

Girls' educational outcomes in Bangladesh and the role of non-formal schools*

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Abstract

Bangladesh is the only country in South Asia to have achieved gender equity in primary enrollment. Using data from the Education Watch project, this paper examines the effects of NGOs' non-formal schools on girls' educational outcomes, including enrollment, attendance, and test scores. The results show that the involvement of non-formal schools significantly increases the probability of being enrolled for girls. The most prominent school characteristic that encourages girls' enrollment is the high percentage of female teachers in non-formal schools. Teacher absenteeism and classroom crowdedness appear to discourage attendance for all types of schools. Non-formal schools show strong effects in improving children's test scores as measured by Assessment of Basic Competency test.

Keywords: Girls' education, Bangladesh, non-formal schools, NGOs
JEL classification: I21, O15

1 Introduction

Bangladesh is the only country in South Asia to have achieved gender equity in primary enrollment (Chowdhury et al., 2002). As reported by UNICEF and the World Bank, over the period 1980-1995, net enrollment rate¹ at primary level

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¹**Net enrollment rate** is defined as 'the percentage of children currently enrolled in primary schools among children aged 6-10 years.' The official primary school age in Bangladesh is 6-10 years.

has increased from 62% to 79%, while girls' enrollment rate in the same period has increased much faster from 47% to 73%. Statistics from the Education Watch Project² show that in the year 2000 net enrollment rates for boys and girls are 79.8% and 79.9%, respectively. Bangladesh's achievement of gender equity in primary enrollment marks one significant step towards the Millennium Development Goals, as defined in the United Nations Millennium Declaration in September 2000³. Goal 3, namely "Promote gender equality and empower women", has the specific target to "Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015." The experience of Bangladesh should therefore provide useful policy implications for countries aiming to achieve gender equity in enrollment.

The increase in girls' enrollment rate in recent years is believed to have been brought about by a number of 'positive discriminatory' actions taken by the state and non-governmental organizations (NGOs) in favor of girls and poor children in rural areas. Among those actions are: (i) Female stipend programme, where the state provides stipends to girls in secondary school (grades 6 to 10) and does not require them to pay any tuition. (ii) Food for Education programme, where the state provides a food ration to children from rural poorer families for attending school. (iii) Non-formal primary education provided by NGOs, which aim at the poorest children who do not have an opportunity to attend formal schools. Non-formal schools target girls, who make up about two-thirds of students attending non-formal schools.

In this paper I analyze the effects of non-formal primary schools on the educational outcomes of girls in Bangladesh. Here educational outcomes include enrollment, attendance and test scores. The motivation comes from two special characteristics of primary education in Bangladesh, i.e., the rapid increase in the enrollment rates of girls in recent years, and the heavy involvement of NGOs in the provision of non-formal primary education. This paper aims to provide a rigorous evaluation of the role of NGOs' non-formal schools in the empowerment of girls in Bangladesh.

NGOs in Bangladesh are involved in many areas of public services, and are documented as being one of the most active in the world (Sharafuddin, 1998). In the area of primary education, NGOs in Bangladesh have been heavily involved in the provision of primary education, particularly to children from economically disadvantaged families. At present, about 1.4 million children, or 8% of the children enrolled in primary schools attend non-formal primary schools provided by NGOs. Non-formal primary education was initiated in the middle of 1980s because it was perceived that primary education provided by the government could not reach the poorest children in remote areas. Non-formal primary education has many characteristics that differ from formal education. For ex-

²The Education Watch Project was initiated in 1998 by the Campaign for Popular Education (CAMPE) and aims to create more transparency in the education system in Bangladesh by providing accurate information relating to education.

³The eight goals focus on the efforts of the world community on achieving significant, measurable improvements in people's lives. Details of the Millennium Development Goals can be found at www.un.org/millenniumgoals/ and www.developmentgoals.org.

ample, a school is usually built in the village nearby to the children's homes, because one of the reasons parents do not send their children, especially girls, to school is the long distance from home to school (Jalaluddin and Chowdhury, 1996). Parents and the teachers decide together on the timing of the lessons and vacation schedules. In most cases, teachers in non-formal schools are female, which is another factor that encourages the enrollment of girls, since many parents do not send girls to school where there are male teachers (Jalaluddin and Chowdhury, 1996). Currently, more than 400 NGOs are involved in non-formal primary education (Sharafudin, 1998). The largest NGO working in the field of education in Bangladesh is the Bangladesh Rural Advancement Committee (BRAC), which provides non-formal primary education to 1.2 million children out of 1.4 million children currently receiving non-formal education.

With the increasing roles of NGOs in the provision of primary education in developing countries, the issue has come to receive much attention. There are, however, very few evaluations of NGOs' involvement in education. One exception is Nath et al. (1999), which explores the impact of non-formal primary education programme (NFPE) of the Bangladesh Rural Advancement Committee (BRAC) in the achievement of basic education for rural Bangladeshi children. The study uses an instrument developed in Bangladesh to assess the level of basic education, and the results of the study show that about half of the children from formal schools failed to satisfy the minimum criteria of basic education, whereas nearly 70% of BRAC school children satisfied these criteria.

Non-formal schools have many characteristics that differ from formal schools. How school inputs affect educational outcomes is a controversial issue, both for developed and less developed countries. In his survey of research on schooling in developing countries, Hanushek (1996) argues that there are no clear and systematic relationships between key school inputs and student performance. However, Kremer (1996) argues that Hanushek's conclusion rests on his interpretation of statistically insignificant findings as evidence against an effect of school quality. In their empirical work, Dreze and Kingdon (1999) analyze the determinants of school participation in rural north India, and find that school participation responds to a wide range of variables, and that school quality matters, but participation is not related in a simple way to specific inputs.

Some recent papers have shed more light on the relationship between school inputs and educational outcomes. Using data from South Africa immediately before the end of apartheid government, Case and Deaton (1999) find strong and significant effects of pupil-teacher ratios on enrollment, on educational achievement, and on test scores for numeracy. Angrist and Lavy (1999) use Maimonides' rule governing maximum class sizes in Israel to examine the relationship between class size and test scores, and find that reducing class size induces a significant increase in test scores for fourth and fifth graders, although not for third graders.

Using data from the Education Watch Project, the first part of this paper examines the relationship between the expansion of non-formal schools into the villages and the enrollment status of girls. The second part then analyzes the characteristics of non-formal schools and government schools that affect girls'

educational outcomes as compared to boys.

The empirical analysis shows that girls in rural villages with more involvement of non-formal schools⁴ are more likely to be enrolled, controlling for child characteristics and family background. However, the result does not hold in the case of metropolitan cities. Percentage of female teachers in non-formal schools is found to significantly increase the enrollment of girls, while percentage of teachers present on the day of school visit has a significant effect on the attendance of both boys and girls. Also, similar to the findings of Nath et al. (1999), controlling for other factors, being enrolled in a non-formal school has positive and significant effects on children's test scores, as measured by Assessment of Basic Competency test.

The paper is organized as follows. Section 2 provides an overview of the state of primary education in Bangladesh with an emphasis on non-formal education. Section 3 discusses the data while section 4 describes the methodology. Section 5 contains the empirical analysis. Section 6 concludes.

2 Background

Bangladesh is an agricultural economy, with 80% of its 126 million people living in 86,000 villages in the rural areas. It is also the most densely populated country in the world, with 854 people per square kilometer. Bangladesh is one of the poorest countries in the world, with per capita income of US\$ 370. Nearly 35% of the population live in hard core poverty, and 67% of children under five are underweight (The World Bank, 2000). The adult literacy rate in Bangladesh is one of the lowest in the world; Bangladesh ranks 115th among 131 countries in the literacy-league table (Chowdhury et al., 1999). From 1980 to 1995, the adult literacy rate rose from 32% to 38%, with the rates of females remaining about half of those of males.

After independence, under an Act of the Parliament all primary schools in Bangladesh were nationalized in 1973 with a view to improving quality of education (Jalaluddin and Chowdhury, 1996). In 1990 the Compulsory Primary Education Act was passed. Primary education in Bangladesh is characterized by (i) substantial progress made in increasing enrollment during the 80s and early 90s, (ii) large number of children from very poor backgrounds and from illiterate families who are now attending school, and (iii) diverse types of schools serving children who have diverse needs including working children (The World Bank, 2000).

Primary education is 5 years in length in Bangladesh, starting at age six. There are 11 types of primary schools: government, non-government registered, non-government unregistered, schools attached to high schools, PTI's experimental schools, Ebtedayee Madrassas (independent), Ebtedayee attached to high madrassas, kindergarten, satellite schools, community schools, and non-

⁴The involvement of non-formal schools in a village' is defined as the percentage of children aged 6 to 10 years old enrolled in non-formal schools among children aged 6 to 10 years old currently enrolled in school in each village.

formal schools run by NGOs. Presently about two-thirds of students are enrolled in government schools. The following table shows the percentage of children attending different types of primary schools in Bangladesh.

Percentage of children attending different types of primary schools:

Type of primary school	% of total enrollment
Government	59-66
Registered non-government	18-21
Non-registered non-government	2
Community schools	very small percentage
Satellite schools	very small percentage
Primary attached to high schools	very small percentage
NGO's non-formal primary schools	8
Ebtedayee madrassas	2

Source: Jalaluddin and Chowdhury (1996)

In Bangladesh, NGOs play an important role in the provision of non-formal education. From the second half of 1980s, the State has allowed NGOs to experiment with a variety of delivery mechanisms to cater for basic education needs of the disadvantaged households, and non-formal education has been accepted as a complementary approach to formal education. The government of Bangladesh provides appropriate facilities for non-formal education and aims to use non-formal education to provide education opportunities for dropouts and the non-enrolled, especially girls.

