Levels, Pattern and Socio-economic Determinants of Enorollment in Formal Schools of the Graduates of BRAC's Education Programme

Samir R. Nath

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Abstract

BRAC has been operating two models of primary education for the children of poor households in Bangladesh since 1985. After graduation from BRAC schools, these children enroll in formal schools for further education. This study identified the level, pattern and determinants of enrollment in formal schools who graduated from BRAC schools. Information of 1,259 children was collected at the end of 1995. Both bivariate and multivariate analyses were performed. This study reveals that about 80% of the graduates of BRAC's education programme were continuing their education in formal schools. No gender variation in enrollment was found. Findings also indicated that younger graduates whose mothers have some schooling and who were non-eligible for BRAC membership were more likely to get further education in formal schools compared to other groups. Availability of formal school in their own village was also found as a determinant of girls enrollment. Considering the underdeveloped socio-economic condition of Bangladesh, this study concludes that enrollment rate of the graduates was satisfactory. Measures such as motivation to the parents and supervision of the programme organisers (POs) of BRAC may be taken for further improvement of the current situation.

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Introduction

One of the major educational problems of developing nations is the high percentage of students who drop out before completing a particular cycle (Todaro, 1994). Many children of these countries even do not complete their primary education. Situation in Bangladesh has no exception to this. In Bangladesh, enrollment rate among the primary school-aged children is 75% (Bangladesh Bureau of Statistics, 1994a). Nearly one fourth of these enrolled students leave their school at the end of the first year, about 60% dropped before starting the fourth grade, and 88% at the end of fifth grade (Bangladesh Bureau of Statistics, 1994b). Educational gender gap is also prominent in Bangladesh. In Bangladesh, as percentage of male the current enrollment rate of female is 86% in primary stage, 46% in secondary stage and 19% in tertiary stage (UNDP, 1994).

BRAC, the largest national non-government organisation (NGO) in the world, operates two different school models for poor children in Bangladesh. The Non-Formal Primary Education (NFPE) programme is targeted for the children aged 8-10 years while the Basic Education for Older Children (BEOC) is targeted for the children aged 11-14 years. Both NFPE and BEOC are three years' programmes. Under its Education Support Programme (ESP) BRAC also helps (technical and financial support) other small NGOs to replicate NFPE in their working areas. The schools have no charge and all the teaching materials are provided by BRAC. More than 70% of the students of these schools are girls.

BRAC schools enable its learners to continue their education and prepare them for entrance into formal schools (BRAC, 1994). Different studies also reveal the same. Of the children graduated in 1989 and 1990, 44% and 74% respectively were found continuing in primary schools in 1991 (Khan et al., 1991). Nath et al. (1994) found that among the graduates of 1990, 69.8% were continuing education for two years since graduation in 1992, and 53.3% were continuing for four years since graduation in 1994. These findings indicate that among BRAC graduates dropout happens in formal schools.

Above mentioned studies show that some portion of BRAC school graduates did not enroll into formal schools and some were dropped out within a short period, though the programme organisers (POs) of BRAC tried to enroll all of them. Using qualitative approach, Khan and Chowdhury (1995) identified some reasons for dropout of the former learners of BRAC schools from formal schools. This study was done only in two areas with a small sample size. But no studies have taken the initiative to find the determinants of dropout covering a representative sample. This report explores the level and pattern of enrollment in formal schools of the graduates of BRAC's education programme with a representative sample and also finds the socio-economic determinants of such enrollment.

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Data and Methodology

Data used for this study came from a recent BRAC study entitled "Basic competencies of the BRAC school graduates of 1995" (Nath et al., 1996). The learners of BRAC schools who were graduated between January - March 1995 were the respondents of this study. Data were collected within 10 months of their graduation. This study used the data of background section of above study. This information was collected from the parents/guardians of the graduates.

Sampling
Using 30-cluster sampling procedure separate samples were drown for boys and girls in three categories of BRAC schools viz., NFPE under Rural Development Programme (RDP) and Education Support Programme (ESP) areas, and BEOC in RDP areas. This means six separate surveys were carried out. For a precision level of 7% with 95% confidence interval, seven graduates from each of 30 random clusters were selected, i.e., 210 samples for each stratum. In some cases, required numbers of boys were not interviewed due to their absence in house or lesser number of boys graduated. Thus, instead of 1,260 (210x6) graduates (210x3=630 boys and 630 girls) the study interviewed 1,259. A detailed information on sampling is available in Nath et al., 1996.

