A Quantitative Study on Educational Inequalities in Bangladesh: An Appraisal

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Abstract: Educational inequality is a topical social problem in Bangladesh society whereas gender, administrative divisions, locality e.g. urban-rural area, level of education, type of school attended, school attendance, reasons of absence from schools, regional inequalities are remarkable among it. To find out the level of these inequalities, various statistical methods have been followed and a substantial amount of disparities have been marked which caused the inequalities in education sector in Bangladesh.

1. Introduction

Education is one of the basic needs of mankind. It empowers the individual to become a more skilled, productive and potential member of society. Education helps to develop the skills and abilities of human being to make the best use of one's potentials for the whole society. Therefore, education is termed as a human capital as it makes human being to human resource. The development and progress of a country is significantly associated with the quality of education that a country or society provides for its subjects. In brief, the development of human resource is an essential factor to ensure the transformation and advancement of society. But this is a seeding period of human life and that must be started at the beginning of life. At the early stage of human life, it has to be ensured by society to have the proper education facility for the proper development of human resource and at the same time, it has to ensure the accessibility and affordability to enter the educational arena like school and college for all the member of a society which is a real challenge for all. As education provides skilled and innovative labor force, the improper furnishing of educational structure brings one of the major causes of social inequality.

In Bangladesh, the scenario of education is quite frustrating. The rate of illiteracy is quite high, which leads significant social problems that pertain social inequality and this inequality is affecting the overall welfare of the individual as well as with other basic institutions like family, neighborhood. On the other hand, poverty issue can be addressed as a cause of illiteracy and it remains a great barrier to reduce the illiteracy rate and also leads to the social inequality. The aim of this study is to find out the cause of educational inequality. In this article, an attempt has been made to examine the relationship between a series of dichotomous dependent variables and a set of independent variables which had been selected and discussed. The main feature of the analysis is to identify the factor that affects education status of a household and to analyze the direction of

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their differentials. For achieving this goal, the author tried to find out all the factors behind it and then to examine the variables related to the factors, explain their propositions that effect on education to measure inequality.

To understand the inequality of education attaining situation in Bangladesh society, the following statistical methods like frequency analysis, percentage distribution, logistic regression, ordered logistic regression had been used as analytical tools. Some variables were specific to regional and national level. In order to grasp the above problem, a well known statistical technique –logistic regression and ordered regression analysis has been used with other common techniques of data analysis method. This is because in the logistic model, we need not make the distributional assumption about the independent variables and the effect of different types of regression variables caused no comparable difficulties. Socio-economic and demographic variables considered for the present analysis were confined to collect the Labor Force Survey (LFS) 2005-6 and Household Income and Expenditure Survey (HIES) 2005 data. The explanatory variables are mainly quantitative. Here some qualitative variables had been undertaken to facilitate better interpretation of some of the independent variables.

The following variables had been selected for this article to deal with educational level of the individual and the impact of education on other aspects of households. The items covered are literacy in all socially recognized components that are the sectors of emerging inequality i.e. gender, administrative divisions, locality e.g. urban-rural area, level of education, type of school attended, school attendance, reasons of absence from schools, etc.

2. The Literacy Rate

The term literacy is used in different ways in different quarters. 'Literacy is the ability to identify, understand, interpret, create, communicate and compute using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve his or her goals, develop his or her knowledge and potentials, and participate fully in the community to wider society.' [1] This definition defined literacy as the ability to read and write, with understanding , but the recent years in defining literacy the following national definition has been followed: *Literacy is the ability to read, understand, interpret, communicate and compute in verbal and written forms in varying contexts. It involves a continuum of learning that enables individuals to develop their potentials and knowledge base and to participate fully in community affairs and wider social and development context.* The assessment of the survey of this study also followed the same definition. Education is the major contribution of literacy, which provides inequality in all regard. In this part the major discussant questionnaire theme is Can you write a letter? Which religion do you belong to? What class have you passed? Have you received any training program? What is your gender? etc.

