

## Research Article

# The Academic Achievement of Secondary Students in Bangladesh: Assessing the Role of Socioeconomic Status, School Attributes, and Academic Activities

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This study was aimed at assessing the role of socioeconomic status (SES), school attributes (SA), and academic activities (AA) in the academic achievement of secondary school students in Bangladesh. Data were collected by administering a self-administered questionnaire from 1,043 secondary school students using a multistage cluster random sampling. Hierarchical regression suggested that religion significantly but negatively influenced the academic achievement of secondary students, while SES, teacher-student ratio, performance, and education system significantly predicted the academic achievement, although the latter had a negative impact. Besides, self-regulation and communication also showed a substantial role in determining good academic achievement. Policymakers should pay attention to the SES composition of schools and their quality and mode of education, and certain regulatory activities to achieve quality and all-inclusive education in Bangladesh.

## 1. Introduction

Since the independence in 1971, the successive governments of Bangladesh—both civil and military—together with nongovernment organizations have been providing free textbooks and food, as well as supporting girls through stipends and other financial incentives at primary and secondary levels [1–3]. The authorities have also been constructing new infrastructure, including physical facilities for schools, colleges, and universities across the country, and recruiting skilled and trained teachers [4–6], spending from its revenues and foreign aids [7], for assuring quality and equitable education for all. Despite some skepticism from educationists and development organizations [8, 9], the overall education system in Bangladesh is progressing presumably with an increase in enrolment and completion rate at primary, secondary, and tertiary levels with substantial improvement in gender parity and reduction of spatial academic inequality [2, 3, 10–12].

Academic achievement in Bangladesh has been generally evaluated by grade point average (GPA) at the terminal examinations since 2001. For the last 19 years, Bangladesh has witnessed a dramatic yet progressive change in academic attainment, particularly at the secondary level. In 2001, 0.7 million students participated in the secondary school certificate (SSC) examination—a school terminal examination after ten years of primary and secondary schooling—and only 35.2% successfully completed the examination. The participation in the SSC examination increased almost twofold in 2017, and four out of five students completed their secondary studies [13]. In the Dakhil examination—a Madrasah equivalent to SSC—the participants increased from 0.1 million in 2001 to around 0.3 million in 2017, and the completion rate rose from 48% to 76.2% during the same period [14].

To explain the growing academic achievement in Bangladesh, researchers have been linking different variables as determinants, and a vast majority of these research

connected personal attributes (PA), socioeconomic status (SES), and school attributes (SA) as the critical determinants of academic achievement [15–17]. Only a handful number of researchers investigated the influence of sociocultural and spatial factors on academic success, for example, ethnicity, residence, and locations [6, 16, 18]. There is, however, not a single study in Bangladesh that linked academic activities (AA) with academic achievement. On the contrary, researchers in other parts of world have investigated the influence of academic activities on academic achievement [19, 20]. Therefore, this study was designed to fill in the gap and determine the impact of AA, together with PA, SES, and SA, on the academic achievement of secondary students in Bangladesh.

## 2. Theoretical Framework

Educationists worldwide have admired various theorists for explaining academic achievement from different yet interconnected perspectives. Coleman's [21] social capital theory is one of the most prominent and widely used approaches that explain academic achievement, incorporating three distinct but mutually inclusive capitals: human capital, financial capital, and social capital. For Coleman [21], social "benefits" are subject to interpersonal social interactions and networks (social capital). In contrast, the interactions and networks are subject to financial (monetary) and human capital (educational attainment), or the other way around. Together, they are significantly contributing resources to the intellectual and professional development of the young population. In examining social capital, Coleman [21] further delineated its three fundamental forms: (i) obligations and expectations, (ii) information channels, and (iii) norms and effective sanctions, arguing that these forms are associated with the future educational and occupational success of students.

Individuals generally interact and contribute to the well-being of others—within or outside the family—for mutual obligations and expect that the recipients would reciprocate the favor in future. However, the obligations and expectations are subject to "affluence," "culture," and "closure of social networks." For example, parents generally invest in their children based not only on their SES but also on age, sex, grade/class, location, and so on. On the contrary, the information channels are sources of information within or outside the family that facilitate the social actions and interactions of individuals to satisfy personal academic interests. Parents from high SES backgrounds, for instance, admit their children to better-performing schools. The competitive educational environment and the interaction with high-end teachers would affect the children's learning outcomes. Finally, the norms and effective sanctions are a set of standardized behaviors that reinforce collective interests and facilitate socially approved social actions, including academic behavior. The involvement of students in regular academic activities not only determines their academic excellence but also fosters their progress in social positions through professional development. Based on Coleman's [21] argument, it can be said that social capital, together with

human and financial capital, may generate socially "accepted" educational outcomes—high academic attainment (Figure 1).