The largest NGO working in the field of education in Bangladesh is the Bangladesh Rural Advancement Committee (BRAC). Out of 1.4 million children currently receiving non-formal education, 1.2 million are in BRAC schools. BRAC initiated the Non-Formal Primary Education Programme (NFPE) in 1985 in response to demands from the parents who took part in BRAC's adult functional literacy class, and whose children did not have a chance to attend formal schools.

In 1985 BRAC set up 22 experimental village schools, with the help of a staff of educators and a consultant from Dhaka University School of Education. After the first two years, BRAC developed a model of primary education programme that has today become highly successful.⁵ Studies such as Nath et al. (1999) and Chowdhury et al. (1999) have found that graduates of BRAC schools have a high level of basic competency compared to other types of schools. The success is believed to come from the fact that BRAC's schools target girls, and are relevant to the needs of the rural poor. The differences between BRAC's NFPE schools and the State schools can be seen in the following areas:

⁵When BRAC started non-formal primary education in 1985, the main objective was to provide basic education to the children who did not have an opportunity to attend formal schools. Continuation into the fourth grade in the formal system was not expected. However, out of over 1.67 million students who have graduated from BRAC schools, 90% have gone on to government schools.

Entrance: BRAC's NFPE programme was originally meant for eight to ten years old children of BRAC's target households⁶ who have never attended school or have dropped out in the first grade. However, as there were also many children of the non-target households who were non-enrolled or had dropped out of school, BRAC schools also enrol children of the non-target households⁷. BRAC staff and prospective parents and the community work together on the selection of eligible children according to age, sex, and literacy status (Hossain, 1999). For government schools, any child aged six or above could enrol.

Functioning of the school: In villages where BRAC has its development activities, BRAC personnel would survey parents on the demand for non-formal schools, the availability of qualified teachers, and the proximity of existing schools. One school is open for 33 students, given preference to girls. The same teacher remains with the students until graduation. From 1985 to 1998, BRAC's NFPE programme followed a 3-year cycle covering 3 years of government schools' curriculum. However, from 1999 onwards, the programme has been changed to a 4-year cycle covering 5 years' government school curriculum, which is possible because of much shorter vacation periods in the case of BRAC schools as compared to government schools. For BRAC schools, class times and vacation schedules are decided together by parents and the teacher to allow for seasonal work and other family needs. School contact time varies from 220 to 268 days per year. For grades 1 and 2, contact time is 3 hours a day, and for grades 3-5, contact time is 4 hours a day or longer. There is no examination in BRAC schools, the assessment is conducted through continuous evaluation of students.

For the formal system, primary education is five years in length, starting at age 6. In government schools, teacher-student ratio varies greatly among schools, with the average of 1:66. In some cases, teachers may have as many as 100 students in a classroom. Government primary schools have fixed class times and vacations. School contact time is 200 days per year, with grades 1 and 2 meeting for 2 hours per day and grades 3-5 meeting for 3.25 hours per day. For grades 1 and 2, promotion to the next grade is automatic, while from grade 3 onwards promotion to the next grade is determined by examination.

Curriculum: The curriculum of BRAC schools consists of lessons in Bangla, Mathematics, and Social Studies for grades 1-5, and also English and Religion for grades 3-5. BRAC's textbooks are in the form of small booklets, with examples relevant to the rural life in Bangladesh. The curriculum is child centred, which includes role-playing, dancing, and singing, and covers the government competencies.

⁶BRAC's target households are those with less than half an acre of land and at least one person engaged in manual labour for at least 100 days a year. Target households are eligible for BRAC membership, which enables them to participate in BRAC's development programmes (Nath, 1999).

⁷Studies by BRAC indicate that about half of the children enrolled in BRAC schools do not belong to their target group (Janaluddin and Chowdhury, 1996).

In government primary schools, the curriculum is based on 53 terminal competencies to be achieved by the end of primary cycle. Five subject areas are covered, i.e., Bangla, Mathematics, Science and Environment, Social Studies, and English.

Teachers: Over 90% of BRAC school teachers are women. Teachers must be married residents of the village (to avoid losing personnel due to spousal transfers) who have completed nine or more years of school. BRAC school teachers on average have 10 years of schooling. The teachers are hired on a temporary, part-time basis.

Statistics show that in 1996 percentage of female teachers in government schools was 28%, which has gradually increased from 20.6% in 1990. The government has plans to raise the ratio of female teachers in government schools (Chowdhury, 1999). On average, government school teachers have about 12 years of schooling.

Teachers' training: Once BRAC school teachers are selected, they are given 12 days of teacher training in groups of 20 to 25, where they are taught basic concepts of learning theory, together with training in English, Mathematics, Science and Social Studies by specialized trainers. After the teachers start teaching, they have to attend a one-day refresher course each month, and a six-day refresher course at the end of the first year.

For government school teachers, training is provided by the government. The government has large training facilities; there are 53 Primary Training Institutes (PTI) with residential facility all over the country. PTIs offer 1-year Certificate-in-Education course for primary school teachers. National Academy for Primary Education (NAPE) also provides training (Jalaluddin and Chowdhury, 1996). The government has recently introduced a scheme of continuous training of teachers where all the teachers of a sub-cluster attend a day-long training session once every two months with their respective Assistant Thana Education Officers (The World Bank, 2000).

Management and Supervision: Each BRAC school is run by a management committee, which consists of three parents, a community leader, and the teacher. The committee is responsible for the monitoring of teacher's attendance in school and meets monthly to discuss school-related matters. BRAC schools also have a strong teacher supervision system, where each school is visited at least twice weekly by programme organizers and programme assistants.

Government schools have School Management Committee (SMC), which consists of 11 members with clearly defined responsibilities. For the national management system, the Thana Education Officers (TEOs) and Assistant Thana Education Officers (ATEOs) are responsible for overall management of schools at the local level.

Community involvement: BRAC schools are characterized by active community participation. The community is involved in the planning, management, and supervision of BRAC schools. They help select the location of the school, the students who would be attending the school, and the teacher. The parents pledge to send their children to the school and to attend monthly parents' meeting. In the case of government schools, parents are involved through local School Management Committees (SMCs) and Parent-Teachers Associations (PTAs). However, there is a general feeling in the rural area that SMCs and PTAs are "committees in the paper" (Jalaluddin and Chowdhury, 1996).

Physical characteristics and distance: BRAC schools are usually bamboo or mud-walled one room constructions with an earthen floor and a thatched or tin roof. There is a blackboard in the school, and the children sit on the floor on bamboo mats in a U-shape around the room. The distance from the children's homes to schools ranges from less than 1 kilometer to 2.5 kilometers. On the other hand, government schools are usually permanent structures, mostly brick-built with corrugated iron sheet or concrete roof, and consist of 3-5 classrooms. The average distance from the children's homes to a government school is about 3.2 kilometers, with a longer distance for remote rural areas.

3 Data

The data used in this study came from the Education Watch Project. The Education Watch project was initiated in 1998 by the Campaign for Popular Education (CAMPE), a coalition of more than 400 NGOs involved in primary and non-formal education, together with concerned individuals and organizations. The project aims to create more transparency in the education system in Bangladesh by collecting and providing accurate information relating to education, particularly primary education. Three rounds of data have been collected; the first round in 1998, and the second and third rounds in 2000. Each round of data contains information on certain aspects of education in Bangladesh. This paper uses the first round of data, which focuses on the internal efficiency⁸ of primary education system in Bangladesh.

A summary of the first round of the Education Watch data is discussed here; a more detailed discussion is provided in the Appendix. The survey was conducted during October and November 1998, and data from 42,584 households and 885 schools in 240 clusters covering all 64 districts in Bangladesh was collected. Three instruments were used to collect the data:

(1.) Household Survey Questionnaire (42,584 households from 312 villages in all 64 districts with 31,092 children). This questionnaire has 4 sections: profile

⁸The term efficiency describes the relationship between inputs and outputs. In education literature two types of efficiencies are identified: external and internal. External efficiency refers to broader social goals such as better health and productive person-power for the labour market, while internal efficiency refers to objectives which are internal to the education system such as enrollment and achievement (Chowdhury et al., 1999).

of each household member, schooling of the members aged 4-20 years, parental information, and household level information.

(2.) Assessment of Basic Competencies (ABC) questionnaire (3,360 children: 7 boys and 7 girls from each of the 240 clusters). This part of the survey is intended to provide information on the level of basic competencies of the children as an indicator of achievement. There are four sections: life skills / knowledge, reading, writing, and numeracy. There are altogether 42 questions.

(3.) School Observation Checklist (885 schools). There are seven sections in the checklist: general information about school, classroom information, teachers' profile, community participation, retention and dropout, school visit by the supervisors, and losses due to the flood of 1998.

The sampling procedure was designed in such a way that the data is nationally representative. Because of variations in educational attainment in different geographical regions in Bangladesh, eight different surveys were carried out in each strata. The strata considered were six rural divisions, the metropolitan cities and the non-metropolitan urban areas. For each stratum the same sample size and similar sampling strategy were followed. Employing a multi-stage sampling procedure, at the first stage, for each stratum 30 thanas (pourashava for non-metropolitan urban areas) were selected through systematic random sampling technique with probability proportional to size (PPS). At the second stage, one union (or ward for the urban strata) for each selected thana/pourashava was selected randomly. At the third stage, one village (mahala for the urban strata) was selected, again randomly, for each selected union/ward. In other words, 30 villages/mahalla were selected for each stratum, totalling 240 for the whole of Bangladesh. It came out that all 64 districts of the country were represented in the sample.

