Research article

Quality of government secondary school services in regional Bangladesh

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A B S T R A C T

This research investigated the service quality of government secondary schools (GSS) in Bangladesh. A mixed methods research design combining quantitative and qualitative methods was applied for gathering and analyzing data. Quantitative data was collected from 601 randomly selected clients using a structured interview schedule developed based on the five-dimensional SERVQUAL instrument. Qualitative data was obtained through focus group discussions and interviews of students, teachers, headteachers, guardians, assistant school inspectors, and the deputy director of secondary and higher education working in the selected region. Quantitative data were analyzed using descriptive statistics and bivariate analysis, while qualitative data was transcribed and labeled into emerging themes. The study found that the quality of secondary education in the GSSs of the study area failed to meet the demand of the clients in terms of all the quality dimensions of SERVQUAL, where t-values revealed a significant gap between expectation and perception in Tangibles, Responsiveness, Reliability, Assurance and Empathy dimensions. Data from qualitative methods showed that all the stakeholders agreed with the gap in tangibles and empathy dimension claimed by the respondents in the quantitative survey. However, teachers and guardians showed differential opinions regarding the gaps in responsiveness, reliability, and assurance. It was also found that 40% of the respondents were either neutral or dissatisfied with the education service of GSSs. Logistic regression output shows that among the dimensions of SERVQUAL, tangibles, responsiveness, assurance, and empathy can significantly influence a respondent's overall satisfaction with GSS services. One-way ANOVA results show that schools from at least two districts differ significantly in terms of the mean score of overall satisfaction and the perceived mean score of tangibles, responsiveness, reliability, assurance, and empathy dimensions. The schools lack teaching, learning and recreational facilities such as laboratory, library, common room, and sports. The students did not receive individual need-based care for academic performance improvement and did not participate in lesson planning, preferring teaching methods and deciding assessment strategies. The teachers were not sufficiently skilled in delivering intelligible lectures and didn't give time to students outside of formal classes. A sizeable gap in the SERVQUAL dimensions indicates that a comprehensive all-out effort is necessary to improve the service quality of GSSs. Consequently, improving teaching learning facilities, student participation in the lesson plan and deciding on teaching methods, teachers' training in pedagogy, and school-specific quality improvement measures are imperative.

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1. Introduction

All the aspects of development are directly or indirectly linked to quality education. Many economists believe education is the key to economic development [1]. Ozturk [2] described education as the fundamental development factor, and no country can achieve sustainable economic progress without substantial investment in human development. Nonetheless, education and health are important determinants of social development [3] – a process that contributed to social structure transformation by increasing society's capacity to achieve its inspirations [4]. Hence, the sustainability of the progress so far achieved and planned to be achieved by a country will certainly become impossible if the country lacks quality education at any educational level.

In Bangladesh, the education system is divided into three major tiers: primary, secondary, and higher education. Primary education is a 5-year tier, while secondary education is a 7-year tier divided into three sub-tiers. Three years of junior secondary, 2 years of secondary, and 2 years of higher secondary. Among these sub-tiers, junior secondary and secondary levels are taught in schools for the age groups 11–13 and 14–15, while the higher secondary level is taught in colleges for the age group 16–17 [5]. Among these schools, there are two major types such as government secondary schools (GSS) and non-government secondary schools [6]. As to the statistics of BANBEIS (Bangladesh Bureau of Educational Information and Statistics), 2020 among the total secondary schools, 6.59% are government, which accommodates only 3.12% of the total secondary level students. Although a major proportion of secondary level students seek their education in non-government schools, public schools deserve special attention as these schools enroll students on a competitive basis, and generally, most of the good students study in public schools. Moreover, the GSSs are almost fully occupied, run two shifts, and cover nearly double the number of students compared to non-government schools, which are predominantly single shifts [7].

Secondary education is one of the most vital sectors of education in Bangladesh as well-functioning and quality secondary education can play a vital role in supplying quality students for the subsequent educational ladders [8]. In addition, the dropout and failure rate in general secondary schools remained high [9] and most often the working-class people have education up to the secondary level [8]. However, despite its huge importance, the quality of secondary education lags far behind our expectations. The quality and curriculum, lack of teacher's skills, and memorization-based assessment system failed to enhance transformative learning, which leads to a deep change in the thoughts, feelings, perspective, convictions, and behaviors of a person [10–12]. Therefore, students can't solve task-oriented problems (instrumental learning) and can't communicate their needs, emotions, and desires (communicative learning), which is a major objective of the education policy of Bangladesh [11].

Recognizing the significance, Bangladesh made some efforts in the last decade to improve the quality of secondary education, which included expanding school provision, eliminating gender disparities, and amplification of provision through innovative schemes [13,14]. However, these initiatives are often criticized for focusing only on tangible aspects of service and are linked to political patronage, which suggests that it is more convenient to augment coverage by building more schools or hiring more teachers rather than focusing on existing inefficiencies. In reality, quality in education is a multiple concept that includes the quality of students, faculty, support staff, infrastructure, teaching-learning activities, etc. [15]. Therefore, quality improvement efforts should focus on both tangible and intangible aspects of clients' service requirements.

To address the principal research question of what is the present quality of secondary school services in government secondary schools in a selected region of Bangladesh based on various tangible and intangible aspects of service, this research adopted the SERVQUAL model proposed by Parasuraman et al. [16] despite the presence of several key instruments available for measuring service quality. AsSERVQUAL gap analysis approach is logical, straightforward, and simple to use, which is regarded as a suitable tool for measuring service quality in secondary education [17]. Furthermore, SERVQUAL can diagnose the strengths and weaknesses of service quality, and it is widely considered the most comprehensive tool for this assessment [18]. However, despite its widespread use, SERVQUAL has been subjected to a number of theoretical and operational criticisms. For example, two administrations of the same instrument always cause repetitiveness and confusion, resulting in poor data quality [18]. Therefore, to overcome the criticisms, this research also includes qualitative evaluation of gaps from the perspectives of diversified stakeholders. Furthermore, this study revealed how perceived service quality influences students' overall satisfaction with GSS services and whether perceived service quality differs among schools in regional Bangladesh. It is assumed that Bangladesh is a small country and different regions do not differ significantly in service quality in GSS education. However, addressing these gaps is thought to help school administrations, policymakers, donors, and the government in improving the quality of education services provided by GSSs in Bangladesh.

1.1. Conceptual framework

The SERVQUAL model evaluates service quality by considering perception and expectation gaps based on five dimensions. The SERVQUAL instrument is composed of 22 items grouped into five dimensions such as tangibles, reliability, responsiveness, assurance, and empathy. Here, Tangible encompasses the appearance of physical facilities, equipment, personnel, and communication materials; Responsiveness is the willingness to help clients and provide prompt service; Reliability represents the ability to perform the promised service dependably and accurately; Assurance means the knowledge and courtesy of staffs and their ability to convey trust and confidence, and Empathy epitomizes caring and individualized attention to the clients. The SERVQUAL model conceives that customer satisfaction evolves through the discrepancy between expectations and perceptions of service and is the outcome of the service quality evaluation [192021]. According to this theory: if a service surpasses expectations, 'positive disconfirmation' results. If expectations fall short, 'negative disconfirmation' occurs, and if expectations are met, 'confirmation occurs' [22]. Conceiving a similar spirit, a conceptual framework for the study is presented in Fig. 1.