## 3. Literature Review

**3.1. Personal Attributes.** One of the most common factors influencing academic achievement is PA of individuals. Among the PA, age and grade/class play critical roles in explaining academic achievement. A study on preschool students in China suggests that older students in higher grades generally exhibit more excellence in literacy, numeracy, and social skills than younger ones [22]. In contrast, Amini and Nivorozhkin [23] and Suhi et al. [16] found that younger students outperformed their older counterparts. Another essential component of PA is sex. Previous studies indicated that boys scored higher than girls in literacy, numeracy, and other social skills [15, 22, 23]. Some studies suggest that being female posed the highest risk of achieving higher grades [24, 25]. On the contrary, Suhi et al. [16] and Sumi et al. [18] found that female students outperformed their male counterparts academically.

The religious or faith-based identity also plays a vital role in understanding academic achievement. Sarchami et al. [26], for example, noted that religious faith positively influenced the academic grades of dental students in Iran. In Bangladesh, studies suggest that non-Muslim students were more likely to admit to school earlier than Muslims. The latter were outperformed in competency tests by their religious minority classmates [6, 15]. Some other studies found no significant relation between religion and academic achievement [16, 18].

The academic achievement of students, to some extent, is influenced by the location of residence. Studies in Bangladesh and elsewhere indicate that urban students outpaced their rural counterparts academically. The better academic achievement of urban students is attributed to the career orientation of the urbanites, including parents and children, together with an abundance of quality schools with sufficient educational facilities [15, 17, 18, 23]. Some studies, on the contrary, found an inverse relationship between urban residence and academic attainment [27].

**3.2. Socioeconomic Status.** SES is one of the most frequently linked issues with the academic achievement of students. It has been evident that SES is a central precursor of students' academic achievement irrespective of age and geographical variations. Studies in both developed and developing countries suggest that students from lower SES performed considerably less well at school than those from the higher socioeconomic strata [6, 17, 23, 28, 29]. Unlike children of poor households, children of affluent families are often admitted early into school and regularly attend classes and after-class lessons [30]. Moreover, parents from higher SES are more proactive regarding the academic achievement of children, and they are more interested in reviewing and contacting the teachers of their children than those from lower SES parents [31]; therefore, students from families

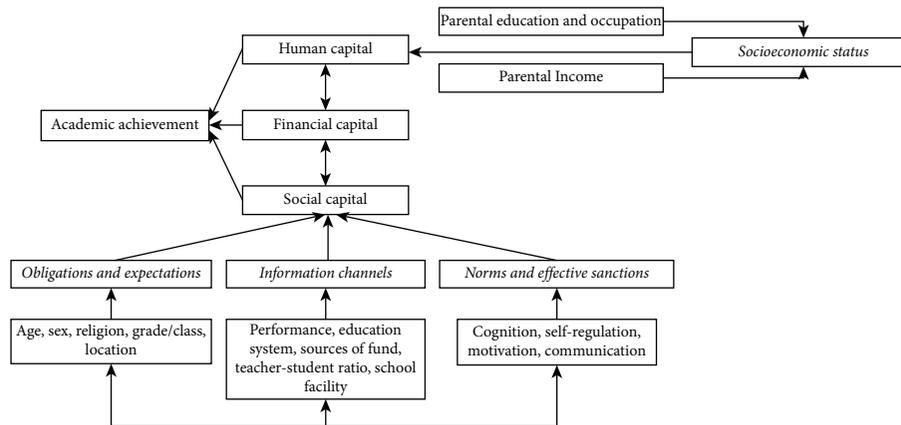


FIGURE 1: Conceptual framework based on Coleman's [21] social capital theory.

with greater SES show higher academic competence [16, 17]. In contrast, parents from lower SES could not pay attention to or care for their children's academic achievement largely because of their day-to-day struggle for managing livelihood [6].