Definition of variables
The current enrollment status of the graduates is the dependent variable for this study. The explanatory variables are age, sex, and pre-BRAC school enrollment status of the graduates, parental education; yearly food security status, BRAC membership eligibility and NGO involvement status of the household; and availability of formal school in the village. The measurements of the variables are given in Appendix 1.

Data analysis
To find the level of enrollment and to examine the independent contribution of different explanatory variables to enrollment, cross tabular bivariate analysis of the data was done. To identify the determinants of enrollment multivariate logistic regression analysis was considered with the whole set of explanatory variables. Three models were estimated - one for the whole set of graduates and other two separately for boys and girls. The models were estimated by using the software SPSS for Windows 6.0. 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.

Results
Socio-economic characteristics of the graduates
Table 1 presents socio-economic characteristics of the graduates. On average, mean age of the graduates was 12.7 years and sex ratio was 93.1. About 17.1% of the graduates were enrolled in other schools before participating in BRAC schools. On average, 76.3% of the mothers and 58.1% of the fathers of the graduates never attended any formal school. Yearly food security status of more than 50% of the households of which the graduates came from,

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is deficit. According to BRAC membership eligibility criteria (households with :cimals of land and at least one person sell labour for more than 100 days in a ℩% of the households were found eligible to get BRAC membership. Another that 48.2% of the graduates came from such households none of which were ⸀ NGO. There was no formal school (primary, secondary or Madrassa) in the !% of the graduates.

ituation: level and pattern
9.8% of the graduates of BRAC's education programme were currently in ℩. Enrollment rate was found significantly varying (p<0.001) according to y (Table 2). Of the three types of schools, enrollment rate was highest among ⸀f NFPE under RDP areas (87.6%) followed by NFPE graduates under ESP ℥EOC graduates under RDP areas (75.2%). On average, 79.4% boys and :re found enrolled in formal schools. The enrollment rates in formal schools ⸀gher among the girls of all the three categories of schools compared to boys, gnificant gender difference was observed.

√ more graduates of NFPE were enrolled in grade four or five, while it was ⸀ix among the graduates of BEOC (Figure 1). Surprisingly some graduates rolled in grade three or less in the formal schools though BRAC schools ⸀ to third grade. More graduates of NFPE were admitted into government s and it was high schools among the graduates of BEOC.

⸀s negative relationship between enrollment rate and age of the graduates ⸀re than 90% of the graduates aged ≤ 10 years were found currently in schools te was nearly 60% among the graduates of age 15-18 years.

⸀re-BRAC school enrollment status no significant difference was observed in enrollment rate (Figure 3). On average, enrollment rate was slightly higher ⸀luates who had pre-BRAC school enrollment. Similar finding was observed s. But for boys an inverse relationship was observed. Among the graduates ℥RAC school enrollment, girls were more likely to enroll in formal schools

⸀ that parental education played a major role in enrollment into formal schools ⸀s of BRAC schools (p<0.001). The most remarkable feature to be noted is oth parents' schooling influenced in enrollment of their children, mothers' to influence more than that of the fathers'.

⸀s that increase in yearly food security status of the households increases ⸀oll in formal schools. But this difference was not statistically significant.

on in enrollment rate (p<0.001) was observed between the graduates of ⸀ible for BRAC membership (target) and non-eligible (non-target) households aduates of the target households were less likely to be enrolled in formal

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schools than those of non-eligible households. NGO membership of the household members could not create any significant difference in enrollment of the graduates. Least enrollment rate was observed among the graduates who came from those target households where there was no NGO involvement.

Presence of any kind of formal school in the village slightly influenced graduates enrollment (Figure 7). Presence of formal school in the village had no significant influence on boys enrollment but significant proportion of girls were enrolled from those villages where there were formal schools ($p<0.05$). More boys were enrolled in formal schools from those villages where there were no formal schools ($p<0.05$). On the other hand, more girls were enrolled in formal schools where there were formal schools in the villages.