1.2. Literature review

Since its inception, SERVQUAL has been widely used to assess the quality of higher education in different country settings. For instance, SERVQUAL has been used successfully to assess higher education quality in Bosnia-Herzegovina [23], Serbia [24], Saudi Arabia [25], Thailand [26], Malaysia [27], Morocco [28] and many other countries. However, secondary level education, particularly quality aspects, is a significantly less researched area [17,29]. In analyzing the service quality of reputed private secondary schools in Sri Lanka, Jayawardena [30] applied SERVQUAL dimensions to a sample of 400 students and found low perception in empathy and tangible dimensions and moderate to high perception in reliability, responsiveness and assurance dimensions. In another study focusing on service quality in public secondary schools in Punjab considered 100 students from two schools and suggested minor considerations in reliability and assurance aspects and major considerations in tangibles, empathy, and responsiveness dimensions. Thahir et al. [31] in their study in Indonesia, applied SERVQUAL to assess private school services in Gowa Regency and found that generally, school services perceived by the students were good. However, for further development of school services, the same research suggests improving science and computed laboratories, teacher competencies and abilities, and the learning atmosphere. Another study in India used SERVQUAL with little modification and found significant gaps in tangibles, reliability, responsiveness, empathy, and assurance along with the use of ICT for school administration and management [32]. In searching for a measurement model for secondary education quality in Mauritius, Ramseook-Munhurrun et al. [17] proposed a multidimensional construct composed of five dimensions: school facilities, reliability, responsiveness, empathy, and assurance discipline. Similarly, Sweis et al. [33] developed a model for assessing the service quality of secondary schools in Jordan based on the expectation and perception gap proposed in SERVQUAL.

2. Methodology

2.1. Research area, approach, and sampling

This study was carried out in a particular division in Bangladesh's Southern region (Fig. 2). Six government secondary schools located in three selected districts that have been government for at least five years were the source of the data collection. In the case of government secondary-level education status in the study area, data in Table 1, shows that the selected districts have a total of 15,640 students studying in GSSs, where boys outnumber the girls by a conspicuously large margin. District A has the highest teacher-student ratio (TSR) followed by district B and C, and District B has a remarkably lower number of teachers per institution, which is only 12. The highest number of students per institution (SPI) is reported in District A schools, followed by District C and District B.

This research utilized an exploratory mixed methods approach based on cross-sectional data. This approach was more appropriate given that this research aimed to explore and explain the quality of GSSs' services [34]. Additionally, as quality assurance research in educational institutions encompasses multiple initiatives and interactions, mixed methods research is frequently recommended for its capacity to clarify and probe a complicated phenomenon [34,35,36]. Furthermore, mixed method design may assist researchers in increasing the robustness of data collection and the study findings [36]. Although longitudinal data could have portrayed the evaluation of service quality based on time period, this study used cross-sectional data as Bangladesh does not have any regular quality assessment system in GSSs. For qualitative data collection, this study considered both guardians and students assuming that lower-grade students (grades 6–7) are too young to perform an objective assessment of the service gap. Hence, after a random selection of the lower-grade students, their guardians who frequently visit school were considered as respondents. This research is completely aware that the guardians and students may have different mental functioning, therefore having differential perceptions. However, independent sample t-test results in appendix 1 show that, except for the tangible dimension and overall satisfaction, students and guardians didn't differ significantly in terms of the perceived score for other dimensions of SERVQUAL. In the selected schools, a total of 6443 students study at the secondary level, which constitutes the population of the study. At a 95% confidence interval and a 4% margin of error, the required sample size was 550. As a result, this study used stratified random sampling to select 601 students. The stratified random sampling technique allows the researchers to include a heterogeneous population [37]. School shifts, grades and sections were used to create the strata. For each section, the student list was collected and the number of students was chosen proportionately based on a list of random numbers. Among the sample, 35% were guardians and 65% were students. The sampling frame
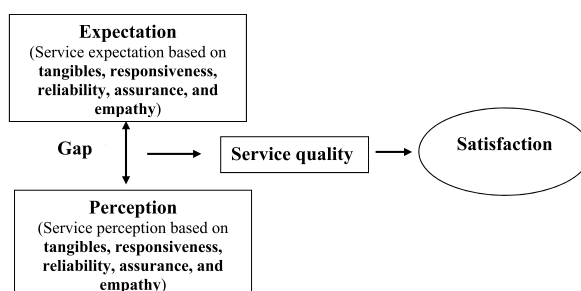

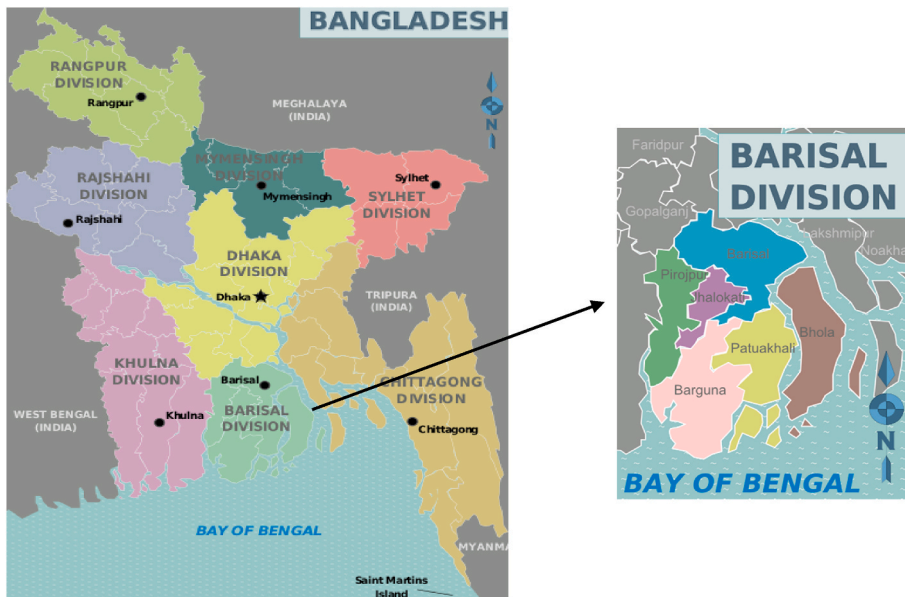**Fig. 1.** Conceptual framework of the study.

Fig. 2. The maps show the study area. *Source:* https://commons.wikimedia.org/wiki/File:Bangladesh_regions_map.svg and https://en.wikipedia. org/wiki/Barisal_Division.

Table 1
Public secondary level institutions, teachers, students, and indicators in the study area.