**3.3. School Attributes.** SA generally refers to physical facilities and other nonmaterial and human resources related directly to the instructional process [15, 32]. Among the SA, the education system plays a critical role in explaining the academic achievement of students. For example, Booth et al. [33] observed that female students in a single-sex class at the university performed better than those from coeducational classes. Sullivan et al. [32], in contrast, claimed that the coeducation system has a positive influence on the educational outcome, particularly for academically stronger students, due to the competitive environment. Likewise, it is evident that government/public-run schools have better resources—physical and instrumental facilities—compared to private schools. Thus, students from government schools were more likely to achieve the highest grades than those from nongovernment schools [34, 35]. In addition to the categories of schools, the teacher-student ratio has a relation with academic achievement. Studies in Bangladesh showed that the teacher-student ratio was negatively associated with academic success [15, 17, 18]. School facilities are also essential components for academic success. Studies suggest that school facilities and services are crucial for understanding the variations in academic attainment [36, 37]. These studies concluded that students from schools with a library, laboratory, and multipurpose rooms performed better than the students with no such facilities in their schools.

**3.4. Academic Activities.** AA of students generally has been assessed by the “structural approach” that allows students to prepare for lessons in an organized effort, including cognitive development, self-regulation, motivation, and communication with peers and teachers, for better attainment and assessment [38, 39]. Studies suggest that AA plays a significant role in the academic achievement of students. For

example, Lee and Lee [19], assessing the high achievement of university students in South Korea, concluded that cognition, self-regulation, and motivation substantially determine students' academic achievement. Likewise, Matuga [40] observed greater motivation among high achieving students than average and low achieving students. She, however, could not find significant differences in self-regulation among students. Sahranavard et al. [41], however, found that self-regulation significantly predicted the academic achievement of a university in Iran.

## 4. Materials and Methods

**4.1. Study Setting and Participants.** For this study, the multistage cluster random sampling procedure was followed to cover a representative sample with geographical diversity and socioeconomic heterogeneity. The samples were selected through different stages. At first, the Bagerhat district—geographically the second largest (3,959.11 km<sup>2</sup>), but the least densely populated (373 per km<sup>2</sup>) district under the Khulna division of Bangladesh [41–43]—was divided into nine administrative blocks, Upazila, from which two blocks (Bagerhat Sadar and Kachua) were selected using the lottery method by setting priority on literacy rate. At the second stage, a list of schools considering the performance of their students in previous public examinations from two selected Upazilas was developed, out of which nine schools were randomly selected. At the third and final stage, some specifications have been made to select the samples: (a) the participants must be enrolled in the selected secondary schools; (b) they must be at a secondary level only (from Class VII to Class X) during the data collection period; (c) they must not be a class/grade repeater; and (d) they must have grade point average (GPA), achieved in year final or public examination (junior secondary certificate (JSC)). Based on the criteria, we have listed only 4,200 eligible students (1,906 males and 2,294 females), from a total of 7,095 students from the selected schools to develop the sampling frame. According to Cochran [44], for a 7,000 population, the representative sample size should be 959 with a 95% confidence interval with 3% precision. Finally, we have drawn a sample of 1,043 from the sampling frame using

the random sampling approach, representing 25% of the selected population.

Research instrument: a semistructured self-administered questionnaire (SAQ) in English was developed after a careful and intensive review of the relevant literature. The SAQ was divided into four separate sections: Section A focused on personal attributes (PA) of the participants, including age, sex, religion, and academic achievement; Sections B and C extracted information regarding SES, including parental education, occupation, income, family size, household income and expenditure, and SA, such as types of school based on performance as well as sources of fund, education system, teacher-student ratio, and school facility, respectively; and Section D contained 53 Likert-scale items on AA divided further into four distinct domains, cognition, self-regulation, motivation, and communication. After developing the SAQ, a pretest was carried out in a secondary school at Bagerhat, and data were collected from students of Class VII to Class X. Some necessary modifications were made in the SAQ, specifically in the academic activities and school facilities. Afterward, it was finalized for fieldwork.

