Parental Education and Schooling Choice: An Empirical Study from Bangladesh

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This paper explores the schooling choice decision of parents in Bangladesh and concludes that the parental level of education, in particular father's education level, negatively influences the likelihood of sending the child to the religious stream of education. The paper suggests that parents' access to information and their education level might be related- allowing them to make informed schooling choice for their children.

I. INTRODUCTION

The evolvement of the schooling system to the point of multiple streams of schooling co-existing is the essence of the "school choice" policy. This policy encourages the establishment of numerous schooling options, where schools can compete in their efforts to cater to parents' demands (Bosetti 2004). According to literature, different schooling options lead to the creation of a "market system" of schools and in the system, the schools compete with the ultimate goal of increasing student intake (Bosetti 2004, Hatcher 1998).

School choice, as an economic concept, is explained specifically by "Rational Choice Theory." This theory suggests that parents - using all the relevant information - can be relied upon to pursue the best interests of their children (Fuller, Elmore and Orfield 1996, Goldthorpe 2010). In many education systems, there are multiple types of schooling that parents can choose to send their children to. Different parents use different criteria to weigh the various schooling options.

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So, the school authorities and education policymakers need to know and understand the reasons behind parents' choice of schooling (Manna 2002).

A key factor of the notion that school choice can accelerate improvement through competitiveness is that parents have a strong demand for the academic performance or reputation of schools (Burgess, Greaves, Vignoles and Wilson 2015). On the other hand, Coldron and Boulton (1991) investigated the criteria that parents consider when selecting schools for their children and found that a child's happiness is often given more importance as a criterion, even compared to the criteria of better academic standards. Thus, perhaps factors other than the usual top-ranked factors (such as "academic standards") could play strong roles in influencing parental choice of schooling. It is important to explore and understand all the possible factors that may influence parents' decision of their children's schooling. Accordingly, this study explores one particular potential influencing factor and tests whether parents' level of education may play strong roles in their choice of sending their children to a particular type of schooling.

In terms of differences in curriculum and medium of language, parents in Bangladesh mainly have three streams of schooling to choose from: Bangla medium, English medium, and Madrasah. In terms of jurisdiction, the schools are broadly classified as government, non-government or NGO schooling (Annual Primary School Census 2014). In terms of the magnitude of emphasis on Islamic education, one of the broader categorisations in types of schooling in Bangladesh is madrasah and non-madrasah schooling. In madrasah schooling, emphasis is given to Islamic and Quranic teachings. There are two types of madrasah schooling: government registered alia madrasah schooling and non-registered qawmi madrasah schooling; each follows different curriculums. With the various types of schooling available in Bangladesh, school choice- with its goal of school improvement- could be the key to school system reformation in Bangladesh. There have been recurring suggestions, over the years, from the intellectual community in Bangladesh about integrating the three streams of schooling- English, Bangla, and Madrasah. This study argues that, on the contrary, different streams of schooling existing together could lead to the improvement of each of the streams of schooling if they were to compete with each other to cater to the demands of parents about what they want from schools for their school-going children.

Thus, in the context of Bangladesh, perhaps school choice in primary schooling could lead to potential competition among schooling streams and could increase school improvement. For school choice to function effectively as a school

improvement mechanism, the following two steps are important: (1) investigating the standard of education in the different streams of primary schooling and finding the differences, similarities in the curriculums with a view to attaining the uniformity of basic education across the different schooling streams; and (2) determining the reasons behind parental choice of particular schooling for their children and finding the factors that influence parents' decisions. This research is formulated around the latter issue of parental school choice. Different parents use different criteria to weigh the various schooling options, and this creates an opportunity for different schooling streams to cater the diverse preferences of the parent population. To accommodate the different demands that parents have for their children's schooling, it is important for school authorities and education policymakers to know and understand the reasons behind parents' choice of schooling. Thus, the reasons parents, as consumers, would base their children's schooling decision on would provide valuable information to school authorities and education policymakers in the process of improving the schooling system.

This paper mainly focuses on the parental choice of madrasah and non-madrasah schooling in Bangladesh. Little research has been conducted on the issue in Bangladesh, and there is especially a scarcity of research exploring the relationship between parents' level of education and school choice. The aim of this study is to contribute to this particular gap in the literature, and find the relationship, if any, between parents' education level and their choice of madrasah schooling. Drawing on theories built on the premise of parental background affecting choice and outcomes, this study uses secondary data in a probit model analysis and argues that parents' level of education influences their school choice.

The research question of this study is: Is there a relationship between parents' level of education and madrasah school choice for their children? In Bangladesh, no research has yet been conducted exploring the differences in returns- in terms of access, opportunities and salaries- of education from madrasah and non-madrasah streams, and so no claims can be made about whether one stream of schooling is better than the other. In the absence of evidence, this study assumes that non-madrasah schooling has higher returns- in terms of access, opportunities and salaries- than madrasah schooling.

Thus, the main hypothesis of this study is that the probability of a child attending madrasah schooling is lower in the case of parents with higher levels of education. The premise behind hypothesising that parents with higher levels of education would make such a schooling choice is explained in the "theoretical

framework" section of this paper. To explore the notions of the theoretical framework, three models besides the main model have been shown, and so there are multiple hypotheses besides the main one. The purpose of these three models and multiple hypotheses is to verify the assumption, portrayed through the theoretical framework, that parents who are more educated are likelier to be able to distinguish between educational institutions based on quality. It is important to verify this because it justifies the rationale behind exploring whether parents' education level affects their school choice.

The contribution of this study is twofold. This research adds weight to the analysis of parental school choice in Bangladesh through the inclusion of the potentially important factor of parents' level of education. Additionally, for researchers in the field, this study contributes to the body of literature on parental school choice by introducing a theoretical framework which suggests that parents' access to information and their education level might be related- allowing them to make informed school choice for their children.