Multivariate analysis
The regression coefficients of the best models are displayed in Tables 3 to 5. Ten variables were used as explanatory variables in regression analysis. But the model for all the graduates included only four. This indicates, among the variables used in the regression exercise, these four came out as the most powerful socio-economic determinants ($p<0.05$) of enrollment in formal schools of the graduates of BRAC's education programme. The explanatory variables included by the model were BRAC school category, age of the graduates, mothers education and BRAC membership eligibility status of the household.

The results of multivariate analysis confirms the findings of bivariate analysis. The regression coefficients (as well as the odds ratios) explores that the respondents who were comparatively younger, whose mothers' have some schooling, and who came from those households which are non-eligible for BRAC membership were more likely to enroll in formal schools after graduating from BRAC schools than other groups of respondents. The boys model shows that three variables were responsible for their enrollment in formal schools. These are BRAC school category, age, and BRAC membership eligibility of the household (Table 4). On the other hand, besides the variables included in boys model the girls model included two more variables. These are mothers education and availability of formal school in the village (Table 5). All the three models explore that graduates of NFPE under RDP areas were more likely to enroll in formal schools than those of BEOC under RDP and NFPE under ESP.

Discussion

This report examines the relationship between different socio-economic factors and enrollment status of the BRAC school graduates into formal schools. Though admission of the BRAC graduates to the formal schools system has not initially been emphasised but now it prepares them for entrance into formal schools. Different studies (Khan et al., 1991 and Nath et al, 1994) also reveal that BRAC school graduates are admitted into formal schools. Findings of this study show that 79.8% of the graduates (who were graduated in January-March 1995) were continuing their education in formal schools up to the end of the academic year. This means, within one academic year 20.2% of the graduates were dropped

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out from schools. Some of these graduates may not be enrolled in formal schools at all and some may be dropped out at any time within 10 months.

Young females receive considerably less education than young males in almost every developing countries (Todaro, 1994) as well as in Bangladesh (Bangladesh Bureau of Statistics, 1994b and Nath 1995). But BRAC schools are targeted to promote girls education. Similar tendency was observed in case of graduates enrollment in formal schools. Slightly higher proportion of girl graduates were continuing their education than boy graduates. Comparatively more graduates of BEOC schools were found studying in higher grades. This may be explained by the statement that within three-year period these schools cover five academic years' curriculum (BRAC 1994). Absence of gender difference may be the reflection of discrimination free attitude of BRAC's education programme.

This study identified the socio-economic determinants of enrollment of the graduates of BRAC schools in formal schools. Regression analysis reveals that BRAC school category, age of the graduates, mothers' education, and BRAC membership eligibility status of the household were most powerful determinants of enrollment. The relationship between age and enrollment was found negative. Older graduates were less likely to be enrolled in formal schools than younger graduates may because older children are more likely to participate in labour force (Khuda 1991; Kanbargi and Kulkarni 1991). Like other studies (Harbison and Hanushek, 1992; Hadi 1994; Nath 1995), this study explored that educated mothers were more likely to keep their children in schools. The households that are not eligible for BRAC membership are economically better-off than others. Children of better-off households are more likely to have access in different opportunities of the society as well as education. Similar relationship was also found in this study.

When the models were estimated separately for boys and girls it was found that mothers education and availability of formal school in the village were responsible only for girls enrollment but not for the boys. This indicates that mothers' education had more influence on girls enrollment rather than boys. The parents felt insecured in sending their daughters to schools where there were no formal schools in their villages (Khan et al, 1995). The girls may also feel such insecurity. This might be the reason why lesser proportion of girls attended in formal schools particularly when there were no formal schools in their own villages.

In the context of underdeveloped socio-economic condition of Bangladesh, it can be said that a satisfactory level of BRAC school graduates were continuing education in formal schools. Non-discrimination in enrollment according to gender is a positive outcome of BRAC's education system. BRAC management should put equal emphasis to the graduates of all category of schools. Availability of formal school in all the villages should be ensured by the government to enhance girls' enrollment. Variation in enrollment according to the identified determinants may also have similar influence in coming years. It can be tried to enroll all the graduates in formal schools and closer supervision may be considered for its further improvement. Initiative may be taken to aware the parents/guardians of the graduates on continuing education.

