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RETRACTED: Assessing Service Quality Using SERVQUAL Model: An Empirical Study on Some Private Universities in Bangladesh

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Abstract: The increased competitive academic environment pushes higher institutions to improve their service quality for meeting the market demands. It is thus necessary to assess the factors that satisfy students and make them loyal to the university. This study has focused on assessing service quality, using the SERVQUAL Model to measure students' satisfaction with private universities in Bangladesh. In the study, the primary data collection method through a questionnaire with the 5-point Likert scale was adopted to collect data from 229 students who are currently studying in different private universities in Chattogram, Bangladesh. Structural equation modeling (SEM) has been performed to analyze the data through the AMOS 22 statistical package. The findings report that a comfortable lecture room under the tangible dimension, providing service on time under the reliability dimension, the capacity of administrative staff to solve immediate problems under the responsiveness dimension, proficient lecturers for teaching and research under the assurance dimension, and focus of university management on students under the empathy dimension have a great influence on student satisfaction. The study concludes that managers and authorities of private universities must focus on ensuring better service quality as student satisfaction largely affects the sustainability and recurrence development of the institutions.

Keywords: higher education; loyalty; private university; satisfaction; SERVQUAL

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1. Introduction

Education is one of the fundamental aspects of any society, and the public and private sectors are paying with massive efforts to be leaders in the field. Attracting and gripping students is a challenging task for private universities, especially after the remarkable increase in the number of universities and colleges across Bangladesh in the last decade. Students are the main stakeholder; thus, each university has to find its own way to be different and provide quality services that differentiate it from other competitive universities to improve its student base and be more sustainable. For educational institutions around the world, the provision of quality services in the setting of higher education is of primary importance. In general, the quality of higher education is a vital prerequisite for industrial, economic, and social development.

Quality in universities is represented by a group of characteristics and specifications that are tied to the services provided by them. If quality is entrenched entirely in every aspect of the educational system according to the needs and preferences of participants, students, and instructors, then the faculty will be able to meet their level of satisfac meet

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their level of satisfaction [1]. Service quality has become a requirement for all successful firms and organizations to remain competitive [2]. Many researchers have emphasized the importance of quality improvement initiatives which have resulted in sustainable competitive advantage [3–5]. Given that higher education is a service which students are now expected to fund for themselves at great expense, it has become an increasingly competitive market [6]. It is becoming increasingly difficult for universities to develop and maintain a competitive advantage in their respective target markets as the core of higher educational institutions [7]. In addition, as the levels of domestic and international competition and customer demands have increased, educational institutions have searched for ways to gain a differential advantage [8].

Measuring service quality in higher education is increasingly important for attracting and retaining tuition-based returns. However, the service quality of higher education has been negligible [6]. Previous research has made sound contributions to the field of customer satisfaction. Ever since [9] proposed the connection between service quality and customer satisfaction, numerous studies have established that higher levels of service quality drive higher levels of customer satisfaction. A prevailing view, in the setting of higher education, is to consider students as customers [10]. Higher educational institutions (HEIs) are increasingly focusing on student satisfaction in the wake of growing competition [11]. Further support is provided by various studies that suggest that the main customers of the higher education segment are students, as they are involved in the selection and purchase of services [12]. Therefore, it has been argued that the satisfaction of students is significant because service quality is the only performance indicator for a higher education service provider [13].

Excellent service quality increases customer satisfaction. Students are looking for higher education that provides better service quality and comfort [14], which more or less affects student loyalty [15]. To cover maximum market share, student satisfaction needs to be maximized with the strategies of providing a high-quality service [16]. Student satisfaction was exceedingly identified with service quality. Satisfaction is a client's response to the service provided [17]. As per [18], satisfaction is fidelity due to its value paid. Buyers can feel both pleasure and dissatisfaction as they spent money and received services [19]. Over-promising and under-delivery of services make the customer more dissatisfied, whereas better service at less price makes them more satisfied. Moreover, student satisfaction is not generally identified with objections; however, just because purchasers do not complain does not mean that they are fulfilled [20]. Highly satisfied students are more loyal to their institution and spread positive comments and recommend the institution to others [21]. Authors in reference [22] perceived positive relationships between service quality, student satisfaction, and student loyalty. Duarte et al. [23] also established this concept in their studies on higher education in Portugal. On the other hand, [24] did not find any evidence of the impact of service quality on student satisfaction.

In Bangladesh, demand is higher than supply especially in the educational sector, because of the growing young population. There are an increasing number of universities, new teaching methods, new materials, facilities, campuses, etc. [25]. Whenever there is a development in any sector, there is always a chance for chaos, disorder, and low-quality services. So, to perform well and provide educational services effectively, the demand has arisen to make quality standards as a benchmark to provide the best output for students and faculty members [26]. Higher education in Bangladesh gained a new dimension after passing the Private University Act 1992. At present, 95 private universities are functioning in the country with 354333 students, though five still have not started their academic activities [27].