District*	No. of institutions		No. of teachers		No. of students		Indicators		
	Boys	Girls	Male	Female	Boys	Girls	TSR	SPI	TPI
A	3	1	43	13	2099	2159	76	1065	14
B	7	3	96	24	4685	2997	64	768	12
C	2	2	74	29	1549	2151	36	925	26

Note: *District names are not mentioned to ensure the professional safety of the employees; TSR-Teacher Student Ratio, SPI- Students Per Institution, TPI-Teacher Per Institution.
Source: BANBAES [7].

of the study is diagrammatically demonstrated in Fig. 3. It is important to note that qualitative data collection methods adopt a purposive sampling technique.

2.2. Research instruments

This research was carried out by using structured interview schedules, key informant interviews, and focus group discussions. All the data collection tools were first developed in the Bengali language to enable the participants to use richer language sources to answer the questions. Later on, the data was converted into English.

2.2.1. Structured interview schedule

A structured interview schedule was developed based on the SERVQUAL model suggested by Parasuraman et al. [16]. A five-point (Strongly Agree = 5; Agree = 4; No opinion = 3; Disagree = 2; Strongly Disagree = 1) Likert scale was used to measure perceived and expected service based on 22 statements related to five dimensions of SERVQUAL. Apart from using the seven-point Likert scale suggested by the original SERVQUAL model, this study adopted a five-point Likert scale to avoid respondents' tendency to use the
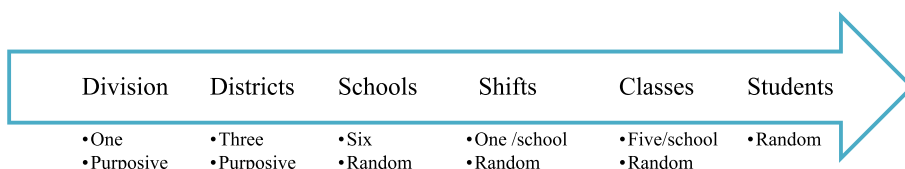

Fig. 3. Sampling frame of the study.

extreme ends of the scale [38] and reduce the 'frustration level' of the respondents, to enhance the response rate and quality [39]. However, for this study, **Tangibles** refer to the appearance of a school's physical facilities, such as its playground, lab, teaching aids, badges, books, and so on.; **Responsiveness** represents the willingness of the school staff to help students and provide prompt service; **Reliability** denotes the ability of the school staffs to perform the promised service dependably and accurately; **Assurance** signifies knowledge and courtesy of the school staff and their ability to convey trust and confidence, and **Empathy** indicates caring and individualized attention to the students. It is worth noting that rather than using the expectation and perception scale side by side, this study used perception first and expectation second, as suggested by Sweis et al. [33]; recognizing that this sequence is crucial to allowing respondents to evaluate a service without consciously assessing expectations first [40]. However, the arithmetic means value of perceived and expected service for each SERVQUAL dimension was calculated to reveal the service gap. The difference in mean values indicates a service gap.

Service quality (SQ) = Client perception (P) – Client expectations (E)

According to the SERVQUAL model, service quality is the function of perception and expectations and can be expressed as the following equation:

$$SQ = \sum_{j_1}^{k} \left(P_{ij} - E_{ij} \right)$$

where,

SQ_i = Overall service quality;
k = Number of service attributes/items;
P_{ij}=Performance perception of stimulus *i* for attribute *j*;
E_{ij} = Service quality expectation for attribute *j* that is the relevant norm for stimulus *i* [41].

Overall satisfaction with the service quality of selected GSSs was assessed using a single item 7-point bipolar scale (1 = very dissatisfied …. 4 = neither dissatisfied nor satisfied ….7 = very satisfied). To measure the effects of SERVQUAL dimensions, the overall satisfaction variable was converted to a dichotomous variable, with 0 = not satisfied (very dissatisfied, dissatisfied, slightly dissatisfied, and neither dissatisfied nor satisfied) and 1 = satisfied (slightly satisfied, satisfied, and very satisfied).

2.2.2. Focus group discussion

This study conducted ten focus groups, six with teachers from six different schools, two with guardians, and the remaining two with students. Focus group discussion (FGD) is an excellent method of bringing people with similar backgrounds together to discuss a specific topic of interest [42]. In the case of FGDs with the teachers, an average of nine teachers from both shifts of a school and various subjects were present. Except for one FGD, both male and female teachers were present in each FGD following the schools' male and female teachers' ratio. The average number of guardians participating in the FGDs was eight, and their children are currently enrolled in various grades (grades 6–10) in GSSs. Similar to the FGDs with the teachers, male and female guardians were equally present. FGD-1 with the guardians was conducted in district B and FGD-2 was held in district C. In the case of FGD-1 with the students, both male and female students were present from the selected schools, where the number of boys was five and the number of girls was two. For FGD-2 with the students, all six participants were boys from grades 9 and 10. Both of the FGDs with the students were conducted in district A. All the students who participated in FGDs were from grades 9 and 10, as they are more cognitively developed and have been in school for a longer period than students in lower grades. During the FGDs, the main questions were about their agreement, disagreement, and experience with the major gaps identified in the structured interviews based on SERVQUAL dimensions. Teachers and guardians were asked to justify the students' overall satisfaction with GSS services, while students were asked to explain the reasons for their dissatisfaction with school services. Each focus group lasted about an hour on average, and probe questions were used to introduce participants to the topic of discussion and make them feel more comfortable sharing their thoughts.

2.2.3. Key informant interview

In this study, eight KIIs were conducted with the head teachers of six schools, one assistant school inspector, and one additional director in charge of overall supervision of all GSSs in the study area. It should be noted that these participants play an important role in ensuring education services in GSSs. For example, headteachers supervise and monitor teachers' class performance and other official services within the schools; school inspectors visit schools if there are problems in regular service delivery, and the additional director supervises headteachers and oversees secondary school education in the study area. The KII entails qualitative interviews with community members who are aware of what is going on in the community [43] Participants in the KII were primarily asked about their thoughts on the gaps revealed using SEVQUAL and their observations of service quality as supervisors. They also asked about their opinion regarding students' evaluation of satisfaction with GSS services. All the FGDs and KIIs were conducted by the researcher with the help of research assistants. Probing techniques were used to encourage information to include detail in their responses without leading their response.

2.2.4. Validity, reliability, and triangulation

The validity of the structured interview schedule was ensured by developing the contents based on previous research [17,29,44] attempting to assess the service quality of public and private schools in diverse country contexts. Furthermore, the structured interview schedule was piloted on 30 similar respondents to validate and assess its reliability. The Cronbach α value was used to assess the reliability of the structured interview schedule. Lee Cronbach coined the term Cronbach alpha, a measure of scale reliability, in 1951. It provides the internal consistency of a test or scale and can range from 0 to 1 [45]. Internal consistency indicates how closely related a set of items is as a group. The alpha values presented in Table 2 ranged from 0.70 to 0.80, which is acceptable as the values are more than the lowest value of 0.70 suggested by Nunnally [46]. The common method bias (CMB) of the instrument was checked using Harman's single factor score. The total variance of a single factor was found 43.44%, which is less than the recommended threshold of 50% [47].

