SOCIAL FACTORS UNDERLYING GENDER VARIATION OF SCHOOL ENROLLMENT: CASE OF RURAL BANGLADESH

July 1995

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ABSTRACT

This paper explores gender variation in school enrollment of rural children and identifies social factors underlying such variation. Data originated from a representative sample survey of 5,163 children aged 6-15 year in 87 villages in Manikganj, Bangladesh. Findings reveal that enrollment rate was higher among boys than girls ($p<0.01$). Remarkable socioeconomic disparities in enrollment existed among the children of both sexes and gender variation was much higher in socioeconomically better off households. Five factors such as age of child, mother's education, household land size, labor sale status and housing condition appeared to be important determinants of enrollment. Mother's education contributed most to promote enrollment among girls while land ownership promoted enrollment among boys. The multivariate analysis reveals that girls were 15 percent less likely to be enrolled than the boys ($p<0.05$) when other variables such as age of child, mother's education, household land size, housing condition and labor sale status are controlled. It is concluded from this study that measures such as motivation of parents to send their daughters to schools and targeting poorer children for enrollment should be undertaken to minimize this gender disparity.

INTRODUCTION

Rich in human resources, Bangladesh is characterized by wide spread illiteracy and economic underdevelopment (WECFA, 1990). Though Bangladesh achieved its independence about two and a half a decade ago no appreciable changes have been made in the rural lives in Bangladesh.

The education sector in Bangladesh is relatively underdeveloped (World Bank, 1988). The country ranks 107th among 131 countries in literacy (UNICEF, 1989). The current literacy rate of the country is 24.9% for all ages and 32.4% for those seven years and above (Bangladesh Bureau of Statistics, 1994). The decennial censuses show that literacy situation increased in a lower rate, 21.5% in 1961 to 27.8% in 1981 for persons five years and above (Bangladesh Bureau of Education Information and Statistics, 1992).

This unsatisfactory achievement in education is caused by the lower school enrollment rate of the children. The World Bank (1988) publication shows that, the current enrollment rate is only 60% in primary level, 18% in secondary level and 4% percent in higher education. Whereas the regional (SAARC) averages are 73, 23 and 5 percent respectively. The dropout rates in different classes of primary schools continue to be high. Nearly one fourth of students leave at the end of one year, about 60% dropout before starting fourth grade, and 88% at the end of fifth grade (Bangladesh Bureau of Statistics, 1994). One reason behind this poor situation may be the amount of money spent for education. Bangladesh spends only 2.2% of its GNP on education compared with the regional average of 4.4%.

There is also a significant disparity in the allocation of resources in education between rural and urban areas. Women in general have a disproportionately lower share in education. About 85% of the rural women are functionally illiterate (UNESCO, 1989). Though the government and the non-government organizations (NGOs) are trying to raise literacy rates, the non-enrollment and dropout rates in the rural areas, especially

among the girls, have remained very high in Bangladesh.

Different studies (Quader & Ahmed, 1980; Haque et al, 1983; Ahmed & Hasan, 1984) and census results show that the school enrollment of children is not equally achieved by all sections of the society in Bangladesh. In these studies no gender pattern on socioeconomic differential have emerged.

The objective of this paper is to explore the extent of gender variation in school enrollment of the children in rural Bangladesh. This paper also identifies the socioeconomic factors that determine such variation.

METHODS AND MATERIALS

BRAC, the largest non-governmental organization in Bangladesh has been operating a vital registration system known as *Watch Project* in six rural unions of Manikganj and Joipurhat districts since 1986-87. The system was introduced to monitor changes in various aspects of rural lives of Bangladesh. Each of the households in the study areas has been regularly visited once in a month to record and update different changes in their lives.