Table 2.1 **Determinant of literacy of employed persons aged 15 years and over: Logistic Regression Gender Variation**

Dependent variable: literacy (0-no; 1-yes)

Independent variable: gender; agegroup; religious; region

	Total	Male	Female
Female[a]	-0.389***		
Agegroup[b]			
15-24	1.414***	1.498***	1.304***
25-34	0.563***	0.867***	0.253***
35-49	0.139***	0.514***	-0.278***
50+	-0.386***	0.203***	-1.217***
Religion[c]			
Hindu	0.308***	0.355***	0.271***
Buddist	-0.407***	-0.307***	-0.537***
Christ	0.121	-0.0512	0.287*
Others	-1.940***	-1.823***	-2.163***
Region[d]			
Dhaka	0.00817	-0.0330	0.0519*
Khulna	0.212***	0.189***	0.238***
Rajshahi	-0.0778***	-0.0545*	-0.106***
Barisal	-0.0492*	-0.0752*	-0.0244
Sylhet	0.0730**	0.106**	0.0504
_cons	-0.204***	-0.440***	-0.339***
N	153304	78219	75085
Adjusted R^2	0.095	0.0836	0.096

a reference=male; b reference=age5-14; c reference=Islam; d reference= Chittagong

The logistic regression table 2.1 provides the individual's literacy information (1 for literate, 0 for illiterate) by the relation with independent variables i.e. gender, age, religion and region. If we observe the table, we found that male literacy is in dominant position than women (odds Ratio, or), it is 0.68 ($e^{-0.389}$=0.68, so it

represents that women literacy is lower than men. Literacy according to various age group where age 5-14 is reference group, the literacy condition of age group 15-24 is dominating 4.11 ($e^{1.414}$=4.11). Age group 25-34, 35-49, and 50+ literacy score is with comparison of age group 5-14 is 1.76 ($e^{0.563}$, .15 ($e^{0.139}$, 0.68 ($e^{-0.386}$) .But the literacy condition of age group 15-24 is the best, 25-49 age group also better condition than 5-14 group.50 + age group literacy condition is worst, therefore it is in negative position, even lower than 5-14 age group.

Literacy by religion, where Islam is the reference group, Hindu religious population's literacy score is 1.36 ($e^{0.308}$) , where Buddhist score ($e^{-0.407}$) , and Christian's score 1.13 ($e^{0.121}$) .Here by comparison of Islam religious people, Hindu and Christian religious population's literacy condition is comparatively better, and Buddhist condition is comparatively worse.

Literacy by regional diversity, where Chittagong division is the reference, Dhaka division's literacy score is 1.01 ($e^{0.00817}$) The figure is not statistically significant, Khulna division 1.24 ($e^{0.212}$) , Rajshahi、Barisal、Sylhet, these three division's literacy score (0.93、0.95、1.08) is better than Chittagong division；but Rajshahi and Barisal division's condition is not likely better that of Chittagong division.

Here we observed the literacy condition of each independent variable by age group. From the male- female view point, all information of male female is straight. In view of age where 5-14 is the reference group, now we observe whether the gender literacy by the impact of various independent variables. Overall, men and women as reflected in the overall information and data was consistent. Age 5-14 year as a reference, several other male age groups in literacy is better than the 5-14 age group; the literacy situation of women 35-49, 50 + age groups were lower than the reference i.e. 5-14 age group. In religious beliefs, the gender point of view, the male literacy status of Hindu is better than Islam, and Buddhism, Christianity, are worse than Islam. Where Hindu and Christian women literacy status is better than Islam and Buddhism is worse   than   Islam. Reflects the regional variables with the overall consistency of information, the literacy of male and female in Dhaka, Khulna, Sylhet areas is better than Chittagong, and Rajshahi, Barisal areas literacy situation is worse than that of Chittagong.

3. Level of Education:
Education is a continuous process. It runs step by step to make people knowledgeable and cognitive, but in Bangladesh, student dropout rate is quite high. Dropout rate of different stage of education makes different social status and various social dignities and it is one of the major causes of social inequality. This part denotes the level of education attaining situation by different sector. From the questionnaire the major question that had been asked to the respondent is: what class have you passed? What is your age group? What is your present working status? etc.

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Table 3.1 **Level of education of employed   aged 15 years and over: Ordered Logistic Regression gender variation**

Dependent variable: edu level（0: no class; 1 : Class1-8; 2: Class9-secondary; 3: Graduate+）

Independent variable: gender; agegroup; religious; region

Total/Male/Female

	Total	Male	Female
Female[a]	-0.437***		
Agegroup[b]			
15-24	0.931***	0.944***	0.952***
25-34	0.142***	0.501***	-0.234***
35-49	-0.387***	0.0307	-0.874***
50+	-0.991***	-0.330***	-1.854***
Religion[c]			
Hindu	0.313***	0.322***	0.312***
Buddist	-0.485***	-0.392***	-0.613***
Christ	0.149	0.0282	0.278*
Others	-2.391***	-2.182***	-2.758***
Region[d]			
Dhaka	-0.248***	-0.233***	-0.275***
Khulna	-0.179***	-0.148***	-0.230***
Rajshahi	-0.450***	-0.383***	-0.541***
Barisal	0.135***	0.0935***	0.179***
Sylhet	0.135***	0.134***	0.147***
_cut1	-1.108***	-0.812***	-1.017***
_cut2	1.102***	1.289***	1.374***
_cut3	3.385***	3.372***	4.092***
N	153303	78219	75084
Adjusted R^2	0.091	0.084	0.082