In qualitative research, validity refers to the 'suitability' of the tools, process, and data [66]. The qualitative tools used in this study can provide an in-depth understanding of a complex issue, such as educational quality [43,48,49]. To ensure process validity, the researcher himself moderated all the discussions and interviews, taking into account diverse respondents. Furthermore, a rapporteur recorded all interviews and discussions electronically and noted them, reducing the possibility of missing important information. The reliability of the qualitative data was ensured through accuracy in terms of form and context, with constant comparison, as suggested by George and Apter [50]. Triangulation was achieved by collecting data from a broad range of sources possible within the constraints of the research time frame, which included different schools and a variety of year groups within the schools, as well as a variety and a wide range of data collection techniques.

2.3. Data analysis

This study used a mixed method design, collecting quantitative and qualitative data to assess the service gap. At first, both text and numerical data were analyzed separately. The scale-based items from the guardian and student's structured interviews were analyzed using the statistical package software SPSS V.23. To explain the characteristics of the respondents, this study applied descriptive statistics, such as percentages, and frequency. Descriptive statistics is a vital first step in conducting research and is used to summarize data in an organized manner [51]. The significance of the difference between perceived and expected service was determined using a paired sample *t*-test. The t-statistic is applied to test the hypothesis for the difference between the two population means [37]. The effect of SERVQUAL dimensions on the overall satisfaction of the students with GSS service was ascertained using logit analysis. Logistic regression is a method of data analysis that can model data when the output variable is binary, nominal or ordinal [52]. The service quality across schools was evaluated using one-way analysis of variance (ANOVA). ANOVA is a statistical technique used for the simultaneous comparison of several population means [53]. However, -data from FGDs and KIIs were analyzed by following the steps of Creswell [54]; such as transcribing, organizing, coding, developing themes, making connections and interrelationships, and developing a larger meaning of the data.

2.4. Ethical approval

This research has been approved by the Institutional Ethical Committee (IEC) of Patuakhali Science and Technology University (Ref: PSTU/IEC/2019/7). Before each interview, the respondents were informed of the study's goals and objectives, and their verbal consent was obtained. All electronic recordings were made with the respondents' permission. It is also guaranteed that the information provided will be used solely for research purposes and will not be shared with any person or organization without their prior permission.

3. Result and discussion

3.1. Characteristics of the respondents

Table 3 shows the distribution (by grades/schools) and background characteristics of the structured interview participants, where female respondents outnumbered male respondents by 4%. The respondents were drawn almost equally from each district, with 64.7% of the students selected from grades 8 to 10, and 35.3% from grades 6 to 7. Most students (47%) were among the top 20 students in their class, and slightly more than half of the students (51.1%) attended 80 to 90% of their school classes. More than half of the respondents (58%) did not attend a coaching center for education, while nearly equal proportion (57%) used at least 1–2 private tutors.

Table 2
Reliability of the data collecting instrument based on alpha value.

SERVQUAL dimensions	Number of items	Cronbach α
Tangibles	4	0.700
Responsiveness	5	0.800
Reliability	4	0.777
Assurance	5	0.784
Empathy	4	0.741

Table 3
General characteristics of the respondents (n = 601).

Variable	Description	Measurement	Category	f	%
Districts wise respondents	Number of respondents per district	Nominal	District A	205	34.1
			District B	197	32.8
			District C	199	33.1
Grade (Class)	Grade of the respondent	Nominal	6th	95	15.8
			7th	117	19.5
			8th	127	21.1
			9th	134	22.3
			10th	128	21.3
Gender	Gender of the respondent	Nominal	Female	313	52.1
			Male	287	47.8
Merit position	Merit position in the grade final examination	Ordinal	1–10	133	23.6
			11–20	131	23.2
			21–30	101	17.9
			31–40	81	14.4
			41–50	50	8.9
			>50	53	9.4
			Missing	37	6.2
Class attendance	What percentages of classes attended among the total percentages of the class conducted in the school in last year	Ordinal	>50%	13	2.2
			50–59%	10	1.7
			60–69%	44	7.3
			70–79%	110	18.3
			80–89%	307	51.1
			90–100%	117	19.5
Coaching attended	Total number of coaching attended inside and outside school	Ordinal	None	352	58.6
			1–2	219	36.5
			>2	30	4.8
Private tutor	Number of the tutor(s) attend privately out of school hours	Ordinal	None	83	13.8
			1–2	345	57.4
			3–4	135	22.5
			>4	37	6.2

However, details of the general characteristics of the respondents can be observed in Table 3.

3.2. Service gap in GSS education

Service gaps in GSSs were obtained by subtracting the expectation score from the perception score. The outcome could be either positive or negative. A negative score means a shortfall of expected service, while a positive score means receipt of more service than expected. The survey data presented in Table 4 shows a significantly negative gap in all SERVQUAL dimensions. The selected government secondary schools had the biggest gap in empathy (−1.39) and assurance (−1.37), with the smallest gap in reliability (−1.22) and an almost identical gap in tangibles (−1.27) and responsiveness (−1.26). Supporting our findings, a study of secondary school education quality in Pakistan also showed empathy as one of the weakest areas of service delivery [29]. Similarly, another study in Sri Lanka evaluating the quality of private secondary school services discovered empathy as the area with the lowest perceived service [30]. In contrast to our findings, a study in Indonesia found that students perceive school services to be good across all five service quality dimensions [31].

Item-specific differences in the tangible dimension show that perceived service falls short of expected service in the case of all the items. Data reported in Table 5 shows that the greatest gap (−1.97) was observed in computer and laboratory facilities in schools, followed by the attractiveness of the school environment (−1.47), the availability of modern teaching aids in the classrooms (−1.04), and so on. On the contrary, the lowest service gap was traced in the case of the attractiveness of supplied materials from the school (−0.60). Except for two head teachers, almost all of the teachers agreed with the gaps identified by the respondents in structured

Table 4
Dimension-specific service gap in GSSs (n = 601).

Service dimensions	Perceived(P)		Expected (E)		Gap (P-E)	t	Sig.
	$\bar{x}$	s	$\bar{x}$	s			
Tangibles	3.11	0.758	4.38	0.495	−1.27	36.565	<0.001
Responsiveness	3.12	0.834	4.38	0.534	−1.26	33.075	<0.001
Reliability	3.39	0.838	4.62	1.602	−1.22	16.215	<0.001
Assurance	3.10	0.829	4.47	0.537	−1.37	35.403	<0.001
Empathy	2.82	0.823	4.22	0.632	−1.39	34.347	<0.001

Note: $\bar{x}$ = mean; s = standard deviation; t = *t*-test value.

Table 5

Item-wise service gap in tangible dimension (n = 601).