In the following sections, the literature relevant to the analysis is highlighted and the empirical approach to analyzing the relationship between parents' education levels and their choice of schooling for their children is discussed. Then the results of the regression analysis are presented and the findings are discussed. In the final section, the limitations are underlined and the contributions and future scope of research following the study is underscored.

II. LITERATURE REVIEW

Most studies on school choice tend to focus on parents' reasons behind choosing different schools for their children (Teske and Schneider 2001). Koppelman and Bhat (2006) suggest that perhaps parents process all the information that is available to them and then make trade-offs between different alternatives according to their preferences. According to Goldring and Haussman (1999), in choosing their children's schools, parents have to weigh the importance of each factor against the other factors.

To make school choice meaningful and effective for all children regardless of their socio-economic status, Carey (2012) pinpoints two important factors: (1) parents having good information and means to send their children to any school they deem most suitable; and (2) good quality schools being available for parents to choose from. According to Bell (2009), families with lower income levels often lack the access to information and networks needed to know about the schools that offer better quality education. Parents having proper access to information, and

affordability to send their children to any school they find apt, are key factors in the analysis of school choice. Given that, this study suggests that parents' access to information and parents' education levels may be related; parents with higher levels of education could be more knowledgeable about and aware of the available schooling options necessary in making informed school choices.

In the process of parents choosing schooling for their children, parents' education level could play an imperative role. According to Butler, Carr, Toma and Zimmer (2013), family characteristics, such as parents' education level, have important influence on parents' school choice. Some research has incorporated the effect of parents' education level on their decision-making through the factor of household socio-economic status, while other studies have used the social class of the parents' as a factor. For example, Bosetti (2004), in her research, analysed data to profile how parents choose their children's schooling based on socio-economic status, and incorporated both parents' level of education and income in measuring the socio-economic status.

Research suggests that parental choice in schooling varies across family backgrounds, ethnicities, working-class, parents' education, race, socio-economic status, as well as social class (Denessen, Driessena and Sleegers 2005, Echols and Willms 1995, McArthur, Colopy and Schlaline 1995). A study conducted in Finland indicated that parents from higher social class status are known to have more extensive possibilities for choice (Kosunen and Carrasco 2016). Based on responses from around two hundred parents, another study found parents' school choice to differ based on social class, where social class was considered to reflect the parents' highest level of education, work position, and income (Lempinen and Niemi 2017). In this study, parents' level of education and their work position were assumed to be understood as aspects of cultural capital but were also linked to social capital and networking, while income was considered an aspect of economic capital. This study revealed that parents from different social classes consider different factors to be important when choosing schools. According to Ball, Bowe and Gewirtz (1996), school choosing parents can be distinguished into three types according to social class: "privileged/skilled," "semi-skilled," and "disconnected." Their research found that skilled parents may select a school for its high quality of education, high standards of academic achievement, while semi-skilled parents tend to base their choice strongly on the school's reputation, and disconnected parents typically just choose a school that is in close proximity to their home (Ball, Bowe and Gewirtz 1996). Defining the term "skilled parents" as reflecting the capacities of parents to operate on the educational market (which indicates higher

social class), other research showed that highly educated parents rate educational or ideological reasons for school choice higher than low educated parents do (Denessen, Driessen and Sleegers 2005).

III.THEORETICAL FRAMEWORK

The argument that parents' level of education affects their school choice suggests that perhaps parents with higher levels of education are better informed and more aware of what constitutes the best schooling for their children and thus effectively prioritise "quality" of schooling. In the case of several studies, parents' education level affecting their school choice has been explained by the premise of social class theories, which attempt to explain how the dominant social classes have better access to privilege, network, and information (Bernstein 1977, Bourdieu and Passeron 1977). Bourdieu (1986) argues that accumulating economic, social or cultural capital advances a group's ability to secure privilege and status over time. According to social class theories, more education elevates parents' social status and class, and gives them more exposure to networks and quality information. The notion of parents with higher levels of education being more likely to accumulate economic, cultural, and social capital follows from the foundations of Gary Becker's intergenerational transmission of human capital model (Becker and Tomes 1986), which itself is built on premises of the human capital theory. The foundation of these theories inspired research which suggests that parents' with higher levels of education are likelier to be able to afford and provide better opportunities for their children (Chevalier, Harmon, Sullivan and Walker 2013), and that parents' with higher levels or education are more involved in their children's education (Lee and Bowen 2006).

One extension of these theories could be that parents with more education actively seek the information they would require to make informed school choices and that parents with higher levels of education could perhaps distinguish between high quality and low-quality schools. As such, premises of these different theories inform the logic behind the theoretical framework of this study, as portrayed in Figure 1.