Data were obtained from a population of 57,489 in 11,943 households of 87 villages in three unions of Manikganj. Manikganj is 76 km. away from Dhaka, the capital of Bangladesh. Different NGOs as well as the government have been intervening development projects in Manikganj for a long period. The system has been generating information on school enrollment of the children aged 6-16 twice a year since 1991. The data of one fifth of the children, collected in October 1994, were analysed in this paper. These children were selected systematically with a random start. A total of 5,163 children were interviewed

Definition of variables

The current enrollment status of the children is the dependent variable for this paper. The explanatory variables are age and sex of the children, years of schooling completed by mother, ownership of land by the households, labor sale status, housing condition and religious belief of parents. The measurement of the variables are given bellow:

Variables	Measurement
Enrollment	Current enrollment status of children (Enrolled, Not enrolled)
Age	Age of children (6-10, 11-16 years)
Sex	Sex of children (Boy, Girl)
Mothers education	Years of schooling completed by mother (No schooling, 1-5 years, 6+ years)
Land	Households ownership of land (Landless, 1-50, 51-200, 201+ decimals)
Labor	Labor sale status of the household (Sale, Not sale)
Housing	Housing condition of the household (Bad, Good)
Religion	Religious belief of the parents (Muslim, Non-Muslim)

Data analysis

To examine the independent contribution of different explanatory variables to enrollment, cross tabular bivariate analysis of the data was done separately for boys and girls. To assess the relative influence of the whole set of explanatory variables multivariate logistic regression analysis was considered. The models were estimated by using the software SPSS for Windows. Stepwise approach was used and the models were selected by forward selection. Odds ratios of each of the regression coefficients

were also calculated to predict the enrollment of the children. All these analysis were done separately for boys, girls and overall data set.

RESULTS

General characteristics of the children

No significant differences were observed in the general characteristics among boys and girls (Table 1). The mean age of the interviewed children was slightly higher for girls (11.2 years) than boys (11.1 years). Though mean years of schooling of mothers was slightly higher for boys (1.3 vs. 1.2), the proportion of mother never attended in any formal school was 22% for boys and 20.1% for girls. Proportion of households surviving on labor selling was 40.4% for boys and 40.8% for girls. Proportion of landless households was more for girls (49.1%) than boys (47%) and so mean amount of land was more for girls households than boys households (100.9 and 98.5 decimals respectively). Housing condition of more than two third of the respondents were reported as good. Proportion of good housing condition was slightly higher for boys than girls (62.2% vs. 61.8%). In respect to religious belief of the parents, equal distribution was found for both boys and girls households.

Enrollment situation: bivariate analysis

Table 2 shows that only 72.3% of the study children aged 6-16 years were found currently enrolled at the time of interview. Girls (70.6%) were found less likely to be enrolled than boys (73.9%). This difference was found statistically significant ($p<0.01$).

The enrollment rate significantly varied ($p<0.01$) by the age of both boys and girls. The enrollment rate was 45% among the children of age six that gradually increased and raised its peak at 88.9% at age 11 and then declined to 53.3% at age 16. When age specific enrollment rate was differentiated by sex, boys were found more likely to be enrolled than girls in both primary (6-10 years) and secondary (11-16 years) schooling age. The difference was statistically significant among the children of younger age

group. It is to be mentioned that for both boys and girls, older children were significantly more enrolled than younger children.

The years of schooling of mother showed significantly ($p<0.01$) positive effect on enrollment of their children. The gender difference in enrollment was found significant ($p<0.05$) among those children whose mother had no schooling. Surprisingly, among the mothers who had education of six or more grade, girls were more likely to be enrolled than boys, though this difference was not statistically significant.

The children of labor selling households were found less likely to be enrolled than the children of non-labor selling households ($p<0.01$). The gender disparity in enrollment was significant ($p<0.01$) among the non-labor selling households.

Household's ownership of land was found positively associated with enrollment of the children of both sex ($p<0.01$). The gender variation was observed significant ($p<0.01$) among those children whose households had more than 200 decimals of land.

The housing condition was found positively associated with enrollment rate ($p<0.01$). Children with good housing condition was more likely to be enrolled than the children with bad housing condition. Significant gender disparity was observed in those households where there was good housing facility ($p<0.05$).

Religious belief of the parents had no influence on enrollment of the children. But significant ($p<0.01$) gender disparity existed among the Muslim children under study.

Multivariate analysis

The regression coefficients for the best models are displayed in Table 3 with their respective odds ratios. Chronology of occurring the explanatory variables in the fitted models are also shown in Table 4. For overall sample, logistic regression model suggests that there is a significant gender disparity in school enrollment of the study children ($p<0.05$). Girls were found 16% less likely to be enrolled than their counterpart boys, if other explanatory variables are held constant. The overall sample also shows

that, labor sale status of the household was the most important determinant of school enrollment of the study children. Children of non-labor households were 41% more likely to be enroiled than the children of labor households. But when the regression models were fitted for boys and girls separately, labor sale status of the household was found as fourth important determinant for both the models. These models indicate that, children of non-labor households were 45% and 38% more likely to be enrolled than the children of labor households respectively, for boys and girls.