For each village/mahalla, the number of households interviewed varied between 125 and 200, depending on the size of the village/mahalla. The interviewers started in the north-west corner of the village/mahalla, and surveyed the first household of the corner, and then moved anti-clockwise for the next household, and continued doing so. If the village/mahalla was small, and the number of households did not reach 125, then the interviewers moved to the closest village/mahallah and completed the interview. If there were more than 200 households in the village/mahallah, then the survey stopped at reaching the 200th household. For each village/mahallah, 14 children (7 boys and 7 girls) aged 11-12 years, chosen randomly from the surveyed households, were interviewed for the ABC survey. For the school survey, all schools located in the selected village/mahallah and its adjacent village/mahallah were surveyed through the school observation checklist.

4 Methodology

In this section, the first part analyzes the determinants of enrollment of boys and girls, and the second part examines the relationship between the expansion of non-formal schools into the villages and the enrollment status of girls. The third

part studies the characteristics of non-formal schools and government schools that affect the enrollment status and attendance rates of boys and girls. The last part attempts to find out the determinants of children's test scores, including the effects of being enrolled in non-formal schools and government schools.

'The involvement of non-formal schools in a village' is defined as the percentage of children aged 6 to 10 years old enrolled in non-formal schools among children aged 6 to 10 years old currently enrolled in school in each village. Similarly, 'the involvement of government schools in a village' is defined as the percentage of children aged 6 to 10 years old enrolled in government schools among children aged 6 to 10 years old currently enrolled. Out of 240 clusters covered under the survey, 81 clusters have at least one non-formal school. To find out the determinants of enrollment of boys and girls, the equation to be estimated is:

$$\Pr(S_{ij} = 1) = a + bN_j + cG_j + dC_{ij} + eA_j + \text{error term} \quad (1)$$

where S_{ij} is equal to 1 if individual i in village j was enrolled in school at the time of the survey, and 0 otherwise. N_j represents the involvement of non-formal schools in village j , while G_j represents the involvement of government schools in village j . C_{ij} is a vector of child characteristics and family background variables of individual i in village j . A_j is a dummy variable for the stratum in which village j is located. Since the school enrollment variable, S_{ij} , is a dichotomous variable assuming the value one if the child was enrolled at the time of the survey and zero otherwise, equation (1) is estimated by the maximum likelihood logit method. The regressions are estimated separately for boys and girls. Also, in order to investigate whether there are any differences in the rural and urban areas, separate regressions are estimated for each area.

To find out the different effects that the involvement of non-formal schools has on the enrollment status of girls as compared to boys, the following equation which includes interaction terms between the dummy variable for being a girl and the explanatory variables of interest is estimated:

$$\begin{aligned} \Pr(S_{ij} = 1) = a + bN_j + cG_j + dC_{ij} + eV_j + fA_j + g\text{Girl} * N_j \\ + h\text{Girl} * G_j + i\text{Girl} * C_{ij} + \text{error term} \end{aligned} \quad (2)$$

where Girl is the dummy variable for being a girl, V_j is a dummy variable for village j , and all other variables are as defined above. The variable $\text{Girl} * N_j$ shows the difference in the effects that the involvement of non-formal schools has on the enrollment of girls as compared to boys, and similarly $\text{Girl} * G_j$ shows the difference in the effects of the involvement of government schools on boys and girls. Also, separate regressions are estimated for rural and urban areas.

The next step of the analysis is to relate the enrollment status of girls and boys to the characteristics of non-formal schools and government schools in the villages of residence. The school characteristics of interest are: pupil/teacher

ratio, percentage of teachers present on day of visit, percentage of female teachers, teachers' education and experience, percentage of (non-formal/government) schools in the village with Parent-Teacher Associations (PTAs), and percentage of (non-formal/government) schools in the village with School Management Committees (SMCs). The equation to be estimated is:

$$\Pr(S_{ij} = 1) = a + bNc_j + cGc_j + dC_{ij} + eA_j + \text{error term} \quad (3)$$

where Nc_j is a vector of aggregate village-level characteristics of non-formal schools in village j , and Gc_j is a vector of aggregate village-level characteristics of government schools in village j .

Interaction terms with *Girl*, the dummy variable for being a girl, are included in the next equation to find out the different effects that village-level school characteristics might have on the probability of being enrolled for girls as compared to boys.

$$\Pr(S_{ij} = 1) = a + bNc_j + cGc_j + dC_{ij} + eGirl * Nc_j + fGirl * Gc_j + gGirl * C_{ij} + hA_j + \text{error term} \quad (4)$$

As a corollary to this part of the analysis, I also use school-level data from the School Observation Checklist to find out the school characteristics that affect the attendance rates of boys and girls. The method of ordinary least squares regression is employed, with the dependent variables being school-level attendance rates of boys and girls, and the independent variables are those included in equation (3), together with the level of classroom crowdedness, whether the school has toilet facilities, and whether the school has drinking water facilities. Dummy variables for schools with only boys and schools with only girls are included.

Next I turn to the much smaller sample of children aged 11-12 years old who took the Assessment of Basic Competency (ABC) test. In each cluster, 7 boys and 7 girls are surveyed, totalling 3,360 for all 240 clusters. Because of the small number of children surveyed in each cluster, village-level school characteristics are not employed as explanatory variables. Instead, explanatory variables include the types of school that a child attends, child and family characteristics, village controls and area controls. The regressions to be estimated are:

$$Y_{ij} = a + bT_{ij} + cC_{ij} + dV_j + eA_j + \text{error term} \quad (5)$$

where Y_{ij} represents (i) whether a child passed the ABC test or not, and (ii) test scores for life-skills, reading, writing, and numeracy sections. T_{ij} is the dummy variable for the type of school that the child was attending at the time of survey. I also control for children who have dropped out of school, and the base line for comparison is the group who have never been enrolled. The maximum

likelihood logit estimation is employed for the regression with Y_{ij} indicating whether a child passed the ABC test or not, and the ordinary least squares estimation is employed for the regression with Y_{ij} representing children’s test scores.

The following equation, which includes interaction terms with the dummy variable *Girl*, is estimated with the aim to examine the different effects of the determinants of test scores on boys and girls. All the variables are as defined above.

$$Y_{ij} = a + bT_{ij} + cC_{ij} + dGirl * T_{ij} + eGirl * C_{ij} + fV_j + gA_j + \text{error term} \quad (6)$$

5 Results

5.1 Determinants of enrollment

Table 1 shows logit estimates of school enrollment of boys and girls aged 6 to 10 years old covered under the Education Watch survey⁹. Columns (1) and (2) show the effects of the involvement of non-formal schools and government schools on the probability of being enrolled for boys and girls, respectively, controlling only for stratum effects. Columns (3) and (4) include child characteristics and family background variables. Columns (5) to (8) show separate results for rural and urban areas.

Results from columns (1) and (2) show the negative relationship between the involvement of NGO schools and the probability of being enrolled for boys and girls. The coefficients of ‘Fraction: NGO schools’ are negative and significant for both boys and girls. NGOs’ non-formal schools are built according to demand (in villages where NGOs have their activities), and so more non-formal schools are usually built in villages with more dropout and non-enrolled children. Thus, the negative relationship between the involvement of NGO schools and the probability of being enrolled can be taken as evidence of NGOs’ targeting policy. On the other hand, the effects of the involvement of government schools on enrollment are positive and significant for both boys and girls. One possible reason for this could be because the government is the main provider of primary schools in Bangladesh (over 60% of the children who are enrolled in primary school are in government schools), so it is likely that villages with more government school involvement are those with more supply of schools. Children in those villages are thus more likely to be enrolled.

Columns (3) and (4) include child characteristics and family background variables, which prove to be strong indicators for enrollment. The involvement

⁹I chose the age range between 6 to 10 years old because this is the official primary school age in Bangladesh. However, since at the time of the survey non-formal schools admitted children 8-10 years old and followed a 3-year cycle, separate regressions were run using data on children aged 6-12 years old to capture a more complete effect of non-formal schools, and the main results are very similar to those reported here.

of non-formal schools continues to have negative and significant effects, although the magnitude becomes smaller. Similarly, the involvement of government schools continues to have positive and significant effects.

All the age indicators (for being 7, 8, 9, and 10 years old) are positive and significant, implying that compared to being 6 years old, older children are more likely to be enrolled. It is quite likely that parents may feel that a child is too young to attend school at the age of six, and may only send the child to school when he/she is older.

Many of the child characteristics and family background variables show similar effects on boys and girls, although some do show markedly different effects. For the effects that are similar, the number of adults in the household has a positive and significant effect on the probability of being enrolled for both boys and girls, while the number of siblings shows negative and significant effects with stronger effects for girls. Both father's and mother's education show positive and strongly significant effects on the probability of being enrolled, as expected. Both boys and girls from households that report their economic status as 'always in deficit' and 'sometimes in deficit' are less likely to be enrolled compared to those from households that are 'in balance', which is the omitted category. The negative effect is stronger for households that are 'always in deficit'. Also, both boys and girls are less likely to be enrolled if they are from households with at least one member who sells labor more than 100 days a year.