Figure 1: **Theoretical Framework Underlying the Hypothesis**
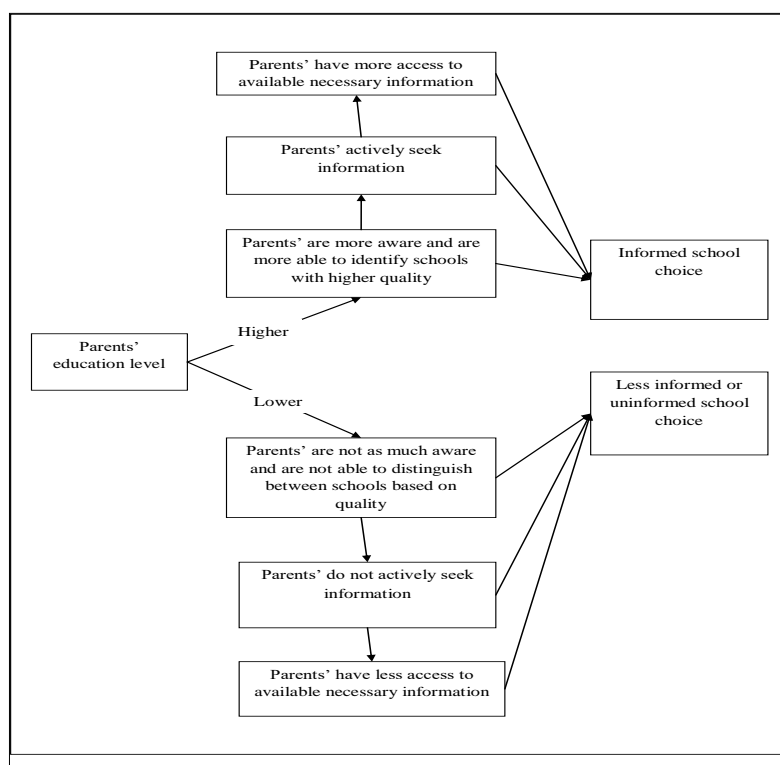
Thus, an emphasis is given on the assumption that having complete or incomplete information could make a difference in parents' school choice (Bell 2009, 2008). According to Smrekar and Goldring (1999), parents who do not have access to relevant and valuable information regarding schooling options are limited in their capacity to make informed choices. Besides information on different schooling options, it is equally important that parents have information about quality education and identify, according to their preferences, which type of schooling cater to their perception of what is the best education for their children. This research attempts to explore this issue through testing how parents with different levels of education choose between madrasah and non-madrasah schooling, based on the assumption that parents with higher levels of education can make a more informed choice and have access to the necessary information and networks. It is important to find out whether parents with higher levels of education tend to choose more of non-madrasah schooling for their children than madrasah schooling, because it could be an indication that parents with more

education believe that non-madrasah schooling perhaps provides better educational opportunities for their children. Moreover, it could be an indication that there are differences in schooling quality between the different streams of schooling.

In the case of the theoretical framework shown and discussed above, there is an assumption that information on school quality is available and that parents with higher levels of education perhaps have better access to this information. However, what if school quality information is absent altogether and parents'- even those with higher levels of education- do not know which school is "better in quality" than another? In such a case, parents' may use an array of criteria, besides school quality indicators (e.g. school's academic reputation), in choosing schooling for their children. Different parents use different standards to weigh the various schooling options (Manna 2002) and perhaps, in the absence of school quality information, parents even rely on their own schooling experience to make schooling decisions. For example, Reay and Ball (1997) suggest that school is often associated with powerful memories from the schooling experience, and these memories influence parents' school choice for their children. According to Woods (1993), the school choice preferences of working-class parents are strongly influenced by parents' (often negative) experience of school rather than by the reputation of the schools. This study does not explore this dimension of parents' school choice but rather assumes that school quality information exists and that there is an asymmetry of information access between parents with different levels of education.

IV. METHODOLOGY

4.1 Data

This study adopts a secondary data analysis, and the dataset being used is the "ComSS dataset." This dataset was collected by CREATE[1] and IED-BRACU[2] in 2007-2009. It covered 6,696 households, with 9,045 children aged 4-15 years (primary school age range), from 18 school catchment areas and the data was disaggregated by gender, income, and type of school (Ahmed 2011). An important point to note about the ComSS survey is that the school catchment areas in the survey were designed based on the availability of non-madrasah government schooling. The advantage of this, in the case of this study, is that parents who

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[1] Consortium for Research on Educational Access, Transitions and Equity.
[2] The Institute of Educational Development-BRAC University.

choose to send their children to madrasah schooling do so while having the option to send them to non-madrasah schooling. Thus, parents' school choice has been properly captured. On the contrary, imagine a location where only madrasah schooling exists. Parents living in that area would not have any option but to send their children to madrasah schooling. This would be problematic for a parental school choice analysis because, as Teelken (1998) suggests, the lack of options in schooling choice might lead to incongruence between parents' reasons for school choice and their factual choice of a school. According to Butler *et al.* (2013), most studies in previous research have not included the full range of school choice options when evaluating school choice of a particular set of parents. However, that is not the case in this study.

4.2 Methodological Approach

In addressing the research question, two of the main variables of interest were identified as parents' level of education and the stream of schooling, whether madrasah or non-madrasah, their children attend. According to the main hypothesis, parents' levels of education would be explanatory variables and childrens' stream of schooling would be the dependent variable. In this case, since the dependent variable is a dummy variable, a probit/logit model could be used to test the correlations between the variables of interest, and so the inferential analysis of this study is conducted through a probit model regression analysis.

There are four main probit regression models in the analyses of this study. The first three models are built around exploring how parents with different levels of education choose between high quality and low-quality educational institutions. The rationale is that parents with higher levels of education are likely to get more access to information networks, and can make more informed school choices because they can identify quality schooling more easily than less-educated parents. Then, the fourth probit model measures the probability of children attending madrasah schooling conditional on their parents' level of education.

Models

The functional form of each of the four models is as follows, and Table I provides an overview of the different dependent variables of each of the models.

$$\Pr(W/Z/V/Y \mid X_1, X_2) = \beta_1 + \beta_2 X_1 + \beta_3 X_2 + \ldots + \beta_9 X_8 + \varepsilon$$

where X_1= Fathers' level of education; X_2=Mothers' level of education; X_3= Income per capita (in taka); X_4= Interaction term between fathers' and mothers' levels of education; X_5= Interaction term between parents' levels of education and

household income; X_6= Gender of child (0=male, 1=female); X_7= Religion of the household (1= Islam, 0=religion other than Islam); and X_8=Distance from child's home to school (in km).