*4.2. Fieldwork and Ethical Issues.* This study proceeded with a written confirmation letter from the Academic Advanced Research Committee of the Discipline of a public university and forwarded to the District Education Office (DEO) of Bagerhat to grant the official permission to approach the head/principal of the selected educational institutions to conduct the fieldwork. With the approval of the DEO, the researchers visited the schools, and following verbal permission from the head/principal, the researchers briefed the participants from the eligible classes. The researchers went through the SAQ, particularly the consent form in the SAQ, to make it understandable for the participants. It is important to note that data were collected from the students who consented to participate in the research voluntarily after assuring their anonymity and confidentiality, and two trained enumerators facilitated it to help the participants if they could not understand the question items or other issues in the SAQ. After the brief, the students were reorganized to avoid duplication of the answer, to maintain the integrity and authenticity of the information. Data were collected only in the leisure period without interrupting the regular classes, and it continued for about 35 minutes. A total of 1,404 questionnaires were collected, out of which 361 were dropped later for an inconsistent and repetitive response. It is needless to say that the participants were free to decline at any moment of the survey. Moreover, to keep the anonymity, their names were not included in the SAQ. The fieldwork was carried out from early October to mid-December of 2018.

### 4.3. Measures

*4.3.1. Personal Attributes.* In this study, PA was measured by age (assessed by year), sex (0 = male, 1 = female), religion (0 = Sanatan (Hindu), 1 = Islam), class/grade (assessed by year of schooling), and location of residence (0 = rural, and

1 = urban). The descriptive statistics suggested that averaging around 14 years of age, more than half of the participants were female (53%), and less than one-fifth (17%) were Hindu. With a mean eight and a half years of schooling, about 60% of the participants resided in rural areas of the Bagerhat district.

*4.3.2. Socioeconomic Status.* Researchers have different opinions regarding the compositional elements of SES. Hollingshead [45] advocated four factors, education, occupation, sex, and marital status of parents, while Snyder et al. [46] considered parental education, occupation, family income, and other household items to explain the SES in educational research. In this study, the SES was constructed considering parental education, occupation, and income. Parental education was measured in a year of schooling, categorized into five levels: 0 = no education, 1 = Class I to Class V, 2 = Class VI to Class X, 3 = Class XI to Class XII, and 4 =  $\geq$  Class XIII. For the occupation of father, the participants reported 33 different occupations, and they were categorized into four major groups: 1 = agriculture and informal work, 2 = armed forces, 3 = service and technical workers, and 4 = professionals. For mothers, ten different occupations were reported, out of which 91% were housewives. Therefore, maternal occupation was divided into two major types: 0 = housewife and 1 = working mothers. The income of parents was measured by Bangladeshi Taka (BDT, where 1 BDT = US \$ 0.012). The average income of fathers was BDT 21,093 (SD = 13,100.5) and it was BDT 1,560 (SD = 5,875.4) for mothers. The income of fathers was divided into three groups: 1 = BDT  $\leq$  20,000, 2 = BDT 20,001–40,000, and 3 =  $\geq$  40,001; 0 = no income, 1 = BDT  $\leq$  20,000, and 2 = BDT 20,001–40,000 for mothers, respectively. Afterward, all these variables were summated to construct SES, and the score ranged from 4 to 17 with an average of 10.3 (SD = 2.9).

*4.3.3. School Attributes.* Different parameters were measured for SA. For example, schools were categorized into two types based on performance: 0 = B and other categories, and 1 = A category [47]. Based on the education system, schools were divided into 0 = coeducation and 1 = single-sex education. Based on funding, there were two types, 0 = nongovernment/private and 1 = government/public schools. The teacher-student ratio was calculated, and the mean was 38 students per teacher (SD = 12.3). School facilities, including library, computer and science laboratories, potable water, and hygienic toilets, were measured by 11 Thurstone scale question items, with two possible responses—0 = no and 1 = yes. The responses were added to construct the school facility index, and the mean score was 8.1 (SD = 1.7).