In columns (3) and (4), the percentage of boys among all siblings shows a negative and strongly significant effect on the probability of being enrolled for boys, while the effect is positive and significant at 10% level for girls (z -value = 1.8 and p -value = 0.08). While this result is intriguing, one possible reason could be the following argument made in Butcher and Case (1994). If parents have an aversion to earnings inequality among their children, they will invest more heavily in children with lower returns to education, so that if boys have higher marginal returns to each level of education, then girls would receive more education in the presence of brothers. However, further research is needed to understand whether this argument could explain the situation in Bangladesh. The effect of being from households that report their economic status as 'surplus' is positive and non-significant for boys but negative and strongly significant for girls. This finding is in accordance with Chowdhury et al. (2001), which attributes the increase in enrollment of girls in poorer households to the work of NGOs in the empowerment of women.

The effect of father's involvement in NGO credit programs is positive for both boys and girls, but it is only significant (at 10% level) in the case of boys. On the other hand, the effect of mother's involvement in NGO credit programs is positive and significant for both boys and girls. However, we have to take into account that most NGO credits are allocated to women, which may partly explain the non-significant effects of fathers' involvement in NGO credit programs.¹⁰ When mothers are involved in income-generating activities,

¹⁰The Education Watch 1998 data shows that, for children aged 6 to 10 years old, 17.8% came from families where mothers were involved in NGO credit programmes, while the same

the effect is negative and significant for girls but marginal and non-significant for boys. One possible reason is that, when mothers are involved in income-generating activities, girls are more likely to have to stay home and help with housework or take care of younger siblings compared to boys.

The Education Watch 1998 data were collected from 8 different strata, which are six rural divisions, the metropolitan cities and the non-metropolitan urban settlements.¹¹ Because of different characteristics of the rural and urban areas, it is possible that the determinants of enrollment might also differ. Columns (5)-(8) show separate regressions for rural and urban areas. Here rural areas include the six rural divisions, and urban areas include the metropolitan cities and the non-metropolitan urban settlements.

The involvement of non-formal schools continues to have negative and significant relationship with the probability of being enrolled for boys and girls, both in the rural and urban areas. This is most likely the result of the targeting policy of NGOs, as mentioned above. On the other hand, the involvement of government schools shows positive and significant effect on the probability of being enrolled for girls in the rural areas only. The effect on boys in the rural areas is positive and significant at 10% level (z-statistics is 1.7 with p-value of 0.09), while the effects on boys and girls in the urban areas are non-significant. The likely reason for this is that, for girls in the rural areas, having a school in the village of residence would increase the probability of being enrolled since many parents would not allow girls to go to schools in other villages. Boys are usually more likely than girls to be able to go to school in nearby villages, if there is no appropriate schooling facility in their own village. For the urban areas, there are some possible reasons that the involvement of government schools does not significantly affect the probability of being enrolled for boys and girls. One reason could be because there are many types of schools in the urban areas compared to the rural areas, and more involvement of government schools does not necessarily imply more schooling facilities in absolute terms. Another possible reason is that the mahalas (small districts in an urban area, equivalent to the villages in the rural areas) are closely situated, and it is relatively easy for children to travel to nearby mahalas to attend school there if there is no appropriate facility in their mahala, which is not the case for the rural areas.

It can be seen that a number of factors that affect enrollment do differ between rural and urban areas. One clear difference is the effect of coming from a family that reported their economic status as being 'surplus' on the probability of being enrolled for girls. The effect is negative but non-significant for girls from rural areas, but negative and strongly significant for girls from urban areas. For urban areas the coefficient of 'surplus' is -0.835, with the z-statistic of 5.10. This implies that the negative and significant effect of coming from an economically better-off family on girls' enrollment found in column

figure in the case of fathers is only 2.5%.

¹¹The six rural divisions are rural Dhaka, rural Chittagong, rural Rajshahi, rural Khulna, rural Barisal, and rural Sylhet, while the metropolitan cities and the non-metropolitan urban areas are located throughout the country.

(4) are mainly driven by sample from the urban areas.¹² Also, a number of family characteristics that significantly affect the probability of being enrolled for children in the rural area do not seem to affect the probability of being enrolled for children in the urban areas. These include: the number of adults in the family, the number of siblings, and percentage of boys among all siblings. There are some possible explanations for this. One is that family compositions and roles of family members differ between rural and urban areas. Rural areas are more likely to have extended family and older relatives in the household are likely to help look after younger children so that the number of adults in the household shows positive and significant effect for children in the rural areas but marginal and non-significant effect for children in the urban areas. Another reason could be because of different types of main occupations in the rural and urban areas. Agriculture is the main occupation in the rural areas, and thus families with more adults would have more people to work in the fields, and so children from households with more adults are more likely to be enrolled. This is not the case in the urban areas, where agriculture is unlikely to be the main occupation.

Another major difference in the determinants of enrollment of girls in the rural and urban areas is the effect of mother’s involvement in income generating activities. The effects of mother’s involvement in income generating activities are negative but non-significant for girls in the rural areas, but negative and strongly significant for girls in the urban areas. This could be due to the difference in the types of income generating activities in the rural and urban areas.

5.2 Does NGO involvement in primary education increase girls’ enrollment?

This subsection explores the role of non-formal schools in increasing girls’ enrollment in primary education. Table 2 shows the effects of the involvement of non-formal schools and government schools on the probability of being enrolled for all children, and on the probability of being enrolled for girls, as compared to boys. The regressions are estimated using equation (2).¹³

In column (1), where village effects are not controlled for, I find a negative and significant relationship between the involvement of non-formal schools and the probability of being enrolled for all children. This result is similar to those found in Table 1, and reflects the targeting policy of NGOs. The involvement of government schools, again similar to the results found in Table 1, shows a positive and significant effect on the probability of being enrolled for all children. In column (3), where village effects are controlled for, the coefficients of both

¹²Separate regressions were run for the metropolitan cities and the non-metropolitan urban settlements, and in both strata negative and significant effects of ‘surplus’ on girls’ enrollment were found.

¹³The results regarding child and family characteristics obtained from running the regressions using Equation (2) are very similar to those reported in Table 1, and are not reported here.

the involvement of non-formal schools and government schools become non-significant. This is as expected, since both the involvement of non-formal schools in a village and the involvement of government schools in a village are village-level characteristics, the effects of which are usually absorbed by village dummy variables.

The main results of this table are shown in columns (2) and (4). Interaction terms with the dummy variable ‘Girl’, which is equal to 1 if a child is a girl and 0 otherwise, are included for all explanatory variables except village and stratum effects. In column (2), the coefficient of the interaction term ‘Girl*Fraction NGO’ is positive and significant at 1% level, indicating that being in villages with a higher proportion of children enrolled in non-formal schools increases the probability of being enrolled for girls as compared to boys. This result remains unchanged in column (4), where village effects are included. The coefficient of the interaction term ‘Girl*Fraction Gov.’ is positive though not significant in column (2) and is positive and significant at 10% level in column (4).

These results lead us to conclude that the involvement of non-formal schools does significantly increase the probability of being enrolled for girls as compared to boys. The effect of the involvement of government schools on the probability of being enrolled for girls also appears to be positive though not statistically significant.

Table 3 further investigates the effects of the involvement of non-formal schools in the case of rural and urban areas. Because rural and urban areas differ in many aspects, it is possible that the effects of the involvement of non-formal schools might differ between the two areas. For rural areas, columns (2) and (4) show that the coefficients of ‘Girl*Fraction NGO’ are positive and strongly significant both with and without village effects. The effects are stronger compared to the case for all regions in Bangladesh, as reported in Table 2. Similar comparison results are obtained when village effects are controlled for.

Columns (6) and (8) show markedly different results in the case of urban Bangladesh. When village effects are not controlled for, the coefficient of ‘Girl*Fraction NGO’ is slightly negative and non-significant. When village effects are controlled for, the coefficient becomes positive though still non-significant. In the urban areas, the involvement of non-formal schools does not appear to increase the probability of being enrolled for girls as compared to boys.

These results suggest that the effects of non-formal schools in increasing girls’ enrollment found in the case of all Bangladesh operate mainly through the rural areas.

Because the urban areas consist of two strata, the metropolitan cities and the non-metropolitan urban settlements, I further investigate whether the non-significant effects of the involvement of non-formal schools found in the urban areas arose from either one or both of these strata. Table 8 (Appendix 2) shows the coefficients of the interaction term ‘Girl*Fraction NGO’, obtained from running regressions using equation (3), for the cases of all Bangladesh, rural areas, urban areas, and from excluding each single stratum from the sample. When metropolitan cities are excluded from the sample, the coefficients and z-

statistics of ‘Girl*Fraction NGO’ are the highest among all cases. On the other hand, when non-metropolitan urban settlements are excluded from the sample, the coefficients and z-statistics of ‘Girl*Fraction NGO’ remain similar to most other cases. This suggests that it is mainly in the metropolitan cities that the involvement of non-formal schools has little effect on girls’ enrollment.

This finding coincides with BRAC personnel’s observations that BRAC schools in general operate much better in rural areas compared to metropolitan cities. In metropolitan cities, BRAC schools face many problems including noise pollution and the crowdedness of the areas where the schools are usually located, which hinder learning activities. Moreover, many students who attend BRAC schools in metropolitan cities are the children of construction workers or day-time laborers, who often have to move from site to site. Dropout rates in BRAC schools in metropolitan cities are much higher compared to those in the rural areas.

From Tables 2 and 3, we can conclude that the involvement of non-formal schools significantly increases the probability of being enrolled for girls as compared to boys, and the effects operate mainly through schools in the rural and non-metropolitan urban areas. This leads us to the next question: what are the characteristics of non-formal schools that encourage the enrollment of girls? This issue is explored in the next subsection.