TABLE I

DEPENDENT VARIABLES OF THE MODELS

Model no.	Model	Dependent Variable	Explanation of dependent variable
1	The probit model exploring how parents choose high quality madrasahs over low quality madrasahs conditional on parents' level of education	$Pr\ (W=1,\ 0/\ X_1,\ X_2)$	Pr (W=1| X_1, X_2) means the probability that a child attends high quality madrasah schooling given the parents' level of education.
2	The probit model exploring how parents choose high quality non-madrasahs over low quality non-madrasahs conditional on parents' level of education	$Pr\ (Z=1,\ 0/\ X_1,\ X_2)$	Pr (Z=1| X_1, X_2) means the probability that a child attends high quality non-madrasah schooling, given the parents' level of education.
3	The probit model exploring how parents choose high quality non-madrasahs over high quality madrasahs conditional on parents' level of education	$Pr\ (V=1,\ 0/\ X_1,\ X_2)$	Pr (V =1| X_1, X_2) means the probability that a child attends high quality non-madrasah schooling over high quality madrasah schooling given the parents' level of education.
4	The probit model exploring how parents with different levels of education choose between madrasah and non-madrasahs.	$Pr\ (Y=1,\ 0/\ X_1,\ X_2)$	Pr (Y=1| X_1, X_2) means the probability that a child attends madrasah schooling given the parents' level of education.

The first three models in this analysis depict how parents with different levels of education choose between higher and lower quality institutions. In the case of the first three models, the dependent variables of "stream of schooling" were disaggregated by school quality, where school quality was measured by teachers'

years of education and teachers' years of work experience. It is acknowledged that, besides the selected measures of school quality, there may be many other school quality indicators such as the schools' academic reputation, infrastructure, educational materials and resources provided in the schools, facilities and pedagogy. In the context of this study, using teachers' education and work experience variables as indicators serves the purpose of trying to understand how parents with different education levels might perceive school quality, and how parents' choice between different quality schools might vary across parents with different levels of education.

On the other hand, considering a similar school quality indicator- in terms of teachers' years of education and work experience- as an explanatory variable in model no.4, may be problematic since there would be an absence of other relevant school quality measures in the school quality variable. Due to the unavailability of information to properly construct a school quality variable, any correlation between the school quality explanatory variable and the stream of schooling dependent variable may give incomplete, and perhaps even misleading, results. Thus, a school quality indicating the explanatory variable has not been incorporated in model no.4.

Therefore, the models are not perfect. However, despite the lack of some desirable information that would have ideally contributed to the strength of this analysis, the most important factor is that the key independent and dependent variable for the desired analyses is relevant, valid, and sufficient for this research purpose.

Variables

Dependent variables

In the case of models 1, 2 and 3, the dependent variables- consecutively denoted by W, Z, and V- are dummy variables constructed based on information on teachers' years of education and work experience. In the case of the data of "teachers' years of education" and "teachers' years of work experience," a threshold was fixed according to the median of each distribution, and these thresholds were used in categorising madrasahs and non-madrasahs into high quality and low-quality institutions. For example, in the case of the variable "teachers' years of education," the median of the distribution of the data is 12 years and so the threshold of distinction between high quality and low-quality schools was selected as above or equal to 12 years. This means that, in the case of this

research, teachers with more than or equal to 12 years of education have been classified as representing high quality, while teachers with less than 12 years of education have been classified as representing low quality. Similarly, in the case of the variable "teachers' years of work experience," the median of the distribution is 15.25, and so the threshold of distinction between high quality and low-quality schools was selected as above or equal to 15.25. So, in this research, teachers with more than or equal to 15.25 years of work experience have been classified as representing high quality, while teachers with less than 15.25 years of work experience have been classified as representing low quality. In dividing the madrasahs and non-madrasahs into the high quality and low-quality categories, the dummy variable denoting the type of school that a child attends played a role. This dummy variable is equal to 1 when a child attends madrasah schooling and 0 when a child attends non-madrasah schooling. Connecting this variable with the variables "teachers' years of education" and "teachers' years of work experience" produced the dependent variables of the first three models in this analysis.

An important point to note in the case of the above probit regression models, aiming to explore how parents' with different levels of education choose between high quality and low quality educational institutions, is that the variables of teachers' years of education and teachers' years of work experience are based on data collected in the school survey, and there is no certain indication that parents were aware of such school quality indicating information in the "pre-choice of school" stage. Here, pre-choice of school stage means the stage leading up to parents' choosing schools to send their children to or the choice-making process itself. So, it is ambiguous whether parents were aware of the information in their choice-making process and so the analysis does not necessarily indicate that parents based their school choice on the quality indicating information. It also cannot be claimed with certainty that parents did not base their school choice on this school quality indicating information. So, this quality indicating analysis could be applicable in the case of either pre-choice or post school choice. Despite such uncertainty about the aspect of school quality, there is a possibility of the findings indicating whether choice between high-quality and low-quality schools varies across parents with different levels of education. Although there would be a limitation to properly understanding the dynamics of these findings, there would be indications and evidence either supporting or disapproving the assumptions of the theoretical framework.

In the case of model no.4, the dependent variable is the dummy variable of the stream of schooling- madrasah or non-madrasah- that the child attends. Specifically, the dependent variable is the "child's probability of attending madrasah schooling," where the value of the variable would be 1 if the child attends madrasah schooling and 0 if the child attends non-madrasah schooling.

Independent variables

Among the independent variables, the variables "fathers' education level" and "mothers' education level" are given in the form of grades in the Bangladesh education system, where the lowest level is grade 1 and the highest level is Masters/MA/Kamil level. These variables also include fathers/mothers who were never enrolled in education or dropped out of education without completing a single grade after enrolling in school. The variable "father or mother is educated" indicates that one of the parents has at least attended a formal educational institution.