Sl.	Items	Perceived (P)		Expected(E)		Gap (P-E)	Rank
		$\bar{x}$	s	$\bar{x}$	s		
T1	The school environment, such as the playground, library, common room, etc., is appealing	2.95	0.976	4.42	0.698	−1.47	2
T2	Modern teaching aids, such as multimedia and whiteboards, are available in school classrooms.	3.31	0.946	4.35	0.629	−1.04	3
T3	School-supplied materials, such as books, badges, dairies, notices, etc., from the school are appealing	3.62	0.892	4.22	0.680	−0.6	4
T4	The school laboratory is well-equipped with computers, and other necessary scientific equipment	2.57	1.106	4.54	0.739	−1.97	1

interviews. Two head teachers and the additional director of secondary and higher education expressed slight agreement with the gaps. They stated that all the schools have playgrounds and common rooms for the students. '*All the GSSs have a playground and a common room, but they are under-resourced in terms of sports instruments, indoor gaming, newspapers, magazines, and so on. Multimedia-assisted classrooms are less common in older GSSs than in newer GSSs' (Assistant School Inspector).* '*Our school has only one multimedia-aided classroom, and students eventually have a limited opportunity to attend multimedia-based classes, despite their high preference for multimedia-based class lectures. These limited resources are often underutilized because teachers are frequently hesitant to adopt multimedia-aided classes, which stems from either their reluctance or a lack of skill in using and developing multimedia-based content*' (Students in FGD-1 & 2). The students also stated that most of them had never heard of the term 'common room'. Only newly established schools have common room facilities. Schools do not provide sports equipment during recess. Sports equipment is only provided to the participants if there is an upcoming sporting event in which the school will be represented. All of the head teachers stated that they have libraries. Still, due to a lack of manpower, such as a librarian and other supporting staff, they cannot provide efficient library services to their students. They also added that while all the selected GSSs have laboratory facilities, they are insufficient to support many students in their schools. "*We rarely found the library open; it remained closed nearly every day of the year. Many of us never attended any practical classes in school. Which resulted from either the lack of motivation of the teachers or preservation of the laboratory for showing to the school inspectors or high government officials" (Students in FGD-2)*. However, supporting our findings, an official assessment conducted within Bangladesh also found a poor physical environment and a lack of support facilities in primary schools [55].

The item-by-item gap concerning the responsiveness dimension in Table 6 reflects a shortfall in perceived service compared to expected service across all five items. According to the same table, the greatest gap (−1.36) was found in the scope of the students in discussing educational issues with teachers at any time. However, other areas of the gap in rank order were the eagerness of the school authorities to help students (−1.31), the scope of students in giving opinions or advice to school authorities (−1.27), taking quick action to solve students' problems (−1.21) and consideration of students' opinions in deciding exam schedules, teaching methods, etc. In the case of the gap in RS1, almost all the teachers and headmasters disagreed. In their opinion, "*We are ready to help students with any educational issue at any time. There is no gap in this context; if there is any, it is due to the student's unwillingness to seek educational assistance.*". Although a few guardians agreed that the students have a low proclivity to seek educational assistance from teachers, most guardians agreed with the students. "*A few teachers are open to discussion, but the majority are not*" (Guardians in FGD-2). "*It is difficult to discuss educational issues at any time, especially after school*" (Students in FGD- 1 & 2). In the case of a gap in the eagerness of the school authorities to help students, almost all of the teachers disagreed with the student's opinion. The guardians agree with the teachers saying that the school has eagerness but the students are hesitant to seek help. However, students in FGDs had differing opinions in this case, with one group of the students attesting that the schools were willing to help the students. In contrast, another group endorsed the lack of eagerness of school authorities to help students. Concerning the gaps in RS2 and RS3- "*We have very limited scope for providing an opinion on teaching-learning issues. The school never consult with us about exam schedules and/or teaching methods.*" (Students in FGD- 1 & 2).

The data in Table 7 show that gaps in reliability dimensions are mostly caused by RL1 (−1.49) and RL3 (−1.16). A good number of teachers also agreed that what teachers deliver in class needs to be understood by a significant proportion of students. '*Sixty percent of the students understand the lessons, while forty percent do not*' (A headteacher). '*More than half of the students are confused about the lesson. Many teachers do not finish the lessons in classrooms or teach in such a way so that the students are forced to take private tuition from them*' (Students in FGD- 1 & 2). Besides a few, guardians and school inspectors supported the student's viewpoint. Recognizing the students' lack of understanding of class lessons, the teachers stated, '*We need sufficient training to realize child psychology and the use of participatory teaching methods to improve the efficiency of our teaching and create an interactive learning environment*'. In the case of the gap in schools'

Table 6

Item-wise gap in responsiveness dimension (n = 601).

Sl.	Items	Perceived (P)		Expected (E)		Gap (P-E)	Rank
		$\bar{x}$	s	$\bar{x}$	s		
RS1	Students can discuss educational issues at any time with the teachers	a3.28	1.105	4.64	0.625	−1.36	1
RS2	Students can easily provide opinions or advice to school authorities	2.95	1.061	4.22	0.689	−1.27	3
RS3	School authorities consider students' opinions in deciding exam schedules, teaching methods, etc.	2.9	1.023	4.08	0.923	−1.18	5
RS4	School authorities are eager to help students	3.33	1.029	4.64	0.617	−1.31	2
RS5	School officials and teachers act quickly to resolve student issues	3.14	1.071	4.35	0.574	−1.21	4

Table 7

Item-wise gap in reliability dimension (n = 601).

Sl.	Items	Perceived (P)		Expected (E)		Gap (P-E)	Rank
		$\overline{x}$	s	$\overline{x}$	s		
RL1	Teachers instruct students in such a way that the lessons are easily understood	3.28	1.020	4.77	0.704	−1.49	1
RL2	The school communicates the results of the students' evaluations timely	3.70	1.062	4.30	0.731	−0.60	4
RL3	Schools are eager to solve students' problems	3.17	1.032	4.33	0.699	−1.16	2
RL4	Students receive accurate and timely information from schools	3.45	1.189	4.46	0.566	−1.01	3

eagerness to help students, almost all the teachers, guardians and headteachers agreed that schools are eager to solve students' problems and thus did not support this gap. Recognizing our findings, an official assessment in Bangladesh also reported a shortage of trained teachers and traditional classroom teaching and learning practices in schools [55]. An official in Bangladesh also reported inadequate numbers of trained teachers and traditional classroom teaching and learning practices in schools [55]. Similarly, another study published in 2008 claimed that only one-fifth of teachers were trained in the core curriculum, with 40% of female teachers and nearly 60% of male teachers lacking subject-specific training [56].

Data from Table 8 shows a significant difference between providing students with out-of-school time (−1.96) and practicing an unbiased grading system (−1.54). In the case of giving out-of-school time, teachers and headmasters expressed widely disparate views, with a large proportion expressing complete disagreement and others expressing moderate disagreement to complete agreement. Those who agreed said, "*In GSSs, the teacher-to-student ratio is very high, making it difficult for teachers to give students time outside of school hours.*" Teachers who moderately to completely disagreed with the gap in AS5 argued that while the teachers are willing to give time, students rarely ask for assistance. Contrasting to the teachers' viewpoint, the students stated "*Very few teachers give time to the students outside of class hours.*" A student in FGD-2 shared his experience "*Once, I called one of my teachers on the phone to find out the meaning of a word, and he just advised me not to study hard and dropped my call.*" Although the guardians supported their children, they admitted that the students generally do not seek assistance from their teachers outside of school hours. The school inspectors moderately agreed with the student's assessment, while the deputy director did not express any opinion.