*4.3.4. Academic Activities.* Academic activities, containing a total of 53 Likert-scale questions, were divided into four different indices: cognition (12 items) with Cronbach's  $\alpha$  of 0.646, self-regulation (23 items) with Cronbach's  $\alpha$  of 0.840,

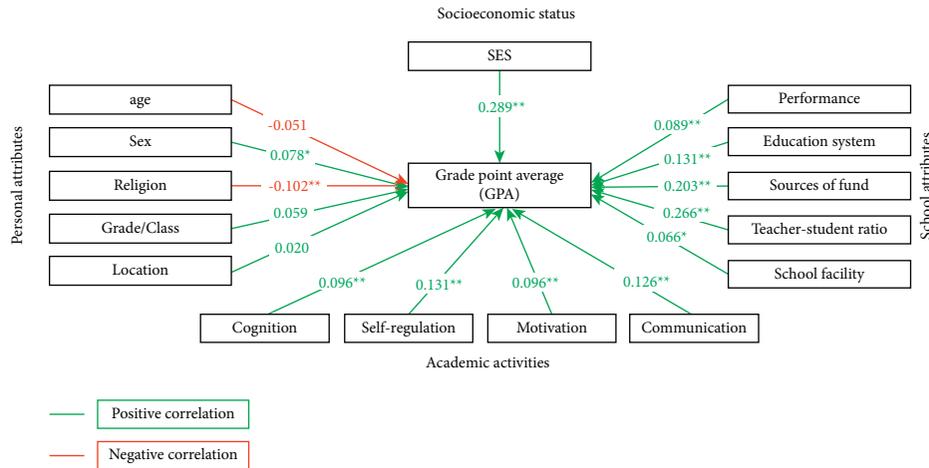


FIGURE 2: Bivariate correlation between academic achievement and independent variables. GPA: grade point average; SES: socioeconomic status. \*\*Correlation is significant at the 0.01 level (2-tailed). \*Correlation is significant at the 0.05 level (2-tailed).

motivation (9 items) with Cronbach's  $\alpha$  of 0.770, and communication (9 items) with Cronbach's  $\alpha$  of 0.665. Each question had five possible responses: 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. For each domain, the scores of different questions were added up to construct the index, and observing the scores, the sum of the total responses was finally used for analyses. The overall reliability of the index was excellent, with Cronbach's  $\alpha$  of 0.906.

**4.3.5. Academic Achievement.** Academic achievement can be assessed in two different ways, for example, formative, which involves informed feedback from teachers to improve the performance of the students, and summative, which is the accumulation of test/examination results at the end of learning or fixed time [48]. In this study, the summative approach was used, and the participants were requested to report their final grades achieved in the previous year's final or public examinations. The average GPA of the participants was 3.6 (SD = 0.9). In Bangladesh, especially at primary and secondary levels, the GPA ranges from the lowest grade point 0.00 (0–32 marks with the letter grade of F) to the highest-grade point 5.00 (80–100 marks with grade point A+).

**4.4. Analytical Framework.** The data were analyzed in three successive stages. At first, the relation between the GPA and each independent variable was analyzed by Pearson's product-moment correlation. Secondly, four sets of independent variables, including PA, SES, SA, and AA, were used for four separate models in stepwise regression, considering their advantages and shortfalls [49, 50], to identify the most relevant variables with a substantial predicting capacity to be used in the hierarchical model. Finally, hierarchical regression was executed to weigh the effects of school characteristics and academic activities on the academic success of secondary students after controlling other predictors at its point of entry.

## 5. Results and Discussion

**5.1. Bivariate Correlation.** The bivariate correlation analysis in Figure 2 provided the direction and magnitude of the relationship between academic success and the independent variables. Among PA, age, education, and location of residence had no significant relationship with academic achievement. Sex ( $r = 0.078$ ,  $p < 0.05$ ) and religion ( $r = -0.102$ ,  $p < 0.01$ ), on the contrary, had a significant but weak correlation with academic success, where the latter was negatively related. SES was positively ( $r = 0.289$ ,  $p < 0.01$ ) associated with the academic achievement of secondary students.

Among the variables of SA, it appeared that students from the A category ( $r = 0.089$ ,  $p < 0.01$ ) and single-sex ( $r = 0.289$ ,  $p < 0.01$ ) schools performed better than their counterparts from low-performing and coeducating schools. Academic achievement also had a statistically positive and significant association with government schools ( $r = 0.203$ ,  $p < 0.01$ ) and teacher-student ratio ( $r = 0.266$ ,  $p < 0.01$ ). If the number of students per teacher was higher, academic achievement was lower, indicating that the number of students per teacher should be delimited to increase academic attainment. Like the teacher-student ratio, the school facility also showed a positive ( $r = 0.066$ ,  $p < 0.05$ ) relation with academic achievement. Such findings indicate that students with more logistic support in schools outperformed their compatriots from low logistic supported schools.