The other independent variables are: (1) a dummy variable indicating the gender of the child (0 if male, 1 if female), (2) distance from the child's home to school, (3) income per capita, and (4) dummy variable indicating the religion of the child's household (1 if Islam and 0 otherwise). The first three variables are self-explanatory. The fourth variable "religion of the household" fails to depict the households' magnitude of religiosity. In other similar studies, variables such as "number of times father/mother prays in a day," "number of Islamic books in the household" were used to measure religiosity of households (Asadullah, Chakrabarti and Chaudhury 2015). Unfortunately, the ComSS dataset does not have such information, and so, "religion of the household" would be a proxy variable.

Interaction variables

There are two interaction variables in the models of this study. In constructing the interaction terms, the variables "fathers' education level" and "mothers' education level" were each divided into two categories according to level of education: (1) Category "0" includes either or both of fathers'/mothers' who had never enrolled in schooling and had dropped out of schooling without passing a single grade in a school; and (2) Category "1" includes both fathers' and mothers' who had at least attended and passed class one and above.

In addition, the interaction term "father and mother both educated*income" is a variable which takes "0" if both parents of the child did not attend formal

schooling and it takes "income" if both parents of the child attended formal schooling. We have included this variable to see whether the income adds any advantage/disadvantage in school choice in the case of the child of educated parents.

V. RESULTS AND DISCUSSIONS

This section is divided into three subsections. Section 5.1 portrays the summary statistics of the variables used in the models and includes a discussion of the findings from a pairwise correlation analysis. The pairwise correlation analysis is used primarily to justify the choice of the interaction variables. Section 5.2 includes the discussion of the key findings and results of the first three models. Then, in section 5.3, the regression results of the fourth and final model of the data analyses are shown, and the key findings and most significant results are discussed.

5.1 Summary Statistics and Pairwise Correlation Analysis

Table II shows the summary statistics of the variables used in the four models of this study. Out of 7,108 students who have explicitly revealed their stream of schooling, there are 1,095 students who attend madrasah schooling and 6,103 students who attend non-madrasah schooling. In terms of high quality and low-quality institutions, the distribution of students is similar irrespective of the schooling streams: 76 per cent of the students attend low quality institutions, and 24 per cent attend high quality institutions. Additionally, among all the students, the distribution of Muslim, Hindu, and Buddhist households are 91 per cent, 8 per cent, and 1 per cent respectively.

It is evident that the average years of education of a child's father and mothers is 3.2 years and 2.6 years respectively, which is in fact very low. Accordingly, the per capita monthly income is also low. However, teachers' average years of work experience and average years of education are, on average, quite high (16 years and 12 years, respectively). The average distance of the home to school, to the main road and to the main upazilla is, on average, 1 km, 0.94 km and 11.17 km respectively.

TABLE II

SUMMARY STATISTICS AND OPERATIONAL DEFINITIONS

Variable	Definition	N	Mean	SD
Father's level of education	Total number of years that father spent on formal education	9,045	3.21	4.11
Mother's level of education	Total number of years that mother spent on formal education	9,045	2.60	3.32
School type	Dummy (madrasah=1, non-madrasah=0)	7,108[3]	0.15	0.36
Madrasah	Number of madrasah going students	1,095	-	-
Non-madrasah	Number of non-madrasah going students	6,013	-	-
High quality madrasah	Number of students who are attending madrasahs with teachers having median or above years of education (12 years) and experience (15.25)	264 (24%)	-	-
Low quality madrasah	Number of students who are attending madrasahs with teachers having below median years of education (12 years) or experience (15.25)	831 (76%)	-	-
High quality non-madrasah	Number of students who are attending non-madrasahs with teachers having median or above years of education (12 years) and experience (15.25)	1,469 (24%)	-	-
Low quality non-madrasah	Number of students who are attending non-madrasahs with teachers having below median years of education (12 years) or experience (15.25)	4,544 (76%)	-	-
Gender	Dummy (Female=1, male=0)	9,045	0.49	0.5
Teacher's experience	Average years of teaching experience of teachers in a particular school	9,045	16.02	5.56

(Contd. TABLE II)

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[3]Out of ,9045 students, the data specifies that 7,108 students attend either madrasah or non-madrasah schooling. The schooling stream for the remaining students is not specified in the dataset.

Variable	Definition	N	Mean	SD
Teacher's education	Average years of education of teachers in a particular school	9,045	12.24	1.29
Age	Age of the respondent	9,045	9.06	3.13
Income per capita	Income per person of the household	9,031	1001.05	1010.53
Distance from school (km)	Distance between home and the school that the respondent attends	7,170	1.05	1.21
Distance to road	Distance between home and the main road which connects with the Upazilla	9,045	0.94	0.68
Distance to main upazilla	Distance between home and the Upazilla Sadar	9,045	11.17	6.74
Muslim	Number of Muslim students in the sample	8,197 (91%)	-	-
Hindu	Number of Hindu students in the sample	739 (8%)	-	-
Buddhist	Number of Buddhist students in the sample	109 (1%)	-	-

According to the pairwise correlation analysis [Annex Table A.1], there is no significant correlation between fathers' education and household income. However, there is a weak correlation between mothers' education and household income. Since parents' education and income are not strongly significantly correlated, an interaction term between parents' education level and income per capita has been constructed in order to explore whether there is any joint impact of income and parents' education level on school choice. The logic behind the interaction term is to find out the magnitude of the influence of income per capita with educated parents on choosing high quality schooling for children. A significant interaction term with a significant education coefficient implies strong influence in choosing children's schooling. However, a significant interaction term with an insignificant education coefficient implies that the education of the parents alone does not have any association with children's schooling choice.