While there are wide-ranging studies in the domain of service quality in higher education, specific gaps in the literature are identifiable. To begin with, among the various tools that have been used to evaluate service quality, the SERVQUAL model has been the most extensively used to demonstrate the present condition of service quality by providing the gap score between perception and expectation [28]. Therefore, the main objective of

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this paper is to analyze the educational service quality of selected private universities in Chattogram based on a modified service quality (SERVQUAL) instrument. The students' perceptions and expectations of education services were measured, and a gap analysis was conducted to determine where and how gaps in educational service quality exist and the extent of their impact. These empirical findings can help the higher education policymakers and administrators in Bangladesh to improve the quality of services provided and enhance student satisfaction.

2. Literature Review: Service Quality

Education is one of the most competitive elements of the service industry. In higher education, private universities in particular have to provide services of the highest quality to the students as a part of this industry. When students' satisfaction is higher than their expectations, they will be loyal to their respective institutions [21]. Given the strong influence of service quality on organizations, this topic has been a major focus of research over the past decade [12]. However, there is little agreement on a unanimously recognized conceptualization and a standardized theory defining service quality. According to [19], service quality can be defined as an overall judgement similar to the attitude towards the service and is generally accepted as an antecedent of overall customer satisfaction. In the context of higher education, the student-perceived service levels can put pressure on HEIs to monitor and implement service quality.

SERVQUAL, an acronym for service quality, is a multi-dimensional survey instrument designed to capture the consumers' expectations and perceptions along five dimensions of service quality: tangibility, reliability, assurance, responsiveness, and empathy. The survey instrument was built on the expectancy–disconfirmation paradigm, which essentially means that the quality of service is understood from the customers' pre-use expectations of quality and confirmed or disconfirmed by their actual perceptions after the usage experience. Ever since the development of the SERVQUAL survey questionnaire by [19], it has been widely used to measure service quality in a variety of industries, contexts, and cultural settings [29]. As students are the main stakeholders of HEIs, service quality in the context of higher education has relied on the service experience of students as provided by HEIs. Furthermore, the satisfaction of students is substantially influenced by their perception of service quality [30]. Given the importance of this relationship, several researchers in the setting of higher education have tried to advance and scrutinize service quality.

With the presence of intangibility, inseparability, hybridity, variability, perishability, and ownership, fewer services in the educational sector have the same characteristics as services in others [9,19,31]. Due to these likenesses, educational institutions need to apply market-oriented and profit-oriented principles to achieve a competitive advantage and institutional sustainability [32]. To meet the students' expectations, service quality efficiencies will be determined by the university costs and benefits, level of student satisfaction, switching behavior, word of mouth, and rebuying intention [33–38].

Most studies in the field, however, have used a P-E paradigm to explore service quality in HEIs [39]. Contemporary scholars have used traditional items or used adapted SERVQUAL measurement questions and found all the dimensions of the adapted SERVQUAL model to strongly support the assessment of service quality in higher education [40]. Several other studies have used the five traditional dimensions of the original model. For example, a study undertaken in Iranian universities investigated the service quality of higher education. In this study, while assessing the service quality of a university, some dimensions such as empathy, tangibility, and assurance were lacking provision [41]. Another study conducted in an African university found reliability to be the leading dimension of students' perceived service quality [42]. In addition, [43] developed a model to assess quality in HEIs using the Analytical Hierarchy Process (AHP) method. The AHP is a multiple-criteria decision-making method and has been used in the assessment of service quality. This method was developed to assist decision makers using multiple criteria. However, the AHP method is not

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favored among researchers because it introduces imprecision, as it requires the judgments of experts [44]. While several studies have examined service quality in the field of higher education across the globe, research on the quality of service in HEIs in Bangladesh is scant.

According to [45], in the assessment of service quality in educational services, perceived service quality is used to compare service expectations with the realization of actual service performance, as well as service quality assessment in other service sectors. In the case of higher education in private universities, different scholars identified different factors to assess quality. The primary focus constructs are teaching method, updated curriculum, faculty credentials, academic calendar, classroom facilities, administrative support, infrastructure, transportation, library and lab facilities, fee structure, payment system, evaluation system, research environment, corporate attachment, etc.. When actual performances overrun the expectations of the students, there is a positive response that will result in satisfaction. This satisfaction will ascertain the long-term competitive advantage, loyalty, and sustainability of the private university as a service provider.

2.1. SERVQUAL Approach to Measure Service Quality in Educational Services

In general, the most ordinarily used models for measuring service quality in educational services are SERVQUAL [19], SERVPERF [46], and HEdPERF [47]. Of the three models, SERVQUAL is the most widely used one. According to [19], SERVQUAL is a measurement instrument for measuring service quality which helps to determine customers' expectations and perceptions, namely:

- Tangibility: physical facilities, equipment facilities, and personnel support.
- Reliability: ability to accurately fulfill what was promised to users.
- Responsiveness: willingness to help customers promptly and ability to capture trust and confidence.
- Assurance: competency and courtesy of employees to convey trust.
- Empathy: caring, individualized attention to customers.