5.3 School characteristics that affect girls’ enrollment rates

This subsection examines the relationship between village-level school characteristics and the probability of being enrolled for boys and girls. In order to find out whether the probability of being enrolled could partly be explained by village-level school characteristics, the following first-step test was conducted. I ran three regressions, using enrollment status as the dependent variable, and village dummy variables as explanatory variables. For the first regression, no other control is included, for the second regression stratum effects are included, and for the third regression both stratum effects and child and family characteristics are controlled for. For all three regressions, village dummy variables are jointly significant. Next I investigated whether the difference in enrollment reflected by village dummy variables could be explained by village-level school characteristics. I used the coefficients of village dummy variables from the third regression (with full controls) in the first step as dependent variables, and village-level school characteristics as explanatory variables. The adjusted R-square is 0.363, and village-level school characteristics are jointly significant. This result suggests that the difference in enrollment could partly be explained by village-level school characteristics.

The relationship between village-level school characteristics and the probability of being enrolled for children are explored using equations (3) and (4). Here I focus on the following characteristics of government schools and non-formal schools: pupil/teacher ratio, percentage of teachers present on the day

of visit, percentage of female teachers, teachers' education and experience, percentage of schools with Parent-Teacher Associations (PTAs) and percentage of schools with School Management Committees (SMCs). Table 4 shows the main regression results. Columns (1) and (4) follow equation (3), and show the results for all children. Columns (2)-(3) and (5)-(6) follow equation (4), which includes interaction terms with the dummy variable Girl. Child and family characteristics are not controlled for in columns (1)-(3), and are controlled for in columns (4)-(6).

Columns (1) and (4) show that the variables that positively and significantly affect the probability of being enrolled for all children, both with and without controls for child and family characteristics are: percentage of female teachers in non-formal schools, non-formal school teachers' education, percentage of non-formal schools with PTAs and percentage of government schools with PTAs. In column (1), pupil/teacher ratio in government schools, government school teachers' education, government school teachers' experience, and percentage of government schools with SMCs also show positive and significant effects on the probability of being enrolled, but the effects become non-significant once child and family characteristics are controlled for. In column (4), pupil/teacher ratio in non-formal schools shows negative and significant effects on the probability of being enrolled for children when child and family characteristics are controlled for.

The results of the regressions with interaction terms, as reported in columns (2)-(3) and (5)-(6), show that the two main school characteristics that significantly increase the probability of being enrolled for girls as compared to boys are percentage of female teachers in non-formal schools and government school teachers' experience. Percentage of female teachers in non-formal schools are of particular interest, since it shows strong and positive effects in all columns in Table 4. From columns (5) and (6) we can see that this variable both positively affect the probability of being enrolled for all children, as well as significantly increases the probability of being enrolled for girls as compared to boys. Government school teachers' experience, on the other hand, is positive and significant in column (6) but marginal and non-significant in column (5). This implies that government school teachers' experience significantly increases the probability of being enrolled for girls as compared to boys, but does not increase boys' probability of being enrolled.

Columns (5) and (6) show that, for non-formal schools, the following characteristics help to increase the probability of being enrolled for both boys and girls: lower pupil/teacher ratio, higher teachers' education, and having PTAs. In the case of government schools, having PTAs and having SMCs appear to positively and significantly affect the probability of being enrolled for boys and girls.

Corollary 1 *School characteristics that affect attendance*

Table 5 shows the relationship between school characteristics and attendance rates of boys and girls. The data used here are school-level information from the

School Observation Checklist. The dependent variables are the attendance rates of boys and girls, and the explanatory variables include school characteristics as employed in Table 4, together with some additional characteristics, which are: the level of classroom crowdedness¹⁴, whether the school has toilet facility, whether the school has drinking water facility, and dummy variables indicating schools with only boys and only girls.

Columns (1) and (2) show the results for all types of schools without controlling for village effects, while columns (3) and (4) show the corresponding results with village controls. Most of the results remain quite similar with and without village controls. Columns (1) - (4) show that the two most important school characteristics that affect the attendance rates of boys and girls are the percentage of teachers present on the day of visit, and the level of classroom crowdedness. These two characteristics affect both boys and girls similarly. For percentage of teachers present on the day of visit, the effect is positive and significant for both boys and girls when village effects are not controlled for, and positive and significant for girls when village effects are controlled for. The effect is positive and almost significant (t-value = 1.8) for boys when village effects are controlled for. This result suggests that teacher absenteeism, a phenomenon also quite common in other developing countries such as India (The Probe, 1999), discourages children from attending school. The level of classroom crowdedness also appears to discourage attendance; the effects are negative and significant in all columns.

School facility, as represented by toilet facility and drinking water facility, appears to encourage attendance. The effect of having toilet facility is positive and significant for both boys and girls (the level of significance is 5% for boys and 10% for girls) when village effects are controlled for, and positive though not significant without village effects. The effect of having drinking water facility is significant without village effects, although it becomes positive but non-significant with village effects.

The effects of the indicator 'NGO schools' are positive and significant for both boys and girls when village effects are not controlled for. When village effects are controlled for, the effect is positive and significant for girls and positive though not significant for boys. The coefficient of 'NGO schools' is positive and largest among all types of schools (results not shown). This suggests that attendance rates tend to be highest in non-formal schools as compared to other types of schools under the survey. The effects of the indicator 'government schools' are non-significant for all columns. This result is consistent with the general perception that attendance rates are usually higher in non-formal schools compared to government schools.

¹⁴The level of classroom crowdedness is defined as the number of children in the register book for each class divided by the number of students that can seat with ease (as observed by the interviewers).

5.4 Determinants of test scores

Table 6 examines the determinants of test scores of children aged 11 to 12 years old who took the Assessment of Basic Competency (ABC) survey. In Table 7, interaction terms with the dummy variable Girl are included for all explanatory variables to investigate different determinants of test scores for boys and girls. The Assessment of Basic Competency survey consists of 4 sections: Life skills/knowledge, Reading, Writing, and Numeracy skills. A child is considered to have ‘basic education’ if he/she satisfied the following criteria: (i) answering correctly at least 7 out of 10 life skills questions; (ii) answering correctly at least 3 of the 4 questions from the reading comprehension passage; (iii) correctly communicating a given message through a letter; and (iv) answering correctly at least 3 of the 4 mental arithmetic questions (Chowdhury et al., 1999). The dependent variables in Tables 6 and 7 are (i) whether a child has ‘basic education’ or not, and (ii) test scores from each of the 4 sections. The explanatory variables include school types (if the child was enrolled at the time of the survey), and child and family characteristics. Village effects and stratum effects are controlled for.

Table 6 shows that, compared to being non-enrolled, being enrolled in a non-formal school has positive and strongly significant effects on the probability of passing the ABC test, and on all test scores. Being enrolled in a government school has positive and significant effects on reading and writing skills, the effects on numeracy skills and the probability of passing the ABC test are positive though not significant. However, being enrolled in a government school does not appear to have any effect on the test scores of life skills/knowledge section. The fact that non-formal schools appear to have a positive and significant effect on the test scores of life skills/knowledge section, while government schools do not appear to have any effect, could be due to the difference in the curriculum of both types of schools. It has to be kept in mind that non-formal schools emphasize more on matters related to rural life, such as health and personal hygiene, and such matters are asked in the life skills/knowledge section.

Girls appear to do worse than boys in all sections, particularly numeracy skills. The coefficients on the dummy variable Girl are negative and significant for all sections (for life skills/knowledge it is significant at the 10% level, for all other sections it is significant at the 5% level or less). The strongest indicator of test scores for all sections appears to be the last class passed. Listening to the radio, watching television, and reading newspaper show positive and significant effects on the scores of life skills section. In addition, listening to the radio has positive and significant effect on the probability of passing the ABC test and on the scores of reading skills section. Reading newspaper also shows a positive and significant effect on the probability of passing the ABC test. Father’s education appears to have positive and significant effects on the probability of passing the ABC test, and on all test scores except numeracy.¹⁵ Self-perceived

¹⁵The variable ‘mother’s education’ is dropped from the regressions in this section because the variable is strongly correlated with ‘father’s education’ (the correlation coefficient is 0.702). Because of the small sample size employed in this section, regressions that include both ‘fa-

household economic status does not appear to significantly affect children's test scores. Other factors that are related to household income¹⁶ also do not appear to significantly affect children's test scores.

Adjusted R-squares for reading and writing skills are considerably higher compared to life skills and numeracy skills. This reflects the fact that reading and writing skills are mainly acquired in school and so could be explained in a large part by the explanatory variables employed here. On the other hand, life skills and numeracy skills could be acquired even if a child does not attend school, as is reported in Chowdhury et al. (1999) that many children who did not attend school could pass the numeracy skills section of the ABC test.

Table 7 shows the results of the regressions where interaction terms with the dummy variable Girl are included for all explanatory variables. Columns (1) and (2) show that, for the probability of passing the ABC test, the effect of attending a non-formal school appears to differ between boys and girls. The effect is positive though not significant for boys (with z-statistics of 1.63). Conditioned on being a girl, however, attending a non-formal school significantly increases the probability of passing the ABC test. The coefficient of 'Girl*Currently attending NGO school' is positive and significant at 10% (z-statistics = 1.9). However, for all 4 sections of the test scores, the coefficients of 'Girl*Currently attending NGO school' are non-significant. These results suggest that, although attending a non-formal school does not have different effects for each section's test scores for boys and girls, it appears to increase the probability of passing the ABC test for girls as compared to boys.

The coefficients of 'Girl*Currently attending government school' are non-significant for both the probability of passing the ABC test and for all test scores. Thus attending a government school does not appear to have different effects on the probability of passing the ABC test and on the test scores of boys and girls.