5.2 Testing the assumption, of the theoretical framework, that parents with higher education levels are likelier to be able to identify higher quality schools and make more informed school choices

The regression results of Models 1, 2, and 3 are reported in Annex Table A.2. Section 5.2 consists of the key findings from each of the regressions and an overall discussion of the findings.

Results of Model 1: The probability of parents choosing high quality madrasahs over low quality madrasahs conditional on parents' level of education

Key findings

1. The relationship between fathers' level of education and the probability that children are sent to high quality madrasahs rather than to low quality madrasahs is significant (at 5% level of significance). However, the nature of the relationship is counter-intuitive and is indicating that more educated fathers are less likely to send their children to high quality madrasahs. Similarly, the relationship between the dependent variable and the variable "father or mother is educated" being significant at 10% significance level indicates that at least one of the parents having attended formal education decreases the probability of the child attending a high-quality madrasah.

2. The effect of both income per capita and the interaction term between parents' education levels and income per capita on the dependent variable is positive. This means that households with more income are likelier to send their children to high quality madrasahs over low quality madrasahs; and households with higher income levels, and with both parents' who are more educated, are also likelier to send their children to high quality madrasahs. These relationships are not statistically significant.

Results of Model 2: The probability of parents choosing high quality non-madrasahs over low quality non-madrasahs conditional on parents' level of education

Key findings

1. The relationship between the dependent variable and the interaction term between parents' levels of education and income per capita is positive and statistically significant at 5% level of significance. This finding indicates that households with more income, and with both parents who have higher levels of education, are likelier to send their children to high quality non-madrasahs over low quality non-madrasahs.

2. The relationship between fathers' level of education and the dependent variable is negative and statistically significant at 5% level of significance. It implies that fathers with higher levels of education are likelier to send their children to low quality non-madrasahs rather than high quality non-madrasahs, and this does not align with the expected notion set out by this research.

3. The relationship between the dependent variable and income per capita is positive and statistically significant at 1% level of significance. So, households with higher levels of income are likelier to send their children to high quality non-madrasah schooling rather than to low quality non-madrasah schooling, and this relationship is highly significant.

4. The relationship between the dependent variable and the variable "father or mother is educated" being significant at 10% significance level indicates that at least one of the parents having attended formal education increases the probability of the child attending a high-quality non-madrasah.

Results of Model 3: The probability of parents choosing high quality madrasahs over high quality non-madrasahs conditional on parents' level of education

Key findings

(1) The relationship between the dependent variable and fathers' level of education is positive and statistically significant at 5% level of significance. It indicates that fathers with higher education levels are likelier to send their children to high quality non-madrasahs rather than to high quality madrasahs.

(2) The relationship between the dependent variable and mothers' level of education is positive and statistically significant at 10% level of significance. It indicates that mothers with higher education levels are likelier to send their children to high quality non-madrasahs rather than to high quality madrasahs.

Discussion

This discussion focuses on the following issues, and the contemplation of the possible reasons behind the key findings: (1) the negative relationship between parents' level of education variables and the probability that their children would be sent to higher quality madrasahs/non-madrasahs in the first two models; (2) the positive relationship between parents' level of education variables, individually and combined, and the probability that their children would be sent to higher quality non-madrasahs in the third model; (3) the statistically significant effect of fathers' education level on the child's probability of attending higher quality institutions in all three models, as opposed to the statistically significant effect of mothers' education level on the child's probability of attending higher quality institutions in only one model; and (4) the statistically significant relationships between the dependent variable and each of the variables "income per capita" and

"the interaction term between parents' levels of education and income per capita" in the second model.

In the case of the findings of the first model, fathers with higher education levels are less likely to send their children to higher quality madrasahs. This is counter-intuitive in case of this study, because the assumption of the theoretical framework that is being tested through these models is that parents with higher levels of education are likelier to be able to distinguish between institutions based on quality and are likelier to make informed school choice by selecting higher quality schools. But the negative nature of these relationships mentioned above indicates otherwise, hence the contradiction with the hypothesised assumptions. There could be several explanations behind this:

a. The measure of school quality has been constructed, in this research, based on teachers' years of education and work experience. Perhaps parents with higher education levels do prioritise school quality more than less educated parents, but maybe they consider quality indicators other than teachers' years of education and years of experience. Perhaps parents observe other quality indicating factors, such as school infrastructure, school facilities, transportation provided by the school, whether the school has electricity or not, size of the school, how many students the school can enroll, the schools' reputation based on the results of students in public and national examinations, etc. in choosing schooling for their children. The negative relationships indicating that more educated parents are less likely to be sending their children to higher quality institutions could simply be because of parents' perception of school quality indication being different from what has been constructed in this study.

b. Perhaps school quality across all streams of schooling and institutions is so low that parents are not able to choose better quality schooling for their children. In a study on madrasah school choice in Bangladesh, Asadullah, Chaudhury and Dar (2007) argued that school quality was too low across all types of institutions for it to be a significant influencing factor in parents choosing their children's schooling.

On the other hand, in the third model, the relationships of the dependent variables with each of fathers' education level, mothers' education level, and the interaction term between fathers' and mothers' levels of education are positive. The statistically significant relationship between fathers' education level and the dependent variable suggests that fathers with higher levels of education are more likely to send their children to high quality non-madrasah schooling rather than to high quality madrasah schooling. Similarly, the statistically significant relationship

between mothers' education level and the dependent variable suggests that mothers with higher levels of education are more likely to send their children to high quality non-madrasah schooling.

In the case of the third issue, it is evident across all the models that the effect of fathers' education level on a child's probability of attending higher quality institutions, and high-quality non-madrasahs over high quality madrasahs in the case of the third model, is statistically significant. On the other hand, the effect of mothers' education level is only statistically significant in the case of the third model, where the dependent variable is the probability of children attending high quality non-madrasahs over high quality madrasahs. Fathers' education level having statistically significant effects across all the models, while mothers' education levels having more statistically insignificant effects, could be entailing that fathers have more decision-making power in children's schooling choice. Thus, this could be a reflection of a patriarchal society and how fathers have more household bargaining power than mothers in children's educational decisions.