Boys model shows that households' ownership of land was the most important determinant for their enrollment in school. On the other hand, girls model shows that it was mothers education. The aggregate model suggests, as households' ownership of land increased the enrollment rate also increased significantly. Similar scenario is also reflected by both boys and girls models. The difference between boys and girls models is that the rate of increase in enrollment rate with the increase of households land size was more for the boys than the girls. The boys of the households with more than 200 decimals of land were 130% more likely to be enrolled than those of landless households. On the other hand, this increment was only 56% for the girls. Girls of the mothers with more than sixth grade of education were 356% more likely to be enrolled than those of non educated mother. On the other hand, this figure was 199% for boys.

Age of children was also found as a determinant of enrollment for both boys and girls. The aggregate model suggests that, the secondary school aged (11-16 years) children were 49% more likely to be enrolled than primary school aged (6-10 years) children. Separately, this figure was found 44% for boys and 53% for girls.

Housing facility had equal influence on enrollment for both boys and girls. On an average, children with good housing facility were 18% more likely to be enrolled than the children with bad housing facility.

Parents religious belief was found as an unimportant factor in determining the enrollment of the children. Constants of the regression models suggest that, if all the explanatory variables viz , age mothers education, labor sale status, housing condition,

land size and religion were held constant, boys were also more likely to be enrolled in school than their counterpart girls.

DISCUSSION

The school enrollment rate rural children in Bangladesh is still unsatisfactory. This paper reveals that, 27.7% of the children of age 6-16 years was never enrolled or dropped out from schools in three unions of Manikganj district. Significant gender disparity was also observed in the study areas. Like other public institutions, the utilization of rural schools has also demographic and socioeconomic preferences in enrolling students (Like Minded Group, 1990). Although the enrollment of most schools are open to all children of the community, and the program efforts to raise enrollment has remained to attract children regardless of class and gender, the actual enrollment figures show a wide variation by age and socioeconomic origin (Hadi, 1994) as well as gender.

Girls were found less likely to be enrolled than boys in all other social groups except the girls of educated mothers (sixed grade or more). These discrepancies were not statistically significant for all social groups. One interesting finding is that, older children were proportionately more enrolled than younger children. Gender variation was more among younger children. This may be due to NGO intervention in the study areas, specially BRAC's Primary Education for Older Children (PEOC) which confirms 70% share for girls. Mother's education, housing condition and land ownership showed positive influence on school enrollment. The results also reveal that economically better off children were the subject to gender disparity compared to the poorer children. This may be due to absence of any intervention which can reduce gender inequality in better off households.

Regression analysis explores that, except gender disparity, five other variables have been found as the determinants of school enrollment of the children. Of them, one is individual variable (age), one is parental variable (mothers education), and the other

three are household variables (land, labor, housing). It was observed that labor sale status of the household was the most important determinant to improve enrollment for all the children, but separately it was land ownership for the boys and mothers education for the girls. The odds ratios of the boys and girls models explores how mothers education contributed more to promote girls enrollment and land size of the household promoted boys enrollment Though chronology of occurring of the explanatory variables in the fitted regression models are slightly different for boys and girls but the overall determining factors are the same. Which implies that, some rearrangements of these social factors or ensuring equal opportunity in school enrollment of the children of all social classes (i.e., laborers and non-laborers; landless and landowners) may confirm the enrollment of all children. This may reduce the gender gap in the study area. Otherwise as the children of better off households are the subject to gender disparity, initiatives may be taken to aware the parents of these households on this issue. To enhance enrollment female education should be emphasised. The policy makers and educationist should consider the social barriers specially rich-poor differentials hindering school enrollment as well as gender disparity in the rural lives in Bangladesh.

ACKNOWLEDGMENT

I am grateful to those staffs of Watch project who were engaged in collecting, computerizing and editing of the data used in this paper. Thanks are due to Dr. Abdullahel Hadi, the co-ordinator of the project for his kind co-operation. We also thank to Mr. Hasan Shareef Ahmed for editing the earlier draft of this report.