In the case of a neutral grading system, teachers and head teachers in four schools completely disagreed with the students. They said that "*There is no bias in the grading system in our schools, as we use code rather than the student's personal identity and practice cross-shift exam script evaluation, whereby the teachers of one shift evaluate the exam scripts of another shift student and vice versa.*" However, teachers in the other two FGDs in a peripheral district confessed that in the case of several subjects, there was bias in the grading system, which often resulted from teachers' undue marking for the students who usually take tuition from them privately. It is important to note that these schools either do not use anonymous student identification systems or have only recently begun to use them. Interestingly, one of the head teachers of these two schools slightly agreed that there is a gap in his school's grading system. Similarly, a school inspector also slightly agreed that the grading system of the GSSs is biased. The other head teacher stated that there might be bias in the school's grading system. However, almost all of the guardians in both FGDs agreed that the schools' grading system is biased. "*While cross-shift evaluation significantly reduced bias in theoretical mark grading, there is still significant bias in practical mark grading*" (Students in FGD- 1 & 2). The teachers do not explain the entire process of practical work in the classroom; only the students who receive private tuition from them receive complete instructions. The students further think that the theoretical and practical education they are receiving from the school is not sufficient for them. "*If a student relies solely on school education, he or she will fail in most subjects*" (Students in FGD- 1 & 2).

In the case of the items listed under the empathy dimension in Table 9, the major gaps exist in taking individual care of each student (−1.65) and school awareness of the individual needs of each student (−1.64). Elaborating on the gap, the students in FGDs reported that other than taking individual care, weak students receive less care from the teachers, and most of the teachers care about only the good students. '*Teachers are not concerned about the weak students. They only care about the pupils who receive private tuition from them. Most of the teachers lack enthusiasm in assisting pupils. Therefore, the interaction between teachers and students is not amicable*' (Students in both FGDs). Sometimes, the teachers also force the students to take private tuition using practical marks. '*Some practical work techniques are covered in full during the private tutoring sessions but partially explained in the classrooms*' (Participants in FGD 2). However, every teacher, headteacher, guardian, and school inspector expressed complete agreement with the gaps indicated in empathy dimensions. Giving a different explanation of the reasons behind the gap, the teachers and head teachers said, '*We have to provide educational support to many students with a limited number of teachers (the average teacher-student ratio is 1:70), which makes it nearly impossible to take care of*

Table 8

Item-wise gap in assurance dimension (n = 601).

Sl.	Items	Perceived (P)		Expected (E)		Gap (P-E)	Rank
		$\overline{x}$	s	$\overline{x}$	s		
AS1	The school has an unbiased grading system	3.24	1.189	4.78	0.566	−1.54	2
AS2	Teachers have sufficient subject matter knowledge	3.41	0.964	4.40	0.702	−0.99	5
AS3	The school and students have a good relationship	3.32	1.020	4.48	0.694	−1.16	4
AS4	The school equips students with the necessary theoretical and practical knowledge for their future endeavors	2.99	1.039	4.27	0.772	−1.28	3
AS5	Teachers devote time to students outside of class	2.55	1.184	4.51	0.778	−1.96	1

Table 9
Item-wise gap in empathy dimensions (n = 601).

Sl.	Items	Perceived (P)		Expected (E)		Gap (P-E)	Rank
		$\bar{x}$	s	$\bar{x}$	s		
EM1	Teachers behave nicely with the students	3.29	1.072	4.41	0.718	−1.12	4
EM2	Teachers assign students manageable homework	3.12	1.059	4.29	0.866	−1.17	3
EM3	The school takes individual care of each student	2.44	1.068	4.09	0.932	−1.65	1
EM4	The school is aware of the individual needs of each student	2.43	1.056	4.07	0.847	−1.64	2

*the students individually and become aware of individual needs.*'

3.3. Overall satisfaction with GSS education

Data displayed in Fig. 4 shows that 43% of students are either satisfied or very satisfied with the service of GSS education. The remaining 17% were slightly satisfied, while the rest 16% were neither satisfied nor dissatisfied. However, 24% of respondents were dissatisfied to a varying degree. Supporting our findings, a study in Bangladesh focusing on higher education quality also found that 55.3% of students are satisfied with the education services of the institution [57]. Regarding the satisfaction level of the respondents with GSSs education services, teachers in FGDs demonstrated fragmented agreement, where a proportion arguing that the number of satisfied students should be higher than the distribution shown in Fig. 4, while another proportion expressed complete agreement with the students' opinion. A small percentage of teachers, slightly less than the proportions above and claimed that the number of dissatisfied students should be higher than shown in Fig. 4. "*The number of dissatisfied students should be around 70%, as there are significant gaps in the majority of service quality aspects*" (Students in FGD-1&2). In contrast to the students' views, most headteachers believed that "*The number of satisfied students should be higher than the proportion we have in Fig. 4.*" Only two of them, however, agreed with the results shown in Fig. 4. Besides the deputy director, the guardians and management authorities supported the distribution in Fig. 4. "*The percentage of satisfied students should be much higher than what we have in Fig. 4.*" according to the deputy director,

3.4. Effect of SERVQUAL dimensions on overall satisfaction

The effect of SERVQUAL dimensions on overall satisfaction with the school service was measured using logistic regression. The predictor variables in the model were SERVQUAL dimensions, viz., tangibles, responsiveness, reliability, assurance and empathy. A test of the full model versus a model with intercept only was statistically significant χ^2 (5, n = 601) = 221.089, P < 0.0001, and the model was able to correctly classify 61.0% of those who were not satisfied with GSSs' education and 81.9% of those who were satisfied, for an overall success rate of 73.7%.

Table 10 shows the logistic regression coefficient, odds ratio (OR), 95% Confidence Interval (CI), and significance level for each predictor. Employing a 0.05 criterion of statistical significance, tangibles, responsiveness, assurance, and empathy have significant partial effects on the overall satisfaction with GSS educational services. The ORs (column 3 of Table 10) show that when all other variables are held constant, the likelihood of overall satisfaction with GSS education increases as perceived tangibles increase. Table 10 shows that, if all other variables remain constant, a one-point increase in the perceived responsiveness increases the odds of becoming satisfied with GSS education by a multiplicative factor of 2.016. Similarly, a one-point increase in perceived assurance is associated a 1.578-fold increase in the likelihood of becoming satisfied with GSS education. In the case of empathy, a one-point increase in perceived empathy is associated with a 1.666-fold likelihood of being satisfied with GSS education. A study of Indonesian senior high school students discovered that tangibles, responsiveness, assurance, and empathy could all have a significant impact on student satisfaction in using the library [58]. In contrast to our findings, the same study found reliability to be a significant factor influencing student satisfaction.
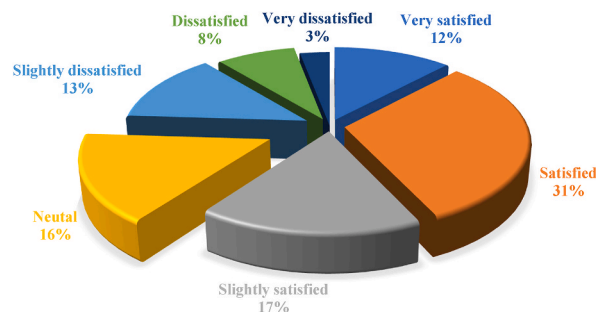
Fig. 4. Client's overall satisfaction with GSS service quality.