It is also apparent that all four dimensions of academic activity were significantly associated with academic achievement. Self-regulation ( $r = 0.131$ ,  $p < 0.01$ ) and communication ( $r = 0.126$ ,  $p < 0.01$ ) had a better relationship with academic achievement than cognition ( $r = 0.096$ ,  $p < 0.01$ ) and motivation ( $r = 0.096$ ,  $p < 0.01$ ).

**5.2. Stepwise Linear Regression.** A list of 15 independent variables, divided into four major sets, was used for four separate stepwise linear regression models (see Table 1). In the first model, five variables related to PA were considered, out of which two predictors (religion and sex) have

TABLE 1: Stepwise multivariate regression predicting academic achievement considering four separate sets of variables.

Predictors	Standardized $\beta$ coefficients	SE	Level of significance
Personal attributes (model I)			
Religion	-0.100	0.071	$p < 0.01$
Sex	0.075	0.053	$p < 0.05$
	$R^2$		0.016
	$F$		8.454**
Socioeconomic status (model II)			
SES	0.289	0.009	$p < 0.01$
	$R^2$		0.083
	$F$		94.651**
School attributes (model III)			
Teacher-student ratio	0.354	0.003	$p < 0.01$
Performance	0.124	0.066	$p < 0.01$
Education system	-0.149	0.077	$p < 0.01$
	$R^2$		0.086
	$F$		32.439**
Academic activities (model IV)			
Self-regulation	0.089	0.003	$p < 0.05$
Communication	0.077	0.007	$p < 0.05$
	$R^2$		0.021
	$F$		11.363**

SE: standard error. \*\*  $p < 0.01$ .

TABLE 2: Hierarchical multiple regression predicting academic achievement.

Variables	Model 1			Model 2			Model 3			Model 4		
	$\beta$	SE	$p$ value	$\beta$	SE	$p$ value	$\beta$	SE	$p$ value	$\beta$	SE	$p$ value
$\Delta R^2$ (total)	0.016			0.077 (0.093)			0.020 (0.113)			0.032 (0.152)		
$\Delta F$	8.454**			88.520**			6.858**			20.720**		
Step 1: control variables (personal attributes)												
Religion	-0.100	0.071	$p < 0.01$	-0.084	0.069	$p < 0.01$	-0.085	0.068	$p < 0.01$	-0.080	0.067	$p < 0.01$
Sex	0.075	0.053	$p < 0.05$	0.052	0.052	$p < 0.05$	0.019	0.054	$p < 0.05$	0.009	0.054	$p < 0.05$
Step 2: socioeconomic status												
SES				0.279	0.009	$p < 0.01$	0.176	0.011	$p < 0.01$	0.177	0.011	$p < 0.01$
Step 3: school attributes												
Teacher-student ratio							0.213	0.004	$p < 0.01$	0.240	0.003	$p < 0.01$
Performance							0.095	0.065	$p < 0.01$	0.079	0.065	$p < 0.05$
Education system							-0.097	0.080	$p < 0.01$	-0.104	0.079	$p < 0.05$
Step 4: academic activities												
Self-regulation										0.098	0.003	$p < 0.01$
Communication										0.094	0.007	$p < 0.01$

$\beta$ : standardized coefficient; SE: standard error. \*\*  $p < 0.01\%$ .

substantial influence, explaining 1.6% variance in academic achievement ( $F [1, 1041] = 10.923, p < 0.01$ ). In the model, religion ( $\beta = -0.10$ ) was the best predictor. In the second model, only one variable (SES) was used, and it explained an 8.3% variance in academic achievement ( $F [1, 1041] = 94.651, p < 0.01$ ). In the following model, five variables from SA were used, of which the model retained four variables. However, the analysis of the variance of inflations (VIF) indicated that one variable (source of the fund) has violated the limit of VIF advocated by Neter et al. [51]; and it was dropped from the model. The third model showed that teacher-student ratio ( $\beta = 0.35$ ), education system ( $\beta = -0.15$ ), and performance ( $\beta = 0.12$ ) showed a significant association with academic achievement, explaining around

9% variance ( $F [3, 1039] = 32.439, p < 0.01$ ). In the fourth and final model, out of four variables, two were considered in the model—self-regulation ( $\beta = 0.09$ ) and communication ( $\beta = 0.08$ )—and posited a significant positive relation with academic achievement, explaining 2.1% variance ( $F [2, 1040] = 11.363, p < 0.01$ ).