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Footnotes

1. <u>Enrollment</u>: BRAC school graduates who were found enrolled in any formal school at the time of survey was considered as "currently enrolled". Other sampled graduates were considered as "not enrolled".

2. <u>BRAC membership eligibility</u>: BRAC runs its development activities through target group approach. Households those have less than 50 decimals of land and at least one person of the household sell manual labour for at least 100 days in a year are considered as "target" households i.e., these households are eligible for BRAC membership. Other households are not eligible for BRAC membership.

Acknowledgment

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Table 1: Socioeconomic characteristics of the sample graduates.

Sex ratio	93.1
Mean age (in year)	12.7
Enrolled in other school before enrolled in BRAC schools (%)	17.1
Mothers never attended school (%)	76.3
Fathers never attended school (%)	58.1
Yearly food security status as deficit (%)	51.5
BRAC membership eligible* HHs (%)	36.9
HHs with no NGO membership (%)	48.2
Availability of formal schools** in the village (%)	64.9

*   Eligible= Households with less than 50 decimals of land and at least one person sell labour for more than 100 days in a year; Non-eligible= others

** Formal school means any type of primary and secondary schools and Madrassas

Table 2.   Proportion of respondents enrolled in formal schools after graduating from BRAC schools by school category and sex.

School category	Sex		
	Boys	Girls	Both
NFPE under RDP area	86.9	88.3	87.9
BEOC under RDP area	75.1	75.4	75.3
NFPE under ESP	76.0	77.1	76.8
All	84.1	85.3	84.9
Remarks			

Table 3.   Proportion of respondents enrolled in formal schools after graduating from BRAC schools by school category and grade of enrollment.

Grade of enrollment	School category			
	NFPE under RDP area	BEOC under RDP area	NFPE under ESP area	All
Not enrolled	12.1	24.8	23.4	15.1
Grade <= 3	3.1	2.0	8.8	3.0
Grade 4	44.0	5.6	33.3	35.8
Grade 5	29.9	21.3	24.2	28.0
Grade 6	10.9	46.3	10.3	18.1

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Age group (in years)	Sex		
	Boys	Girls	Both
<= 10	95.5	97.6	96.9
11-12	86.0	89.9	88.7
13-14	85.5	80.0	81.6
15-18	55.5	57.5	56.7
All	84.1	85.3	84.9
Remarks			

Table 5. Proportion of respondents enrolled in formal schools after graduating from BRAC schools by pre-BRAC school enrollment status and sex.

Pre-BRAC school enrollment status	Sex		
	Boys	Girls	Both
Enrolled	80.1	85.9	84.2
Not enrolled	84.6	85.2	85.0
All	84.1	85.3	84.9
Remarks			

Table 6. Proportion of respondents enrolled in formal schools after graduating from BRAC schools by parental education and sex.

Parental education	Sex		
	Boys	Girls	Both
Mothers education			
No schooling	83.7	82.6	82.9
Some schooling	85.7	94.3	91.9
Remarks			
Fathers education			
No schooling	81.4	81.5	81.5
Some schooling	88.0	90.8	90.0
Remarks			

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Table 7.   Proportion of respondents enrolled in formal schools after graduating from BRAC schools by yearly food security status of household and sex.

Yearly food security status of household	Sex		
	Boys	Girls	Both
Deficit			
Balance/surplas			
Remarks			

Table 8.   Proportion of respondents enrolled in formal schools after graduating from BRAC schools by households involvement in development programmes and sex.

Households involvement in development programmes	Sex		
	Boys	Girls	Both
Target			
Involved	72.9	81.0	78.6
Not involved	82.1	75.3	77.3
All	77.2	78.5	78.1
Remarks			
Non-target			
Involved	88.4	86.8	87.2
Not involved	90.7	90.5	90.5
All	89.1	89.0	89.0
Remarks			

Table 9.   Proportion of respondents enrolled in formal schools after graduating from BRAC schools by availability of formal school in the village and sex.

Availability of formal school in the village	Sex		
	Boys	Girls	Both
Available	84.7	90.0	80.7
Not available	83.5	79.5	88.4

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Table 3. Determinants of enrollment in formal schools of the graduates of BRAC schools: logistic regression estimates.