Table 10

Effect of SERVQUAL dimensions on the overall satisfaction of the students with GSSs education.

Characteristics	Coeff.	OR	95% CI	p
Perceived Tangibles	0.747	2.110	1.490–2.987	<0.001
Perceived Responsiveness	0.701	2.016	1.341–3.029	<0.01
Perceived Reliability	−0.057	0.945	0.629–1.419	0.785
Perceived Assurance	0.456	1.578	1.031–2.414	0.035
Perceived Empathy	0.510	1.666	1.141–2.431	<0.01
Constant	−6.531	0.001	–	<0.001
Observation (n) = 601				
Cox-Snell R-square (%) = 30.80				
Likelihood ratio static = 221.089***				
Hosmer Lemeshow static (P-value) = (0.886)				
Mean VIF (Max) = 2.63 (3.048)				

3.5. Comparison of perceived service quality based on school location

A one-way ANOVA analysis was performed to compare the perceived service quality of GSSs, taking into account that the schools may differ based on their facilities and spatial variation from the divisional headquarter. Schools from at least two districts differ significantly in terms of the mean perceived score of tangibles (F (2, 598) = [16.75], p = 0.000), responsiveness (F (2, 598) = [5.24], p = 0.006), reliability (F (2, 598) = [8.99], p = 0.000), assurance (F (2, 598) = [3.61], p = 0.028), and empathy (F (2, 598) = [3.61], p= (2, 59). The test of homogeneity of variance results revealed that variance was homogeneous for tangibles (p = 0.294) and responsiveness (p = 0.103), but not for reliability (p = 0.027), assurance (p = 0.001), or empathy (p = 0.000). Thus, for multiple comparisons, Tukey's HSD test was used for tangibles and responsiveness, and Games Howell was used for reliability, assurance, and empathy. Tukey's HSD for multiple comparisons revealed that the mean value of tangibles scores differs significantly between Districts A, B, and C, with District A having the highest mean score.

District A and B differ significantly from District C in terms of mean perceived responsiveness and reliability scores, and no significant difference was observed between District A and District B. The Games-Howell test of multiple comparisons of the mean score of assurance mirrors that only District A and District C represented significant differences. Regarding empathy, District A and District B are significantly different from District C, which has the highest mean score. Fig. 5 compares the mean perceived scores of schools based on the selected districts.

In the case of overall satisfaction, one-way ANOVA results show that schools in at least two districts differ significantly in terms of mean overall satisfaction score (F (2, 598) = [3.90], p = 0.021). The Games-Howell test of multiple comparisons of the mean score of overall satisfaction shows that District A and District B differ significantly (p = 0.010, 95% C.I. = [0.088, 0.794]), while District A and District C do not (p = 0.456, 95% C.I. = [−0.184, 0.566]). Similarly, there was no significant difference in mean overall satisfaction between Districts B and C (p = 0.290, 95% CI = [−0.642, 0.141]). Fig. 6 shows a mean plot of overall satisfaction based on different districts.

3.6. Discussion

The main contribution of this study was to reveal the service quality gaps in tangible and intangible aspects of GSSs in a selected division of Bangladesh. This study adopted a quantitative approach lead mixed methods design guided by the SERVQUAL model to achieve the research objectives. The study has found that the educational services of the selected schools failed to meet the client's expectations across all five dimensions of SERVQUAL. Furthermore, the schools in different district locations differ significantly in terms of service quality and overall satisfaction of the respondents with the school service. The tangible, responsiveness, assurance, and empathy emerged as significant dimensions influencing client satisfaction with the GSS education service. However, despite the
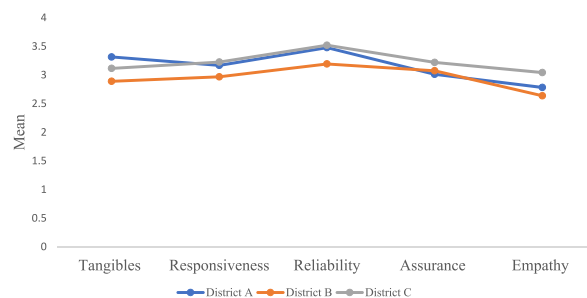

Figure 4. Means plot showing a comparison of districts based on perceived service

Fig. 5. Means plots showing a comparison of districts based on perceived service.
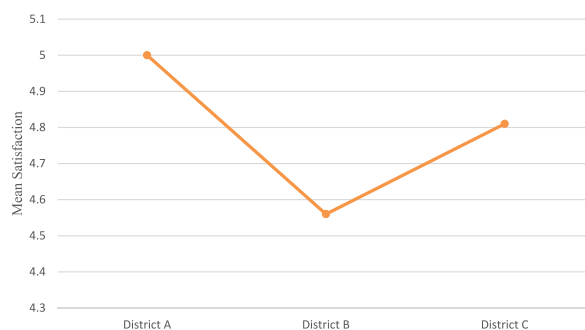
Fig. 6. Means plots showing a comparison of districts based on overall satisfaction.

agreement with the gaps in tangible and empathy dimensions, the respondents showed diverse opinions regarding the gaps in responsiveness, reliability and assurance.

The gaps in the tangible dimension show that schools suffer from essential facilities such as computers, libraries and laboratories and sports. Although laboratory support and well-equipped classroom facilities [59,60], infrastructure design [61] and laboratory facilities [62] can play a decisive role in students' performance. Even the limited facilities available in the schools are remarkably underutilized, resulting from the lack of skills and motivation of most of the teachers. Dearth spending on school education may also be responsible. Bangladesh is a bottom-line country in terms of its GDP spending on education, which equates to accounting for only 1.326% of the GDP in 2019 and is equivalent to almost nearly half of the average spending (2.507%) of the South Asian countries [63, 64]. In addition, a part of the problem also stemmed from inefficient and unplanned centrally controlled expenditure due to rent-seeking by various stakeholders and patronage politics.