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

a reference= male; b reference= age5-14; c reference= Islam; d reference= Chittagong

In this section, analysis of the dependent variable of the respondent's level of

education is a sequence of variable (ordered variable: 0: no class; 1: Class1-8; 2: Class9-secondary; 3: Graduate +), the independent variables are gender, age, religion, region, using the statistical method is logistic regression sequence (ordered logistic regression).

At first if we look at the overall data situation, in regard of the age group of 5-14, gender and level of education of women situation is lower than men. Level of education is higher at the age group of 15-24 and 25-34. Whereas age group 35-49 and 50+ aged level of education is comparatively low.

In the view of religious belief, Hindu religious population's level of education is higher than Islam religious people, whereas Buddha and other religious people's level of education is lower than Islam religious people. In this regard Christian religious people's level of education is higher than Islam religious people which not statistically significant. To view the regional diversity, Dhaka, Khulna and Sylhet division's level of education is lower than Chittagong and Barisal and Rajshahi division's level of education is higher than that of Chittagong.

We divided genderwise factors of the respondent's education level. First, male respondents, 50 years old age group received less education, while the other age group's education level is higher than the reference group (5-14). From the a'l age group, only 15-24 aged women level of education is higher than the reference group, whereas the other aged group's level of education is lower than the reference group. In regard of religious beliefs, whether male or female, data results are more consistent with the overall results. On the regional variables, men and women situation is the same as before i.e. Dhaka, Khulna, Rajshahi these three areas education is lower than that of Chittagong, whereas Barisal, and Sylhet region's individual level of education is higher than that of Chittagong division.

Table 3.2 Determinant of level of education by age variation: ordered logistic regression

Five age group

Dependent   variable: education   level（0: no   class; 1   : Class1-8-; 2: Class9- secondary; 3: Graduate+）

Independent variable: gender; religious; region

	Age: 5-14	Age: 15-24	Age: 25-34	Age: 35-49	Age: 50+
Female[a]	0.0910***	-0.0954***	-0.567***	-0.694***	-1.252***
Religion[b]					
Hindu	0.112**	0.176***	0.371***	0.461***	0.379***
Buddist	-0.486***	-0.552***	-0.349**	-0.570***	-0.779***
Christ	-0.0726	0.321	0.552*	0.299	-0.642*
Others	-2.569***	-2.634***	-2.568***	-2.063***	-2.589***

Region[c]					
Dhaka	-0.237***	-0.188***	-0.298***	-0.304***	-0.365***
Khulna	-0.257***	-0.0395	-0.241***	-0.237***	-0.301***
Rajshahi	-0.244***	-0.270***	-0.636***	-0.675***	-0.570***
Barisal	-0.0848	0.160***	0.165***	0.230***	0.102
Sylhet	0.121*	-0.00197	0.0378	0.219***	0.418***
_cut1	-1.462***	-1.657***	-1.094***	-0.680***	-0.369***
_cut2	2.800***	0.233***	0.478***	0.853***	1.116***
_cut3	7.873***	3.758***	2.269***	2.642***	2.920***
N	43281	30108	26389	31985	21540
Adjusted R^2	0.069	0.071	0.064	0.077	0.065

a reference= male;   b reference= Islam;   c reference= Chittagong

This section is divided into five respondents overall age group, which investigated the effect of their level of education factors. Data show, in the 5-14 age group, women by educational level are slightly higher than men, but women of over the age of 15 are lower than men by level of education; in regard to religious beliefs, no matter what age are, the Hindus are more educated than the Muslims, especially the highest level of education belonging the ages of 35-49 years Hindu people; Buddhist believers level of education were lower than the Muslim; Christians 15-49 age group's level of education are higher than the same Muslim age group, and Christian 5-14 years and 50 years old age group were lower than the level of education of the same age group of Muslim people; regionally, Dhaka, Khulna, Rajshahi these three regions' age group level of education was lower than Chittagong the reference group, while the 15-49 age group of Barisal district's level of education is higher than the same age group, in regard to education level, the level of education of all age group of Sylhet area is higher than the reference group of Chittagong division.