A quick glance at Table 7 gives an impression that most of the determinants of test scores do not differ between boys and girls. The interaction terms with 'Girl' are mostly non-significant. Some of the few exceptions include the followings: The last class passed appears to have a positive and significant effect on the test scores of the numeracy skills section of girls as compared to boys. In general, boys tend to do better than girls on the numeracy skills section (the coefficient of 'Girl' in Table 6 is negative and strongly significant for the numeracy skills section), so this evidence implies that girls tend to acquire their numeracy skills from the classroom more compared to boys. Reading newspapers positively and significantly affect the test scores of reading and writing skills sections for girls compared to boys.

Being from families that report their economic status as surplus shows positive effects on the test scores of reading and writing skills sections for girls. However, 'father's education' and 'mother's education' failed to show significant effects of either one or both variables.

¹⁶These include: whether the father has access to NGO credit or not, whether the mother has access to NGO credit or not, whether the mother is involved in income generating activities or not, and whether any member of the household sells labour more than 100 days per year or not.

tive and significant effects on the scores of reading and writing skills section for girls compared to boys, which is rather unexpected. For children that are from economically well-off families, girls, particularly those from the urban areas, are less likely to be enrolled compared to boys (as reported in Table 1). However, the results here show that girls from those families actually tend to score higher in the writing and reading skills sections compared to boys. Some possible reasons for this could be because richer parents teach their girls at home, or hire private tutors, instead of sending the girls to school.

The results from Tables 6 and 7 lead us to conclude that, compared to being non-enrolled, being enrolled in a non-formal school significantly increases the test scores of all sections and the probability of passing the ABC test. Attending a non-formal school does not show different effects on the test scores for boys and girls, although it significantly (at the 10% level) increases the probability of passing the ABC test for girls as compared to boys. Attending a government school positively and significantly affects the test scores of reading and writing skills sections, and the effects do not differ between boys and girls. Most of the determinants of test scores appear to be similar for boys and girls.

6 Conclusions

The significant increase in primary enrollment rate of girls in Bangladesh in recent years marked an achievement of the country's education system. Efforts by the government, non-governmental organizations, and the private sector have all contributed to this achievement. One of the main factors that is believed to have brought about the increase in girls' primary enrollment rate is the involvement of NGOs' non-formal schools, which aims to provide basic education to poor children who are non-enrolled or have dropped out of school. This paper attempts to identify the effects that the involvement of non-formal schools have on the enrollment of girls, and the characteristics of non-formal schools and government schools that affect the educational outcomes of boys and girls.

The results show that the involvement of non-formal schools significantly increases the probability of being enrolled for girls as compared to boys, controlling for other factors. It is mainly in the rural and non-metropolitan urban areas that non-formal schools appear to have strong and significant effects in increasing girls' probability of being enrolled. In metropolitan cities, however, non-formal schools do not appear to have such effects.

Several factors that determine enrollment differ sharply between girls and boys in Bangladesh, some of which are intriguing and requires further research. For example, controlling for sibling size, having more brothers lowers the probability of being enrolled for boys but increases the probability of being enrolled for girls. Moreover, coming from an economically 'surplus' family lowers the probability of being enrolled for girls but shows no significant effect for boys.

The most prominent school characteristic that encourages girls' enrollment is the percentage of female teachers in non-formal schools. Teacher absenteeism

and the level of classroom crowdedness are the two most important determinants of attendance for both boys and girls. Being enrolled in a non-formal school shows stronger effects on the Assessment of Basic Competency (ABC) test scores compared to being enrolled in a government school, controlling for other factors. Children attending non-formal schools in fact performed better than those attending government schools on the ABC test, which is surprising since children in non-formal schools are mainly those from the poorest families who were non-enrolled or have dropped out.

Non-formal education is an innovation aimed to reach the poorest children who did not have a chance to attend formal school, and has many characteristics that differ from formal education in order to suit the needs of the rural poor. The results here confirm that the involvement of non-formal schools has significantly contributed to the increase in the enrollment rate of girls in Bangladesh in recent years. In this paper I have identified some characteristics of non-formal schools that affect educational outcomes. However, certain characteristics that are believed to have contributed to the high attendance rates and high scores on the ABC test are those related to pedagogy practices and are difficult to capture in quantitative data. As one education specialist at the World Bank Dhaka office comments, "*Teachers in non-formal schools really teach, and children like to go to school because it is fun.*" There are other aspects of non-formal schools that are beyond the scope of this paper.

Data Appendix

The data used in the paper is the first round of data collected under the Education Watch Project. The Campaign for Popular Education (CAMPE), which initiated the project in 1998, provided the secretariat for the project, while the Research and Evaluation Division of BRAC carried out the actual management and execution of the study. For the first round of the Education Watch data, three instruments were used:

(1.) Household Survey Questionnaire: The instrument was developed to provide information on gross and net enrollment, non-schooled children, availability of textbooks and parental participation in school matters, among other matters. The instrument has four sections: (i) profile of household members (age, sex, and number of classes completed by each household member); (ii) schooling of individuals aged 4-20 years (enrollment status, type of school if enrolled at the time of the survey, last class passed, causes of dropout or non-enrollment if dropped out or non-enrolled, and schooling information on children enrolled at the time of survey); (iii) parental information (level of education, occupation of father, mother's involvement in any income generating activities); (iv) household information (self-perceived yearly economic status, amount of land possessed, religion, and labour sale status of members of the household).

(2.) Assessment of Basic Competencies (ABC) questionnaire: This instrument was used to provide information about the level of basic competencies of

the children as an indicator of achievement. This instrument was developed in 1992-1993 to assess basic educational level of the children of Bangladesh (Chowdhury et al., 1994). There are four sections in the questionnaire:

a. Life skills/knowledge: This section includes questions on health, population, attitude about gender, knowledge about the outside world.

b. Reading skills: There are three parts: five words, a sentence, and a comprehension passage.

c. Writing skills: There are four parts: writing own name and name of village/town, three words, a sentence, and a letter.

d. Numeracy skills: There are six parts: counting, reading numbers, writing numbers, addition, subtraction, and mental arithmetic.

A child is considered to have 'basic education' if he/she satisfied the following criteria: (i) answering correctly at least seven of the ten life skills questions; (ii) answering correctly at least three of the four questions from the reading comprehension passage; (iii) correctly communicating a given message through a letter; and (iv) answering correctly at least three of the four mental arithmetic questions.

(3.) School Observation Checklist: This instrument was developed to collect information about the schools and other school related matters. There are seven sections: general information (e.g. physical facilities, school dress, performance in scholarship examination), classroom information (e.g. capacity in each classroom, number of students in school registers, and number of students who were present), teachers' profile (sex, religion, current designation, education and experience), retention and dropout, community participation (information on School Management Committee and Parent Teacher Association), school visit (information on school visit by the Thana Education Officers and Assistant Thana Education Officers for government schools, or the Programme Organizers for the non-formal schools), and loss due to the floods of 1998.

Because of known variations in the educational attainment among the geographical regions in the country, eight different surveys were carried out, one in each of the following strata: Rural Dhaka Division, Rural Chittagong Division, Rural Rajshahi Division, Rural Khulna Division, Rural Barisal Division, Rural Sylhet Division, Metropolitan cities, and Other urban areas (non-metropolitan urban settlements). For each stratum the same sample size and similar sampling strategy were followed, as discussed in section 3. The interviewers and the supervisors were trained over a seven-day long training workshop. Senior staff members of BRAC's Research and Evaluation Division and CAMPE conducted the training sessions.

Although the study followed a scientific methodology, it has certain limitations which include the followings: (i) During the household survey, some information might not have been collected from the right persons, i.e., the questions might have been addressed to the person who did not know the correct answers. (ii) The survey collected information from schools which were situated in villages selected for the household survey, thus the schools cannot be considered to be representative of all schools for the particular stratum. (iii) The ABC is a curriculum independent test, and does not provide an assessment on

the basis of the 53 terminal competencies expected in five-year primary school cycle. (iv) The study assumed correct reporting of the age of the child, which might not have been the case for some children.