5.3. Hierarchical Multiple Regression. Out of the 15 variables considered for stepwise regression, eight variables were retained for hierarchical multiple regression (see Table 2). Step 1, consisting of control variables, was statistically significant,  $F (2, 1040) = 8.454, p < 0.01, R^2 = 0.016$ , suggesting that this model cumulatively explained 1.6% variance in the

academic achievement of secondary students. Adding SES in Step 2 increased  $R^2$  by 0.077%, with the overall model remaining significant,  $F(3, 1039) = 35.617$ ,  $p < 0.01$ ,  $R^2 = 0.093$  (an increase from 0.016 in Step 1), indicating SES played a crucial role in the academic achievement of students in Bangladesh. The addition of SA in Step 3 showed an increase in  $R^2$  by 2% with the overall model continuing statistically significant  $F(6, 1036) = 22.076$ ,  $p < 0.01$ ,  $R^2 = 0.113$  (an increase from 0.093 in Step 2). In the final Step, the academic activities were added, and the model was yielding an  $R^2$  by 2.7%, and still statistically significant  $F(8, 1034) = 21.129$ ,  $p < 0.01$ ,  $R^2 = 0.141$  (an increase from 0.113 in Step 3), signifying those academic activities have a substantial influence on the academic achievement of secondary students in Bangladesh.

## 6. Discussion

This study was designed to assess the influence of SES, SA, and AA, along with PA, on the academic achievement of secondary school students in Bangladesh. Regarding the role of PA in academic achievement, the findings from this study suggested that only religion was significantly influencing the academic achievement of secondary students. Previous studies showed a mixed impact of religion. For example, Sarchami et al. [26] found that students with strong religious beliefs achieve higher grades in dental school in Iran than their classmates with low or no religious beliefs. Sarchami et al. [26] argued that people with strong religious beliefs can cope with stress and tension because of their integrity in mentality and personality. Horwitz [52], reviewing the relationship between religion and academic achievement, concluded that religious devotion and upbringing could lead to both short- and long-term positive educational outcomes. A study on primary school students in Bangladesh indicated that unlike the Muslim majority parents in Bangladesh, non-Muslim minority parents often enroll their children in schools earlier. Therefore, the students from non-Muslim families exceeded academically over the compatriots from Muslim families [15]. In contrast, Suhi et al. [16] found no significant impact of religion on the academic achievement of secondary students in Bangladesh.

Regarding the influence of SES on academic achievement, it is apparent that students from higher SES families performed better academically than their peers from lower SES families. Previous studies in Bangladesh also found similar results. Nath [15], for example, found that parental education and frequent contact with teachers regarding the academic progress of children positively affected the academic competence of primary students in Bangladesh. Likewise, Suhi et al. [16] observed that parental SES, and their financial ability to support educational expenses boosted the academic achievement of secondary students positively. Studies in countries other than Bangladesh also suggested a positive influence of parental SES on their children's academic achievement. Ataç [29], tracing the regional differences in academic achievement in Turkey, observed that higher parental education and occupation together with possession of resources, such as computers,

educational resources, and other technologies, significantly improved the academic achievement of students particularly in urban areas. It is understood that parents from affluent families with white-collar jobs and stable income offer a better cognitive stimulus, including instruction, reading materials, and financial incentives [53]. Moreover, they also offer a better home environment, facilitate well-trained teachers for after-school classes, and often enroll in schools with high competitiveness to hone their children's cognitive and social skills [23, 31].