The final point of discussion is that the relationship between the dependent variable and each of the variables "income per capita" and "the interaction term between parents' levels of education and income per capita," in the second model, is positive and statistically significant. This implies that children from households with higher income levels and children from households with high income levels and both parents' who have higher levels of education are more likely to send their children to high quality non-madrasah schooling rather than to low quality non-madrasah schooling. This suggests that perhaps there is a factor of affordability connected with being able to send children to higher quality non-madrasah schools. Could it be that it costs more to send children to higher quality non-madrasah schools than to lower quality non-madrasah schools? If that is the case, it would make sense that households with higher income levels are more likely to send their children to higher quality non-madrasah schools.

The above models aimed to test the assumptions of the theoretical framework that parents with higher levels of education are likelier to be more aware and informed so that they can choose high quality schools over low quality schools. Although the findings of the first two models are contradictory to the assumption, the third model provides evidence supporting it by indicating that more educated parents tend to send their children to higher quality non-madrasah schooling over higher quality madrasah schooling. Of course, this is based on the assumption that perhaps non-madrasah schooling is better than madrasah schooling in terms of being in the best interest of children.

5.3 Testing the hypothesis that parents with higher levels of education are less likely to send their children to madrasah schooling

Section 5.3 consists of the key findings from the regressions and an overall discussion of the findings.

TABLE III
**REGRESSION RESULTS AND MARGINAL EFFECTS OF MODEL 4-
ANALYSIS OF CHILD'S PROBABILITY OF ATTENDING MADRASAH
SCHOOLING CONDITIONAL ON PARENTS' EDUCATION LEVEL**

Variables	Overall effect	Marginal effect
	Madrasah=1, non-madrasah=0	Madrasah=1, non-madrasah=0
Father's level of education	-0.00138***	-0.004**
	(0.000512)	(0.001)
Mother's level of education	0.000463	0.008
	(0.000497)	(0.002)
Father and mother both are educated	0.214	0.015
	(0.162)	(0.013)
Father or mother is educated	-0.228***	-0.048***
	(0.0653)	(0.048)
Father and mother both are educated*Income	-0.0752	-0.000
	(0.0486)	(0.000)
Gender dummy (female=1)	-0.0465	-0.009
	(0.0374)	(0.008)
Religion dummy (Muslim=1)	1.473***	0.313***
	(0.210)	(0.039)
Income per capita	-6.58e-07	0.000
	(4.48e-06)	(0.000)
Distance to main road	-0.169***	-0.036***
	(0.0409)	(0.009)
Distance to main Upazilla	-0.00465	-0.001
	(0.00292)	(0.001)
Distance to school	0.0316**	0.007**
	(0.0153)	(0.003)
Constant	-2.387***	
	(0.224)	
R-squared	0.441	0.441
Observations	7,071	7,071

Note: Robust standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Key findings

(1) The relationship between fathers' level of education and the child's probability of attending madrasah schooling is negative and statistically

significant at 5% level of significance. So, fathers with higher levels of education are less likely to send their children to madrasah schooling. The results suggest that fathers with higher levels of education are 0.4% less likely to send their children to madrasah schooling.

(2) The relationship between distance from child's home to school and the child's probability of attending madrasah schooling is positive and statistically significant at 5% level of significance. It implies that the further the distance between a child's home and school, the higher the probability that the child would be sent to madrasah schooling rather than to non-madrasah schooling.

(3) The relationship between the dependent variable and the variable "father or mother is educated" being significant at 1% significance level indicates that at least one of the parents having attended formal education decreases the probability of the child attending madrasah schooling.

Discussion

The statistically significant relationship of the dependent variable with fathers' level of education is the most relevant and important in the case of this study. Among the other statistically significant relationships, the religion of the household (being Islam) affecting children's probability of attending madrasah schooling, and being highly statistically significant, is no surprise. The relationship of the dependent variable with the distance between a child's home and school is also indicated to be highly significant, and this is also not a surprising finding since literature has indicated numerous times that proximity of a child's school from a child's home is an important determinant in school choice. The results indicate that the effect of mothers' level of education on a child's probability of attending madrasah schooling is statistically not significant, whereas the effect of fathers' level of education on a child's probability of attending madrasah schooling is highly statistically significant. It could be a reflection of a patriarchal society where fathers have more decision-making power in children's educational choices. On the other hand, at least one of the parents having attended formal education decreasing the probability of the child attending madrasah schooling is also an interesting finding.

Interestingly, the findings suggest that fathers with higher levels of education are less likely to send their children to madrasah schooling, and this partly confirms the main hypothesis of this study. The hypothesis is partially confirmed because, instead of parents' education levels influencing the lesser probability of children

attending madrasah schooling, only fathers' education level plays a role. Fathers' education level confirming the main hypothesis could be implying, in alignment with the premise of the theoretical framework, that fathers who are more educated tend to send their children to non-madrasah schooling through being more aware of what is in the best interests of their children and thus make informed school choices. It is assuming that non-madrasah schooling is better than madrasah schooling to these parents, either in quality or maybe in the opportunities provided to children. Alternatively, maybe students studying in madrasahs have to struggle more to get equal opportunities after passing out of the school system, and perhaps parents base their decision on this.

VI. CONCLUSION

This paper aimed to test the relationship between parents' level of education and the child's probability of attending madrasah schooling. The results support the hypothesis of the study and reveal that fathers with higher levels of education are less likely to send their children to madrasah schooling, suggesting that there may be a disparity of quality between madrasah and non-madrasah streams of schooling. Especially based on the premise of the theoretical framework, the results could be indicating that the quality of madrasah schooling needs to be improved with a view of attracting parents with higher levels of education to send their children to madrasah schooling as well as to non-madrasah schooling.