TABLE 1
Determinants of School Enrollment: Boys and Girls aged 6 to 10

Explanatory variables	Dependent variable: Currently enrolled in school = 1							
	All Bangladesh				Rural		Urban	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Fraction: NGO schools	-1.29	-1.03	-1.03	-.600	-1.01	-.527	-1.07	-.979
	(-9.0)**	(-6.8)**	(-6.7)**	(-3.7)**	(-5.6)**	(-2.68)**	(-3.4)**	(-3.1)**
Fraction: Gov. schools	.256	.382	.205	.290	.139	.256	.244	.262
	(3.6)**	(5.1)**	(2.7)**	(3.6)**	(1.7)	(2.95)**	(1.1)	(1.1)
Indicator: age 7			.959	.931	.91	0.91	1.22	1.031
			(15.5)**	(14.7)**	(13.3)**	(12.8)**	(8.2)**	(7.09)**
Indicator: age 8			1.31	1.28	1.27	1.29	1.56	1.304
			(20.3)**	(19.1)**	(17.7)**	(17.1)**	(10.1)**	(8.66)**
Indicator: age 9			1.48	1.58	1.47	1.57	1.62	1.666
			(20.6)**	(20.3)**	(18.4)**	(17.8)**	(9.7)**	(9.82)**
Indicator: age 10			1.11	1.17	1.05	1.20	1.39	1.116
			(18.3)**	(18.0)**	(15.7)**	(16.4)**	(9.6)**	(7.76)**
Number adults			.082	.082	0.097	.113	.015	-.027
			(4.3)**	(4.1)**	(4.5)**	(4.9)**	(.36)	(-.66)
Number siblings			-.038	-.066	-0.065	-.091	.067	.009
			(-2.8)**	(-4.6)**	(-4.3)**	(-5.6)**	(2.0)*	(.27)
Percentage of boys			-.462	.174	-.47	0.17	-.353	.153
			(-5.0)**	(1.8)	(-4.5)**	(1.5)	(-1.7)	(.72)
Female head of household			-.185	-.032	-.246	-.055	.071	.088
			(-1.7)	(-.27)	(-2.1)*	(-0.4)	(.25)	(.33)
Father's education			.085	.116	.104	.131	.037	.087
			(10.5)**	(13.0)**	(10.8)**	(12.0)**	(2.3)*	(5.3)**
Mother's education			.153	.153	.15	.152	.186	.176
			(12.6)**	(11.7)**	(10.3)**	(9.4)**	(8.2)**	(7.7)**
Always in deficit			-.501	-.503	-.486	-.557	-.605	-.269
			(-8.4)**	(-7.9)**	(-7.2)**	(-7.5)**	(-4.5)**	(-2.0)*
Sometimes in deficit			-.088	-.092	-.132	-.176	.028	.214
			(-1.5)	(-1.5)	(-1.9)	(-2.4)*	(.22)	(1.6)
Surplus			.160	-.410	.109	-.105	.325	-.835
			(1.56)	(-4.1)**	(.92)	(-.81)	(1.6)	(-5.1)**
Father: NGO credit			.250	.034	.207	-.024	.945	.722
			(1.8)	(.24)	(1.5)	(-.17)	(1.3)	(.88)
Mother: NGO credit			.274	.356	.201	.302	.655	.620
			(4.9)**	(5.9)**	(3.4)**	(4.6)**	(4.0)**	(3.9)**
Mother: Income generate			-.006	-.137	.076	-.079	-.375	-.335
			(-.13)	(-2.6)**	(1.4)	(-1.3)	(-3.2)**	(-3.0)**
Member of hh sells labour			-.455	-.416	-.516	-.433	-.243	-.395
			(-10.1)**	(-8.6)**	(-10.2)**	(-7.9)**	(-2.3)*	(-3.7)**
Stratum effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	15868	15210	15846	15187	12568	11965	3278	3222
Pseudo R2	.011	.014	.138	.147	.13	.147	.187	.175

Z-statistics are in parentheses, and * denotes significance at the 5% level while ** denotes significance at the 1% level.

TABLE 2
School Enrollment: Boys and Girls aged 6 to 10

Dependent variable: currently enrolled in school = 1				
Explanatory variables:	Pooled	Interacted	Pooled	Interacted
Fraction: NGO schools	- .81 (-7.3)**	-1.09 (-7.3)**	.338 (.70)	.067 (.14)
Girl*Fraction NGO		.586 (2.8)**		.617 (2.8)**
Fraction: Gov. schools	.239 (4.4)**	.157 (2.09)**	-.624 (-1.0)	-.778 (-1.3)
Girl*Fraction Gov.		.170 (1.6)		.203 (1.8)
Control for child and family characteristics	Yes	Yes	Yes	Yes
Stratum effects	Yes	Yes	Yes	Yes
Village effects	No	No	Yes	Yes
Number of observations	31033	31033	31033	31033
Pseudo R2	.139	.141	.195	.197

Z-statistics are in parentheses, and * denotes significance at the 5% level while ** denotes significance at the 1% level.

TABLE 3
School Enrollment: Boys and Girls aged 6 to 10 (Rural and Urban areas)

Dependent variable: currently enrolled in school = 1								
Explanatory variables	Rural				Urban			
	Pooled	Interacted	Pooled	Interacted	Pooled	Interacted	Pooled	Interacted
Fraction: NGO schools	-.773 (-5.8)**	-1.17 (-6.6)**	.543 (1.1)	.207 (.42)	-.995 (-4.5)**	-1.01 (-3.3)**		
Girl*Fraction NGO		.846 (3.4)**		.802 (3.1)**		-.027 (-.06)		.105 (.23)
Fraction Gov. schools	.188 (3.2)**	.128 (1.6)	-1.89 (-4.2)**	-1.97 (-4.4)**	.247 (1.5)	.227 (.99)	-.730 (-1.0)	-.82 (-1.1)
Girl*Fraction Gov.		.127 (1.1)		.167 (1.4)		.062 (.19)		.056 (.16)
Control for child and family characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Stratum effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village effects	No	No	Yes	Yes	No	No	Yes	Yes
Number of observations	24533	24533	24533	24533	6500	6500	6500	6500
Pseudo R2	.135	.138	.190	.194	.174	.181	.222	.228

Z-statistics are in parentheses, and * denotes significance at the 5% level while ** denotes significance at the 1% level.

TABLE 4
School Characteristics and Enrollment: Boys and Girls aged 6 to 10

Dependent variable: currently enrolled in school = 1						
Explanatory variables:	Pooled	Interacted		Pooled	Interacted	
		Level	*Girl		Level	*Girl
Pupil/teacher ratio	-.005	-.003	-.008	-.024	-.024	-.000
(NGO)	(-.76)	(-.30)	(-.61)	(-3.0)**	(-2.4)*	(-.03)
Pupil/teacher ratio	.002	-.001	.001	-.001	-.006	.002
(Gov.)	(2.1)*	(-.36)	(.48)	(-1.3)	(-3.1)**	(.74)
% teachers present	-.106	.745	-1.66	-.615	-.081	-1.00
(NGO)	(-.26)	(1.4)	(-2.3)*	(-1.4)	(-.14)	(-1.3)
% teachers present	.439	.611	-.464	.381	.640	-.498
(Gov.)	(1.8)	(1.9)	(-1.0)	(1.4)	(1.8)	(-1.0)
% female teachers	1.27	.926	.736	1.16	.942	.638
(NGO)	(8.8)**	(4.8)**	(2.7)**	(7.3)**	(4.4)**	(2.1)*
% female teachers	.178	.179	-.072	-.337	-.382	.019
(Gov.)	(1.1)	(.91)	(-.28)	(-1.9)	(-1.8)	(.07)
Teachers' education	.130	.175	-.067	.098	.153	-.083
(NGO)	(4.0)**	(4.0)**	(-1.1)	(2.7)**	(3.1)**	(-1.2)
Teachers' education	.194	.134	.126	.096	.048	.113
(Gov.)	(3.7)**	(2.3)*	(1.9)	(1.7)	(.73)	(1.5)
Teachers' experience	.018	.019	.015	.023	.038	.003
(NGO)	(1.0)	(.81)	(.46)	(1.2)	(1.5)	(.08)
Teachers' experience	.035	.016	.041	.017	-.001	.042
(Gov.)	(3.0)**	(1.2)	(2.6)**	(1.4)	(-1.0)	(2.4)*
% of schools with PTAs	.458	.443	.053	.446	.509	-.042
(NGO)	(5.7)**	(4.3)**	(.37)	(5.1)**	(4.4)**	(-27)
% of schools with PTAs	.203	.169	.003	.199	.244	-.070
(Gov.)	(2.4)*	(1.6)	(.02)	(2.2)*	(2.1)*	(-45)
% of schools with SMCs	-.102	-.141	.040	-.020	.022	-.118
(NGO)	(-1.0)	(-1.0)	(.20)	(-1.7)	(.14)	(-55)
% of schools with SMCs	1.51	1.65	.102	.908	1.40	-.022
(Gov.)	(3.0)**	(2.6)**	(.14)	(1.6)	(2.0)*	(-.02)
Control for child and family characteristics	No	No		Yes	Yes	
Stratum effects	Yes	Yes		Yes	Yes	
Number of observations	9090	9090		9078	9078	
Pseudo R2	.026	.03		.145	.154	

Z-statistics are in parentheses, and * denotes significance at the 5% level while ** denotes significance at the 1% level.

TABLE 5
Attendance: Boys and Girls aged 6 to 10

Explanatory variables:	Boys	Girls	Boys	Girls
Pupil/teacher ratio	-.000 (-.03)	-.0001 (-.33)	-.0002 (-.86)	-.0003 (-1.2)
% teachers present on day of visit	.082 (2.1)*	.102 (3.1)**	.089 (1.8)	.121 (3.2)**
% female teachers	.018 (.70)	.011 (.48)	.049 (1.6)	.040 (1.3)
Teachers' education	.005 (1.2)	.004 (1.4)	.0003 (.07)	-.001 (-.30)
Teachers' experience	.001 (.71)	.001 (.74)	.0002 (.08)	.001 (.74)
Whether the school has PTA	-.023 (-1.7)	-.024 (-1.7)	.019 (1.0)	.010 (.60)
Whether the school has SMC	-.002 (-.07)	.000 (.00)	-.011 (-.31)	-.013 (-.43)
Level of classroom crowdedness	-.033 (-4.6)**	-.026 (-3.7)**	-.034 (-4.1)**	-.026 (-3.0)**
Toilet facility	.024 (1.5)	.018 (1.1)	.042 (2.1)*	.034 (1.9)
Drinking water facility	.029 (2.2)*	.036 (2.5)*	.030 (1.8)	.024 (1.4)
Only boys schools	.168 (7.5)**		.144 (2.2)*	
Only girls schools		-.060 (-1.4)		.016 (.26)
NGO schools	.232 (3.1)**	.309 (2.9)**	.440 (1.8)	.699 (2.0)*
Government schools	-.043 (-.61)	.014 (.13)	.197 (.82)	.425 (1.2)
Control for other school types	Yes	Yes	Yes	Yes
Stratum effects	Yes	Yes	Yes	Yes
Village effects	No	No	Yes	Yes
Number of observations	959	968	959	968
Adjusted R2	.370	.356	.431	.475

T-statistics are in parentheses, and * denotes significance at the 5% level while ** denotes significance at the 1% level. Regressions for columns (1), (3) and (4) are estimated with heteroskedasticity-robust standard errors.