Among the SA, this study found that the teacher-student ratio positively influenced the academic achievement of secondary students, signifying that a balance in the ratio of teachers and students positively influenced the academic achievement of the latter. An earlier study in Bangladesh observed that fewer students in a class significantly and positively influence academic achievement [54] because it allows the teachers to pay attention to each student with more care and helps the latter increase their proficiency and competence. More recent studies in Bangladesh show that students in small class sizes performed better than those from large class sizes [17, 18]. Among other factors, it is evident that students from better-performing schools outshined their contemporaries from lower-performing schools. It is imperative that well-reputed schools generally have more educational and human resources with sufficient infrastructural support, and they often house high-performing students that assure more internal competence [23]. Moreover, with a sheer advantage of more skilled teachers, these schools also offer supplementary academic resources in the form of after-school classes [30]. Hence, well-reputed schools repeat their academic feat again and again compared to the low-performing schools. In addition to the teacher-student ratio and high-performing schools, the impact of the education system, that is, single-sex versus coeducation, was also assessed in this study. It was found that students from single-sex schools were trailing academically to those from coeducation schools. The findings contradict the results of Booth et al. [33] as they observed that female students in a single-sex class at university performed better than those from coeducation classes. Sullivan et al. [32], on the contrary, observed that academically stronger students in coeducation performed well both in reading and mathematics, while weaker students performed better in single-sex schools.

Regarding the AA, it is evident that the self-regulatory activities of secondary students significantly and positively affected their academic achievement. Earlier studies showed that self-regulatory activities significantly and positively influenced the academic achievement of students. Sahranavard et al. [41], assessing the relationship between self-regulatory strategies and academic achievement of university students in Iran, found that self-regulation has a significant positive influence on academic achievement. Furthermore, it also formed the foundation for continuation and high achievement at the university level. Matuga [40], on the contrary, found no significant influence of self-regulation on the academic achievement of students, whether high, average, or low performing students. Lee and Lee [19],

addressing the underlying issues of high-performing students in South Korea, found that self-regulation has substantially contributed to the academic feat of students in universities. Additionally, it also appeared that the communication skills of secondary students with peers and teachers significantly boosted their performance in academic achievement. Nota et al. [55], among other issues, traced the impact of communication skills of Italian secondary students in predicting academic performance and subsequent progression and found a positive role in predicting academic achievement.

## 7. Conclusion

This study, aiming at assessing the role of SES, SA, and AA in the academic achievement of secondary students in Bangladesh based on the social capital theory of Coleman [21], found that certain human, financial and social capitals exert more significant influence on academic achievement, including religion, SES, teacher-student ratio, performance, and education system, as well as self-regulation and communication skills. It is, however, imperative that, for an equitable, quality, and all-inclusive education, the government should implement certain policies and strategies to improve students' overall academic achievement. For example, educational institutions should monitor students' academic achievement irrespective of age, sex, religion, grade/class, location, types of school involving students, teachers, parents, and educational administrative officials. Educational institutions also need to monitor the socio-economic profile of the educands and assess its impact on trends and patterns of academic competence periodically to improve the overall performance of the students. Besides, the government should address the requirements of schools, irrespective of the spatial location and form of the education system, and facilitate each institution with sufficient human, financial, material, and infrastructural facilities to ensure the optimum utilization of limited resources, as well as enhancing the academic and social skills of students through a competitive academic environment.

Several issues determine the strengths and limitations of this study in its capacity for generalizability. For example, the randomized sampling approach with globally standardized and validated research tools used for the quantitative analysis of this study could lead to a generalization of the findings in the context of Bangladesh. However, the exclusion of primary and tertiary students and the cross-sectional nature of the current study and recall errors and a tendency to provide socially desirable information by the participants could produce biases in the findings. In addition, the use of SAQ may lead to spurious information and an increase in the likelihood of a nonresponse rate. Moreover, it could not unearth the in-depth information from the participants. Therefore, it is strongly recommended to conduct extensive studies nationwide (both qualitative and quantitative) to grasp and explore the issues critical in understanding academic achievement in more credible approaches at all educational levels, including primary, secondary, and tertiary. Besides, longitudinal studies are

needed to understand the changing role of various factors, including personal characteristics, socioeconomic background, institutional attributes, and academic activities, in academic achievement over time. Besides, to attain the sustainable development goals (SDGs) in education—ensure inclusive and equitable quality education for all—both government and nongovernment organizations in Bangladesh must come forward to ensure uniformity, equality, and all-inclusiveness in education.

## Data Availability

The dataset of this research is available from the corresponding author.

## Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

## Authors' Contributions

FJO and SSS conceived, designed, and collected the data and were involved in drafting the manuscript. AS analyzed the data and was involved in drafting the manuscript. NJ was involved in drafting and revising the manuscript. MTH conceived, designed, supervised, analyzed, and interpreted the data and revised the manuscript. All the authors read and approved the final manuscript.

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