Table 3.3 Incidence of Poverty (CBN) by Literacy and Educational Level-2005 [2]

Characteristics of Households	Percentage of Population Below Poverty Line					
	2005			2000		
	National	Rural	Urban	National	Rural	Urban
1	2	3	4	5	6	7

1.Using the Lower Poverty Line						
National	25.1	28.6	14.6	34.3	37.9	20.0
Literacy status						
Illiterate	36.3	37.5	29.9	46.3	47.4	39.4
Literate	12.3	15.3	6.7	18.4	22.6	7.6
Educational level	36.3	37.4	30.3	46.1	47.2	39.1
	19.3	21.8	12.6	27.6	30.3	16.1
No education	15.8	17.5	11.1	22.8	26.2	11.8
Completed class –I–IV	4.4	7.1	1.9	7.2	10.9	1.6
Completed class –V–IX						
Completed class SSC+	40.0	43.8	28.4	48.9	52.3	35.2
2. Using the Upper Poverty Line	54.7	55.1	52.3	63.3	63.4	62.6
	23.0	27.0	15.7	29.8	34.6	17.7
National	54.7	55.0	52.8	63.1	63.2	62.3
Literacy status	37.5	39.2	33.0	41.1	41.8	38.0
	29.0	30.9	23.8	35.8	39.1	25.4
Illiterate	9.3	12.2	6.5	15.1	21.4	5.7
Literate						
Educational level						
No education						
Completed class –I–IV						
Completed class –V–IX						
Completed class SSC+						

Estimates of incidence of poverty (CBN) by educational status using lower and upper poverty line of 2000 and 2005 have been presented in table-3.3.

Historically, incidence of poverty is high among the illiterates. The 2005 survey findings revealed the same fact. In 2005, the estimates of HCR by literacy status,

using the upper poverty line were 54.7 percent for the illiterate and 23.0 percent for the literate. It was 31.7 percent higher among the illiterate than the literate.

Using the lower poverty line HCR was 36.3 percent for the illiterate and 12.3 percent for the literate. HCR was 24.0 percent higher among the illiterate than that of the literate. In 2000, it was 46.3 percent for the illiterate and 18.4% for the literate.

The HCR of incidence of poverty by educational status showed a negative correlation with educational status, poverty incidence decreases as educational status increases. The estimates of HCR using the upper poverty line showed 54.7 percent for no education, 37.5 percent for grade I-IV, 29.0 percent for grade V-IX and 9.3 percent for S.S.C and above. The estimates of HCR using the lower poverty line recorded 36.3 percent for no education, 19.3 percent for grade I-IV, 15.8 percent for grade V-IX and 4.4 percent for the S.S.C passed and above.

4. Training received

"There are, ultimately, only two ways in which a person's qualifications come about: through inherent capacity or through training......... In many cases, however, talent is fairly abundant in the population but the training process is so long. Mostly, and elaborate that relatively few can qualify." [3]

This quote indicates us of the necessity of training and its scarcity in our society. In Bangladesh the above quotation is very much appropriate. This part represents the training attaining situation of Bangladeshi population regardless locality and gender variation.

Table 3.1 Percentage of Population aged 5 years and over by training received

Training received	Bangladesh			Urban			Rural		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
No training	96.64	95.47	97.86	93.48	91.73	95.27	97.63	96.62	98.68
Vocational/technical	1.10	1.11	1.09	2.85	2.88	2.82	0.55	0.56	0.55
Computer	0.07	0.10	0.04	0.20	0.29	0.11	0.03	0.04	0.02
Motor Driving	0.17	0.31	0.02	0.25	0.47	0.02	0.14	0.26	0.02
Shorthand/Type	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00

Tailoring/garments	0.35	0.42	0.27	0.74	0.77	0.71	0.22	0.31	0.13
Welding/electrical	0.07	0.13	0.00	0.14	0.27	0.00	0.05	0.09	0.00
Motor mechanics	0.02	0.04	0.00	0.02	0.04	0.00	0.02	0.04	0.00
Job training	0.65	1.03	0.27	1.14	1.79	0.47	0.50	0.79	0.20
Nursing	0.19	0.34	0.04	0.72	1.36	0.05	0.03	0.02	0.03
Youth dev. training	0.29	0.26	0.32	0.30	0.39	0.20	0.29	0.23	0.36
Others	0.44	0.79	0.08	0.16	0.00	0.32	0.53	1.04	0.00
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Training received by population 5 years and over has been presented in Table 3.1. It is observed from the table that, at the national level only 3.36 percent received some sort of training. Such percentage for male was 4.53percent and 2.14 percent for the female.

