ 0), in which p value is 0.00. As the p-value is less than 0.05 (i.e., $p < .05$), it can be concluded that there is a statistically significant difference between two income groups of people from different institution. In other words, it can be explored that there is a significant difference in income level between the students of public and private institution. The difference is about BDT 11862.57 which is significant at 1 percent level because the p value (0.00) is less than 0.01.

Table 7. Two-sample t Test

Variable	Observation	Mean	Std. Err.	Std. Dev.	[95 percent Interval]	Conf.
Public	178	33891.84	1795.33	12567.33	30282.08	37501.60
Private	72	22029.27	1274.72	8162.21	19452.96	24605.58
Combined	250	28487.78	1292.79	12264.44	25919.04	31056.52
Difference		11862.57	2283.83		7323.93	16401.21
diff = mean (Public) – mean (Private)					t = 5.19	
Ho: diff = 0					degrees of freedom = 248	
Ha: diff < 0			Ha: diff ≠ 0		Ha: diff > 0	
Pr (T < t) = 1.00			Pr (|T| > |t|) = 0.00		Pr (T > t) = 0.00	

Source: Authors Estimation, 2021

Specific Education Policies in Bangladesh

Bangladesh has a good number of legal instruments to provide equity and access of all children to education. The constitution of Bangladesh ensures the need for universal education for all regardless of any special circumstances. Article 17 and 28 of the Constitution of the People's Republic of Bangladesh clearly mandates that the state should provide education to all without making any discrimination. Complying with all the international treaties, Bangladesh has committed to address inclusive education within the existing education policy. According to the UNESCO report, Bangladesh is signatory to the declaration of Education For All (EFA) in 1990, the Salamanca Statement and Framework for Action on Special Needs Education in 1994, the Dakar Framework for Action in 2000 and the UN Convention on the Rights of Persons with Disabilities-UNCRPD in which education is to be provided to all children with an inclusive approach (Ahsan & Burnip, 2007). Besides, Bangladesh also promised to achieve Millennium Development Goals (MDGs), which also enunciated the rights of all children into education through uniform system. The dominant legislations regarding education policy of Bangladesh are the Compulsory Primary Education Act, 1990, National Education Policy for the Disabled, 1995, Bangladesh Persons with Disability Welfare Act, 2001 and the National Education Policy, 2010. These instruments are considered as official commitment of the government towards education in Bangladesh.

Discussion

The result of the study has shown that education and experience has positive impact on income level of the service holder of Khulna region. But education has much effect on income than experience because the coefficient of education is higher than experience. The literature has also provided the same outcome that the

education has more influence on income level than the experience, because education is the first step to prove the skill of individual through the certificates, presentation power and instant idea generation capacity (Jiménez, et al., 2011). The lower income group people have more impact of education on income than the middle or higher income group of people. The income of service holder is also influenced positively by their major choice, institution type of education, result of the respondents, employment type of them and duration of work per day, their age, cognitive ability and in-job training. Previous studies have examined that good result, major choice, cognative ability, duration of work, training are important for the enhancement of income, but employment type has no effect on income (Salih, 2007). Father's and mother's education, family income, family type, migratory status has positive impact on education but the monthly education cost has negative impact on it. The outcome is similar to the analysis of previous study about how to create capital through education. Here, parents' education, family income, education cost are focused the major influential determinants of education (Schultz, 1960). The OLS is well-explained and provides consistent result than 2SLS. Furthermore, there is statistically significant difference in income level between the students of public and private institution. For the economic growth as well as development, it is always essential to improve the quality of education in public and private institution simultaneously (Yanez, 2012). This research has recommended that the educational facilities should be improved for attracting the people of Khulna to avail higher level of education. Not only the public institute, but also private institute should provide advance and systematic education as well as proper schools, college, concentrate teachers, scholarship facilities and so on. The cost of education in public and private college, universities should be reduced in order to ensure inclusive education. The service holder should be provided much in-job training for gathering more experience and the government should announce some improvement program of cognitive ability and different types of training. Father's and mother's education level should be enhanced to improve their consciousness and the educational career of their children. The education policies should be implemented in practical life through avoiding the corruption and discrimination. Lastly, the expenditure budget on education should be enhanced to introduce the digital education for all and to ensure inclusive education in Khulna.

Conclusion

The present study on factors of education and its impact on income provides the empirical evidences based on the cross-sectional data. The OLS and 2SLS regression of Mincerian income equation has estimated which supports the significant correlations between education and experience on income. The empirical results have also demonstrated that an additional year of education has stronger correlations with percentage change in income than an additional year of experience. It can be summarized that employment indirectly suggests that the students who underperform can correlate to lower incomes because these students do not have the same opportunities as those who are high performers in more education and experience. The relationship between education and cognitive ability and their interactions on income are indeed complex but provide positive result. Testing the hypotheses with the results shows that completing education from public institute provides higher income than private institute. Additionally, the socio-economic factors and policies are essential for education attainment which are identified in this study. Mainly, the reduction in education cost and enhancement of parents' education should be concentrated as major determinants of education attainment. The consciousness about education policies should be enhanced, so that people can understand what types of opportunities they can avail.

The previous literature has traditionally modeled a single academic variable with several demographic covariates to predict income. Building on past theoretical work, these existing studies focus on evaluating academic (education + employment) factors and their effects on income. However, there needs to be a model that captures multiple variables (along with demographic co-variables) and apply them on income. Given student preferences in major and employment choices, it is pertinent to determine which educational variables have strong impacts on earnings. This model distinguishes itself from past empirical work as it incorporates factors that labor and education economists have regressed separate into different models. This is the research

gap of this paper. Moreover, there is rarely any combined study on factors of education as well as the impact of education on income in Khulna city. Specifically, adding employment related variables change the weights of the major variables coefficients. This difference in coefficients implies that there is an effect between majors and employment selection. The effect implies that people who choose science or business majors are more likely to select employment that are higher paying, which is something that has not been previously studied. Having a higher result also predicts percent increases in income.

The models used in this research helps to explain the effects of education and experience as well as the other academic variables which factors are integral in getting into higher paying job. By studying this, we can have a better understanding of the relationships and be able to implement and support the investment in education and policy into the right direction. To this end, as the results contribute positively by incorporating new methods of depicting earnings, they can offer new bases for further research in the field of labor, inclusive education policy and economics.

Conflict of interest

This is a self-financed study and does not receive any form of grant. The purpose of the study is specially focused on identifying the factors and policies of education and its effect on the income level of people of Khulna city. Authors beware of not asking any type of sensitive questions to the respondents and their identity is not even disclosed in any stages throughout the study.

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