TABLE 6
Test scores: Children aged 11 to 12

Explanatory variables:	ABC	Life skills	Reading	Writing	Numeracy
Currently attending	1.85	.947	.849	2.62	.432
NGO school	(4.1)**	(4.8)**	(6.6)**	(10.0)**	(3.4)**
Currently attending	.613	-.018	.333	.907	.178
government school	(1.5)	(-.12)	(3.6)**	(4.8)**	(1.6)
Indicator: Girl	-.412	-.133	-.126	-.292	-.472
	(-3.3)**	(-1.9)	(-2.6)**	(-3.1)**	(-10.7)**
Class passed	.716	.376	.518	1.08	.272
	(13.2)**	(13.6)**	(27.0)**	(29.0)**	(17.8)**
Listen to the radio	.281	.245	.122	.113	.016
	(2.4)**	(3.8)**	(2.6)**	(1.3)	(.40)
Watch television	.014	.175	-.008	-.043	-.028
	(.11)	(2.4)*	(-.16)	(-.44)	(-.61)
Read newspaper	.979	.389	.069	.225	.026
	(4.6)**	(3.7)**	(.93)	(1.4)	(.45)
Father's education	.039	.017	.020	.053	-.002
	(2.3)*	(1.8)	(2.9)**	(3.9)**	(-.44)
Mother's education	.039	.025	-.012	.006	.009
	(1.7)	(2.0)*	(-1.3)	(.32)	(1.3)
Always in deficit	-.039	.107	-.073	-.150	.056
	(-.24)	(1.2)	(-1.2)	(-1.3)	(1.0)
Sometimes in deficit	-.094	-.078	-.023	-.169	.038
	(-.69)	(-1.0)	(-.42)	(-1.6)	(.80)
Surplus	-.151	-.126	-.064	-.270	.015
	(-.81)	(-1.2)	(-.83)	(1.5)	(.25)
Father: access to NGO	.575	.258	.009	.363	.046
credit	(1.7)	(1.2)	(.07)	(1.4)	(.39)
Mother: access to NGO	.116	.143	-.004	-.128	.047
credit	(.78)	(1.7)	(-.06)	(-1.1)	(.97)
Mother: involve in income	-.065	-.009	-.072	-.204	.008
generating activities	(-.50)	(-.12)	(-1.4)	(-2.0)*	(.18)
Member of household sells	.149	-.047	-.033	-.033	.058
labour > 100 days/year	(1.2)	(-.66)	(-.68)	(-.35)	(1.4)
Number of observations	3065	3324	3324	3324	3324
Pseudo R2 / Adjusted R2	.332	.364	.515	.575	.288

For column (1), z-statistics are in parentheses. For columns (2) to (5), t-statistics are in parentheses, with heteroskedasticity-robust standard errors. For all columns, * denotes significance at the 5% level while ** denotes significance at the 1% level. Control for all other types of schools, other child and family characteristics, stratum effects, and village effects are included for all columns.

TABLE 7
Test scores: Boys and Girls aged 11 to 12

Explanatory variables:	ABC		Life skills		Reading		Writing		Numeracy	
	Level	*Girl	Level	*Girl	Level	*Girl	Level	*Girl	Level	*Girl
Currently attending NGO school	.967 (1.6)	1.73 (1.9)	.719 (2.7)**	.435 (1.2)	.868 (4.8)**	-.002 (-.01)	2.40 (6.6)**	.398 (.81)	.387 (2.5)*	.082 (.35)
Currently attending government school	.096 (.19)	1.17 (1.5)	-.106 (-.51)	.234 (.80)	.378 (3.0)**	-.066 (-.37)	.946 (3.6)**	-.061 (-.17)	.217 (1.4)	-.073 (-.34)
Class passed	.769 (10.1)**	-.075 (-.71)	.399 (10.3)**	-.049 (-.92)	.525 (20.0)**	-.009 (-.25)	1.08 (21.5)**	.022 (.30)	.227 (9.7)**	.100 (2.9)**
Listen to the radio	.554 (3.3)**	-.519 (-2.2)*	.236 (2.7)**	.018 (.14)	.148 (2.3)*	-.046 (-.50)	.228 (1.9)	-.249 (-1.4)	-.012 (-.24)	.074 (.98)
Watch television	-.143 (-.79)	.346 (1.4)	.196 (2.0)*	-.046 (-.34)	.022 (.32)	-.077 (-.80)	-.053 (-.41)	.020 (.11)	.036 (.64)	-.140 (-1.7)
Read newspaper	1.00 (3.5)**	.100 (.24)	.377 (2.9)**	.047 (.22)	-.111 (-1.2)	.461 (3.0)**	-.041 (-.22)	.722 (2.3)*	-.017 (-.27)	.219 (1.9)
Number adults	.029 (.46)	-.022 (-.27)	.043 (1.3)	.013 (.28)	.036 (1.6)	-.036 (-1.1)	.107 (2.5)*	-.121 (-1.8)	.018 (.95)	.015 (.54)
Number siblings	-.050 (-.90)	.018 (.24)	-.085 (-2.9)**	.032 (.82)	-.046 (-2.3)*	.022 (.81)	-.065 (-1.8)	.012 (.23)	-.029 (-1.7)	.004 (.18)
Percentage of boys	-.111 (-.33)	-.233 (-.49)	0.086 (.47)	-.065 (-.24)	.097 (.75)	-.261 (-1.4)	.033 (.14)	-.299 (-0.86)	.004 (.04)	-.200 (-1.3)
Female head of household	-.073 (-.16)	-.190 (-.32)	.373 (1.8)	-.450 (-1.5)	-.007 (-.05)	-.055 (-.26)	.179 (.66)	-.400 (-1.1)	-.131 (-.94)	.045 (.23)
Father's education	.052 (2.5)*	.002 (.09)	.019 (1.6)	.012 (.73)	.011 (1.4)	.008 (.73)	.048 (3.1)**	.015 (.66)	.002 (.36)	-.001 (-.15)
Always in deficit	-.170 (-.75)	.238 (.77)	.119 (.93)	-.032 (-.18)	-.054 (-.63)	-.009 (-.07)	-.129 (-.77)	.005 (.02)	.034 (.48)	.057 (.56)
Sometimes in deficit	-.237 (-1.2)	.293 (1.1)	-.070 (-.64)	-.008 (-.05)	-.052 (-.67)	.067 (.61)	-.239 (-1.6)	.145 (.69)	-.006 (-.09)	.100 (1.1)
Surplus	-.497 (-1.9)	.618 (1.7)	-.134 (-.88)	.021 (.10)	-.235 (-2.2)	.355 (2.1)	-.582 (-2.8)**	.603 (2.0)*	-.056 (-.73)	.165 (1.4)
Father: access to NGO credit	.745 (1.6)	-.232 (-.35)	.105 (1.5)	-.305 (-1.74)	.080 (.50)	-.081 (-.33)	.864 (2.6)**	-1.01 (-2.1)*	.007 (.05)	.098 (.47)
Mother: access to NGO credit	-.019 (-.09)	.224 (.79)	.140 (1.2)	-.014 (-.09)	-.077 (-.90)	.150 (1.3)	-.185 (-1.1)	.113 (.51)	.034 (.56)	.020 (.22)
Mother: involve in income generating activities	.072 (.38)	-.206 (-.82)	-.050 (-.49)	.099 (.73)	-.043 (-.59)	-.048 (-.49)	-.098 (-.71)	-.173 (-.92)	.041 (.70)	-.047 (-.57)
Member of household sells labour > 100 days/year	.207 (1.2)	-.189 (-.79)	.025 (.25)	-.182 (-1.4)	.046 (.67)	-.166 (-1.8)	.068 (.52)	-.243 (-1.3)	.026 (.49)	.060 (.75)
Number of observations	3061		3324		3324		3324		3324	
Pseudo R2/ Adjusted R2	.343		.426		.564		.619		.363	

For columns (1) and (2), z-statistics are in parentheses. For columns (3) to (10), t-statistics are in parentheses, with heteroskedasticity-robust standard errors. For all columns, * denotes significance at the 5% level while ** denote significance at the 1% level. Control for all other types of schools, other child and family characteristics, stratum effects, and village effects are included for all columns.

Appendix 2:TABLE 8
Coefficients of Girl*Fraction NGO

	No village effects	With village effects
All Bangladesh	.59 (2.8)**	.62 (2.8)**
Rural areas	.85 (3.4)**	.80 (3.1)**
Urban areas	-.03 (-.06)	.11 (.23)
Excluding:		
Rural Dhaka	0.62 (2.6)**	.68 (2.7)**
Rural Chittagong	.52 (2.4)*	.53 (2.3)*
Rural Rajshahi	.54 (2.5)*	.57 (2.4)*
Rural Khulna	.39 (1.6)	.51 (2.0)*
Rural Barisal	.62 (2.8)**	.66 (2.8)**
Rural Sylhet	.52 (2.4)*	.53 (2.3)*
Metropolitan cities	.89 (3.7)**	.85 (3.4)**
Other urban areas	.55 (2.5)*	.58 (2.5)*

Z-statistics are in parentheses, and * denotes significance at the 5% level while ** denotes significance at the 1% level.

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