Learning is a mental process shaped by the learners' engagement in planning lessons, delivery methods and evaluation procedures for better motivation and interest. However, gaps in the responsiveness dimension confirmed that schools needed to ensure the learners' engagement in planning lessons, choosing teaching methods and scheduling exams. To ensure the future application of learning for solving real-life problems, the pupils should understand what teachers teach in the classroom. The eagerness of the teachers to solve problems is also essential to ensure the learners fail to understand or partially understand class lessons. Moreover, it can motivate students to identify problems and seek solutions, enhancing their critical thinking. In Bangladesh, participatory learning practices are minimal [65]. Therefore, teachers mainly design the way of teaching and assessment.

To combat future challenges, the learners need to gain updated theoretical and practical knowledge. In Bangladesh, the process of updating textbooks is very lengthy. New education systems are often adopted without developing the proper facilities necessary to run the system. For instance, as part of developing learners' ability in critical thinking and enhancing problem-solving abilities, the government introduced creative questions for secondary schools where students have to think for answers. However, most teachers need to be familiar with formulating real-life-oriented questions, therefore collecting questions from other published sources, for example, books, manuals, etc. Teachers also need enhanced subject matter knowledge to prepare students for future endeavors, which is currently lacking. It was also found that most teachers only give time to students during class hours, which might result from the sizable student-teacher ratio or exaggerated interest of the teachers in providing private tuition. For improvement, most school students need individual care based on their specific needs. All the schools showed a remarkable gap in service in this aspect. In the GSSs in the study area, the teachers have to serve a huge number of students in a single class. Therefore, it is difficult for them to provide individual care. Moreover, all the schools have a significant shortage of subject-specific teachers and run two shifts daily, forcing them to reduce the contact hours for both shifts. In Bangladesh, there is little focus on the teacher's improvement in inquiry-based teaching skills and there is political clientelism manifested by recruitment expansion rather than ensuring that employees fully perform their responsibilities.

This study, one of the few that focuses on the service quality of secondary education, measures the discrepancies between students' perceptions and expectations to quantify several tangible and intangible dimensions of secondary school education. The decision-makers may use these gaps to guide the necessary remedial activities to raise the level of service provided by GSSs in the studied area. This study also reveals how different SERVQUAL characteristics affect students' satisfaction with educational services, enabling educational institutions to act more effectively and efficiently in constructing service delivery procedures. This research discovered that different stakeholders have different explanations regarding the cause of the service gap, which may assist us in guiding further research revealing the causes of the service gap in GSSs.

In addition to its strengths, this study has some limitations. Investigation considering regional settings may raise concerns in generalizing the results. Because of the cross-sectional design, this study could not reveal the causality of factors shaping the overall satisfaction with the school services. A significant proportion of the respondents in this study were secondary-level school students. Therefore, in some cases, their opinion could be more emotionally driven than the actual situation. The gaps discussed in this study are confined to the dimensions of the SERVQUAL model. Education service quality is much more than pedagogy and is linked with physical, institutional, and psychological aspects of education [44]. As a result, SERVQUAL may need to be adequate for measuring service quality in education and supplemented with additional dimensions and multi-institutional testing.

3.7. Policy implication

Policy recommendation from this research suggests that there is a significant service gap in GSSs in terms of all five dimensions of SERVQUAL, such as tangibles, responsiveness, reliability, assurance, and empathy. Therefore, to improve service quality as well as the student's overall satisfaction with GSS, education policymakers and school management should adopt strategies to close the service gap in all five dimensions, particularly tangibles, responsiveness, empathy, and assurance. More specifically, policies must identify pathways for developing the school's laboratory, library and computer facilities, participation of the students in lesson planning, choosing teaching strategies and assessment systems, improving teaching skills and demotivating teachers in giving private tuition, focusing attention to student's individual academic needs, enhancing eagerness of both teachers and school authorities in helping students. It is also necessary to establish a yearly service quality assessment for each school to gain longitudinal data to carry out continuous improvement activities based on individual school needs.

4. Conclusions

This study revealed service gaps in government secondary schools in a particular division of Bangladesh based on the SERVQUAL model. The findings explored that the services in selected schools significantly fall short of expectations in all the service quality dimensions. An in-depth analysis of gaps in specific dimensions shows that the present service of GSSs inadequately addresses necessary teaching learning support facilities, student participation in the lesson plans, and appropriate teaching strategies, focusing on individual student's educational needs. The teachers fall short of skill and subject matter knowledge, are more interested in giving private tuition, and do not give students time out of formal class hours. A substantial proportion of the respondents were either neutral or dissatisfied with the services provided by the GSSs. Besides reliability, all the other dimensions of SERVQUAL significantly affect students' satisfaction with school services. Except for the gaps in tangibles and empathy dimensions, all the stakeholders did not express similar agreement with the clients' claims of gaps in responsiveness, reliability, and assurance. This disagreement indeed calls for further in-depth research on the service quality of GSSs, considering diversified stakeholders covering a wide geographical area.

Appendix A

Group Statistics					
	who repond the questionnaire	N	Mean	Std. Deviation	Std. Error Mean
Tangibles_P	student	319	11.9969	3.11771	.17456
	guardian	282	12.9504	2.85803	.17019
Response_P	student	319	15.4044	4.41368	.24712
	guardian	282	15.8369	3.88193	.23117
Reliability_P	student	319	13.5329	3.54193	.19831
	guardian	282	13.6702	3.13647	.18677
Assurance_P	student	319	15.4451	4.24590	.23772
	guardian	282	15.5780	4.03842	.24048
Empathy_P	student	319	11.2445	3.35852	.18804
	guardian	282	11.3369	3.22302	.19193
satisfaction	student	319	4.6771	1.60360	.08978
	guardian	282	4.9326	1.57801	.09397

Independent Samples Test										
		Levene's Test for Equality of Variances		*t*-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Tangibles_P	Equal variances assumed	1.247	.265	−3.890	599	.000	−.95349	.24510	−1.43486	−.47212
	Equal variances not assumed			−3.911	598.202	.000	−.95349	.24380	−1.43229	−.47469
Response_P	Equal variances assumed	4.558	.033	−1.268	599	.205	−.43249	.34106	−1.10231	.23733
	Equal variances not assumed			−1.278	598.986	.202	−.43249	.33839	−1.09706	.23208
Reliability_P	Equal variances assumed	6.720	.010	−.500	599	.617	−.13730	.27446	−.67631	.40172

(*continued*)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
Assurance_P	Equal variances not assumed			−.504	598.998	.614	−.13730	.27242	−.67231	.39771	
	Equal variances assumed	.856	.355	−.392	599	.695	−.13287	.33920	−.79903	.53328	
	Equal variances not assumed			−.393	595.786	.695	−.13287	.33815	−.79698	.53124	
Empathy_P	Equal variances assumed	.069	.793	−.343	599	.732	−.09237	.26938	−.62140	.43667	
	Equal variances not assumed			−.344	594.962	.731	−.09237	.26869	−.62007	.43534	
satisfaction	Equal variances assumed	.921	.338	−1.964	599	.050	−.25551	.13010	−.51101	−.00001	
	Equal variances not assumed			−1.966	592.157	.050	−.25551	.12997	−.51076	−.00026	

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