In this paper, we suggest that the "information access factor" weighs into the different school choices of parents with different levels of education. For researchers and practitioners, this study indicates that fathers' education level is an important criterion to include in the analysis of parental choice in children's madrasah schooling. This research also provides a starting point for policymakers to contemplate educational policy reforms, since parental choice of schooling is one of the main platforms of government education policy (Ball, Bowe and Gewirtz 1995). Moreover, in terms of female empowerment, the results of mothers' education level mattering less in parental choice of children's schooling, compared to fathers' education level, could be an indication that serious thought is required on how mothers' decision-making power in children's educational choices can be increased to the equal level of fathers' decision-making power in the household.

This paper has some limitations. First, as is the case of many secondary data analyses, there is the scarcity of several variables in the dataset, which would have

made the models stronger and perhaps given more robust results. For example, the number of members in a household or the "sibling effect" on parental school choice has not been incorporated into the models of this study due to the lack of data. This limitation of the unavailability of data has been discussed in detail throughout the methodology section of the paper. Second, this dataset has no information on the parents' streams of schooling, and this is a disadvantage. This information would have added substantial weight to the analyses.

This study provides a basis for further research to be conducted on parental choice of schooling. Firstly, it highlights the need to explore parents' access to information about available schooling options across parents' socio-economic backgrounds and education levels. This study establishes a theoretical framework in this regard and explores the notions of the theoretical framework through the first three models of the study. Further research may be conducted to explore this in detail as the main focus of research. Secondly, in the case of parents with lesser access to information, it would be interesting to explore whether there is perhaps an inter-generational persistence in the stream of schooling i.e. whether parents tend to send their children to the same stream of schooling they attended, thus relying on their own schooling experience as criteria of choosing their children's schooling. Finally, addressing parental school choice with a more qualitative approach may also provide valuable insights. For example, different parents may have different justifications behind choosing a particular school over another: parents' own schooling experiences, parents yearning to establish parts of their identity in their children, maintaining a family tradition, religious devotion, lack of information about other streams of education, etc.

If Bangladesh is to contemplate enforcing a school choice system to create competition among different types of schools, the first step is to understand the reasons why parents send their children to each of the different streams of schooling. Moreover, a more rigorous practice of educational research is needed in Bangladesh. Especially for the market mechanism of schooling to properly work in Bangladesh, there is no alternative to researching the aspects of the different issues thoroughly so that informed policy reforms and implementations can happen.

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ANNEX

Table A.1: Pairwise Correlations Analysis

Variables	Father's Education	Mother's Education	Madrasah dummy	Age	Gender dummy	Teacher's education	Teacher's experience	Income PC	Distance to upazilla (km)	Distance to road (km)	Distance to school (km)
Father's Education	1.000										
Mother's Education	0.617***	1.000									
Madrasah dummy	0.027**	-0.018	1.000								
Age	-0.008	-0.121***	0.188***	1.000							
Gender dummy	-0.004	-0.000	-0.012	0.033***	1.000						
Teacher's education	0.010	0.040***	-0.028**	0.039***	0.004	1.000					
Teacher's experience	-0.078***	-0.035***	0.013	-0.037***	-0.010	-0.442***	1.000				
Income PC	0.299	0.316*	0.007	0.035***	-0.007	0.047***	0.034***	1.000			
Distance to upazilla (km)	0.065***	0.038***	-0.038***	0.001	0.004	-0.387***	-0.219***	-0.022**	1.000		
Distance to road (km)	-0.016	-0.033***	-0.110***	-0.001	-0.004	-0.287***	0.234***	-0.109***	0.236***	1.000	
Distance to school (km)	-0.107***	-0.138***	-0.088***	-0.021**	0.008	-0.361***	-0.006	-0.083***	0.183***	0.415***	1.000

Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A.2: Regression Results of Models 1, 2 and 3

Variables	(1) High quality madrasah=1, Low quality madrasah=0	(2) High quality non-madrasah=1, Low quality non-madrasah=0	(3) High quality non-madrasah=1, High quality madrasah=0
Father's level of education	-0.00409**	-0.00132**	0.00373**
	(0.00164)	(0.000583)	(0.00171)
Mother's level of education	-0.00188	0.000516	0.00267*
	(0.00147)	(0.000562)	(0.00154)
Father and mother both are educated	-0.549	-0.177	0.465
	(0.474)	(0.176)	(0.486)
Father or mother is educated	-0.319*	0.127*	0.000849
	(0.168)	(0.0681)	(0.133)
Father and mother both are educated*Income	0.228	0.131**	-0.156
	(0.147)	(0.0533)	
Gender dummy (female=1)	0.0905	-0.0222	-0.0205
	(0.0999)	(0.0369)	(0.0793)
Religion dummy (Muslim=1)	-0.637	-0.407***	-1.027***
	(0.731)	(0.0746)	(0.322)
Income per capita	1.34e-05	1.60e-05***	-7.55e-06
	(1.20e-05)	(4.39e-06)	(1.04e-05)
Distance to main road	-0.676	0.160***	-0.481***
	(0.423)	(0.0359)	(0.109)
Distance to main Upazilla	-0.192***	-0.0638***	0.154***
	(0.0297)	(0.00266)	(0.0126)
Distance to school	-0.0121	-0.163***	-0.0185
	(0.0455)	(0.0356)	(0.0418)
Constant	-1.400***	-1.397***	0.986***
	(0.119)	(0.0490)	(0.140)
R-squared	0.3203	0.0802	0.1290
Observations	1,090	5,981	1,730

Note: Robust standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$