There exists urban-rural variation in percentage of population receiving training. In the urban area, 6.52 percent received training as against 2.37 percent for the rural area. Among males, in the urban area, 8.27 percent received some sort of training compared to 3.38 percent in the rural area. For the females, in the urban area, 4.73 percent received training as against only 1.32 percent for the rural area.

It is seen from the table that, at the national level the highest 1.10 percent received training in vocational/technical disciplines followed by on job training (0.65percent), tailoring/garments training (0.35 percent) and training received from youth development directorates.

5.   Data Analysis and Conclusion

Bangladesh is a country where different kinds of religious group live. In this regards, from the cultural point of view, we can say that Bangladesh is a diversified society. The cultural heredity and religious diversity make Bangladesh a unique nation in the world map. To enhance these hereditary traditions, education is the *sine quo non*. But in Bangladesh, its literacy rate is only 46.9 per cent of the working population as per the statistics we are analyzing. This rate was substantially lower at the beginning of Bangladesh era. Then period most of the people use thumb-mark instead of signature for any kind of economic transaction or social deed e.g. land tenancy, money lending, money exchange etc. This increases the cheating incident in the society. In these circumstances, it can be said that the illiteracy is really a social problem.

In the point of view of general inference of the statistical analysis, we can draw some comments:

As per the data table, among this working population of the data we found that the difference of literacy rate between Rural and Urban is remarkable so deceiving incident is happening more in rural areas whereas this incidence is also remaining in urban area.

Further, the difference between male and female literacy rate is quite significant, the condition of women is more critical than the male workforce.

The rural women are more vulnerable than those of urban. It makes social inequality in basic human rights i.e. getting job, legislative right, decision making capacity, skill development, self confidence, awareness of dignity between husband-wife relationships etc ---which are very much related to education i.e. proper education attainment condition.

The literacy rate varies between rural and urban areas among six administrative divisions. The highest literacy rate (aged 5 years and above) is found in Khulna division.

To attain education also depends on family's economic condition, poverty level, cultural background etc which might be a relevant topic of further studies. But at the same time Barisal remained the highest degree passed position.

Religious factor also draws a strong role in literacy component, because under the same cultural background (except some tribal culture), the population of Bangladesh also have strong religious behavior which leads a strong role to literacy drive. Among the four major religious groups, the Hindu literacy rate is the highest rate in Bangladesh in respect of religious cluster. And the Buddhist religious group, the lowest one among all which arose as a cause of education attaining inequality.

Bangladesh society, based on mostly patriarchy, and most of the married and workable women are kept as housewives who are not directly involved with economic activities whether household activities are not regarded as economic activities yet. So that most of the discretion right of a family is in the hand of male members; either father, the head of the family or the brother, the earner. So, the decision of taking his daughter or sister into the education also comes from the male members of the family. So dropout rate of female student of different level of education is also severe.

In Bangladesh, there is quota system in educational institutions for the minorities to get admitted in college/university, but unfortunately it is not formulated with the help of any statistical ground and even not applicable for religious minorities.

There is also early marriage tradition in the society, which also enhance women dropout rate. After marriage, the husband and his family take decision whether the woman will continue her study or not. The decision depends on husband's

family tradition, or cultural background, religious drawbacks and other related circumstances.

From above analytical inferences, we can conclude that the percentage of female is absolutely lower and the rural women are much more deprived than urban women. It enhances decision making inequality and the effect of this inequality there arise huge disparity of male-female education attaining variable.

In the professional workforce like graduate engineers and physicians, the percentage is lower. The rural percentage is less than that of urban. Again, the percentage of female professional workforce is significantly lower in rural area than that of urban area, and graduate Engineer/ physician of rural area is rarely found. In Bangladesh Engineering profession is mostly male dominating.

The basic education system of Bangladesh is not the same. The educational institutes are not run by the same system either.

As education is one of the determinants of inequality, so education institutions and the education system have a great impact on inequality.

Incidence of poverty by educational status showed a negative correlation with educational status, poverty incidence decreases as educational status increases.

In regard to training attaining condition, huge percentages of labor force has no any professional training or have no ability to avail any professional training to enrich the professional skills and among the total work force, only fewer percentages have vocational training/technical and computer training.

6. References

[1]   UNESCO Dhaka Primary Education related Report 2008, pp 4-13

[2]   HIES 2005 Report, pp 96, BBS

[3]   Kingsley Davis and William E Moore (1945), 'Some Principles of Stratification', *American Sociological Review*, 10; pp 242-249.