Explanatory variables	Beta coefficient	Odds ratio	Wald statistics	Level of significance
BRAC school category			15.58	p<0.001
NFPE in RDP area	0	1.00		
BEOC in RDP area	-0.22	0.80		ns
NFPE under ESP	-0.74	0.47		p<0.001
Age (in years)			48.84	p<0.0001
≤ 10	0	1.00		
11-12	-0.77	0.46		p<0.05
13-14	-1.26	0.28		p<0.001
15-18	-2.14	0.11		p<0.0001
Mothers' education			9.10	p<0.01
No schooling	0	1.00		
Some schooling	0.64	1.90		p<0.01
BRAC membership eligibility			32.36	p<0.0001
Eligible	0	1.00		
Non-eligible	0.87	2.38		p<0.0001
Constant	2.29			p<0.0001

ns= Not significant at 5%

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Table 4.   Determinants of enrollment in formal schools of the boy graduates of BRAC hools: logistic regression estimates.

Explanatory variables	Beta coefficient	Odds ratio	Wald statistics	Level of significance
BRAC school category			8.86	p<0.01
NFPE in RDP area	0	1.00		
BEOC in RDP area	-0.26	0.77		ns
NFPE under ESP	-0.81	0.44		p<0.01
Age (in years)			27.00	p<0.0001
≤ 10	0	1.00		
11-12	-1.28	0.28		p<0.05
13-14	-1.09	0.34		p<0.05
15-18	-2.36	0.09		p<0.0001
BRAC membership eligibility			24.67	p<0.0001
Eligible	0	1.00		
Non-eligible	1.09	2.96		p<0.0001
Constant	2.52			p<0.0001

ns= Not significant at 5%

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Table 5. Determinants of enrollment in formal schools of the girl graduates of BRAC schools: logistic regression estimates.

Explanatory variables	Beta coefficient	Odds ratio	Wald statistics	Level of significance
BRAC school category			10.48	p<0.01
NFPE in RDP area	0	1.00		
BEOC in RDP area	-0.31	0.73		ns
NFPE under ESP	-0.93	0.39		p<0.001
Age (in years)			30.24	p<0.0001
≤ 10	0	1.00		
11-12	-0.23	0.79		ns
13-14	-1.35	0.26		p<0.01
15-18	-1.95	0.14		p<0.001
Mothers' education			5.34	p<0.05
No schooling	0	1.00		
Some schooling	0.71	2.04		p<0.05
BRAC membership eligibility			12.99	p<0.001
Eligible	0	1.00		
Non-eligible	0.79	2.21		p<0.001
Formal school in village			6.40	p<0.01
Not available	0	1.00		
Available	0.59	1.80		p<0.01
Constant	1.90			p<0.001

ns= Not significant at 5%

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Table: Measurement of dependent and explanatory variables.

Variables	Measurement
Dependent variable	
Enrollment	Graduates enrollment status in formal schools [1= Enrolled, 0= Not enrolled]
Explanatory variables	
Age	Age of the graduates in year [1= ≤10, 2= 11-12, 3= 13-14, 4= 15-18]
Sex	Sex of graduate [1= Boy, 2= Girl]
BRAC School Category	Classification of graduates by school type [1= NFPE-RDP, 2= BEOC-RDP, 3= NFPE-ESP]
Pre-BRAC school enrollment	Enrollment status before BRAC schools [1= Not-enrolled, 2= Enrolled]
Mothers education	Schooling status of mother [1= No schooling, 2= Some schooling]
Fathers education	Schooling status of father [1= No schooling, 2= Some schooling]
Economic status	Yearly economic status of household [1= Always deficit, 2= Occasionally deficit, 3= Balance, 4= Surplus]
BRAC eligibility	BRAC membership eligibility status of household [1= Eligible (HHs with less than 50 decimals of land and at least one person sale labor more than 100 days in a year), 2= Non-eligible (others)]
NGO involvement	Whether at least one person of the household was a member of any NGO [1= Yes, 2= No]
Formal school availability	Availability of formal school in the village the graduate live in [1= Not-available, 2= Available]

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