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Table 1: Socio-economic characteristics of the sample children by sex.

Socio-economic characteristics	Boy (n=2689)	Girl (n=2474)	Level of significance
Mean age	11.1	11.2	ns
Mothers mean years of schooling	1.3	1.2	ns
Percent of mother ever attended school	22.0	20.1	ns
Percent survive on selling manual labor	40.4	40.8	ns
Mean amount of land (in decimal)	98.5	100.9	ns
Percent of landless families	47.0	49.1	ns
Percent of household with good housing facility	62.2	61.8	ns
Percent non-Muslim	11.6	11.6	na

Note: ns= not significant na= not applicable

Table 2 Enrollment rate by different socioeconomic characteristics.

Socio-economic characteristics	All children	Boy	Girl	Remarks
Age (in years)				
6-10	67.7	69.5	65.6	p<0.05
11-16	76.1	77.5	74.7	ns
Level of significance	*p<0.01*	*p<0.01*	*p<0.01*	
Mothers education				
No education	68.0	69.6	66.4	p<0.05
Class I -V	86.8	88.3	84.9	ns
Class VI +	91.3	90.9	91.9	ns
Level of significance	*p<0.01*	*p<0.01*	*p<0.01*	
Labor sale status				
Sale	62.5	63.7	61.2	ns
Do not sale	79.0	81.0	76.8	p<0.01
Level of significance	*p<0.01*	*p<0.01*	*p<0.01*	
Land size (in decimal)				
Land less	64.9	66.1	63.7	ns
1 -50	70.7	70.7	70.7	na
51 - 200	79.7	81.8	77.4	ns
201 +	85.2	88.5	81.4	p<0.01
Level of significance	*p<0.01*	*p<0.01*	*p<0.01*	
Housing condition				
Bad	65.2	66.6	63.6	ns
Good	76.7	78.4	74.9	p<0.05
Level of significance	*p<0.01*	*p<0.01*	*p<0.01*	
Religion				
Muslim	72.3	74.2	70.2	p<0.01
Non Muslim	72.5	72.5	72.4	ns
Level of significance	*ns*	*ns*	*ns*	
All	72.3	73.9	70.6	p<0.01

Note. ns- not significant na- not applicable

Table 3. Logistic regression analysis of enrollment.

Explanatory Factors	Aggregate Model		Boy Model		Girl Model	
	Reg. Coef.	Odds Ratio	Reg. Coef.	Odds Ratio	Reg. Coef.	Odds Ratio
Age (in years)						
6 - 10		1.00		1.00		1.00
11 - 16	0.40*	1.49	0.37*	1.44	0.42*	1.53
Sex			na		na	
Boy		1.00				
Girl	-0.16$^{\diamond}$	0.85				
Mothers education						
No education		1.00		1.00		1.00
Class i- V	0.92$^{\wedge}$	2.50	0.98$^{\wedge}$	2.67	0.85$^{\wedge}$	2.33
Class VI +	1.31*	3.69	1.10*	2.99	1.52*	4.56
Land size (in decimal)						
Land less		1.00		1.00		1.00
1 -50	0.18$^{\bullet}$	1.20	0.11	1.12	0.25$^{\bullet}$	1.29
51 - 200	0.49*	1.64	0.56*	1.76	0.43*	1.54
201 +	0.62*	1.87	0.83*	2.30	0.44*	1.56
Labor sale status						
Sale		1.00		1.00		1.00
Do not sale	0.34*	1.41	0.37*	1.45	0.32*	1.38
Housing condition						
Bad		1.00		1.00		1.00
Good	0.17$^{\diamond}$	1.18	0.17$^{\bullet}$	1.19	0.17$^{\bullet}$	1.18
Constant	0.16$^{\diamond}$		0.14		0.02	

Note: $^{\bullet}$p<0.10 $^{\diamond}$p< 0.05 * p<0.01 na= not applicable

Table 4. Chronology of occurring the explanatory variables in different fitted models.

Models	Steps					
	First	Second	Third	Forth	Fifth	Sixth
Aggregate Model	LABOR	MEDU	LAND	AGE	SEX	HOUSE
Boy Model	LAND	MEDU	AGE	LABOR	HOUSE	
Girl Model	MEDU	LAND	AGE	LABOR	HOUSE	