The use of SERVQUAL in educational services has been widely demonstrated in previous studies [48–56]. Moreover, [57] and [46] considered SERVQUAL as less precise. Based on the above analysis, the research hypotheses to be tested are as follows:

Research Hypothesis 1 (H1). *The tangibility dimension has a positive relationship with overall service quality in educational services.*

Research Hypothesis 2 (H2). *The reliability dimension has a positive relationship with overall service quality in educational services.*

Research Hypothesis 3 (H3). *The responsiveness dimension has a positive relationship with overall service quality in educational services.*

Research Hypothesis 4 (H4). *The assurance dimension has a positive relationship with overall service quality in educational services.*

Research Hypothesis 5 (H5). *Empathy has a positive relationship with overall service quality in educational services.*

2.2. Service Quality and Satisfaction

Satisfaction has been defined by several scholars as an emotion felt by an individual with experience performance or an effect of a personal expectation]. It is usually a function of the relative level of perceived performance. Students who even enter higher education may go as far as beyond their expectations, which has left the door open for researchers to determine first what the students expect before entering the university. The qualities of the institutions are appraised by the students based on reliability, tangibility, responsiveness, and management of the organization. Prior studies have proven that high service quality

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in educational services has a significant effect on student satisfaction [6,11,31]. Students' satisfaction is achieved when the real performance of educational services goes beyond student expectations [19]. Thus, student expectations are expectations of the quality of services provided by educational facilities, while performance is the real performance of the service quality provided by educational services. According to [58], the key predictors of student satisfaction with educational services are the performance of faculty, staff, and classes. Furthermore, predictors of student satisfaction with educational services are internationalization, marketing and support, access, staff and academic quality, accommodation, and facilities. Based on the above analysis, the research hypothesis to be tested is as follows (Figure 1):

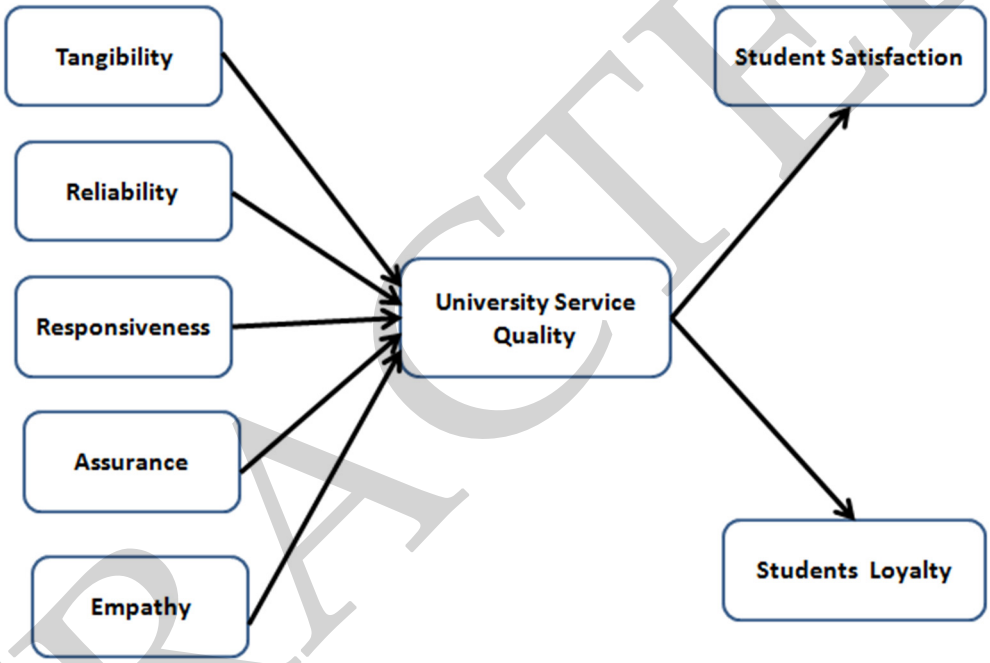

Figure 1. Conceptual model of students' satisfaction and loyalty.

Research Hypothesis 6 (H6). *Service quality has a positive relationship with student satisfaction.*

3. Research Methods

3.1. Sample Design

The sample for this study is the students who study at different private universities in Chittagong in Bangladesh.

3.2. Data Collection

In the study, three private universities, situated in Chattogram, Bangladesh were selected as the sample for purposes of data collection. Both primary and secondary data are used to conduct the research. Articles and textbooks have been reviewed to look into private university students' satisfaction towards the service provided by their universities and their loyalty to the universities. Here, a printed survey questionnaire is prepared to collect primary data, where such data are collected by direct personal visits to the respondents.

3.3. Survey Instrument

The SERVQUAL approach is adopted to measure educational service quality, consisting of tangibility, reliability, responsiveness, assurance, and empathy [19]. Student satisfaction is measured by the expectations and performance dimensions of the educational service [59]. In the study, the questionnaire survey method was conducted among the student respondents by providing a 43-item questionnaire developed by the researchers

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to gather primary data, where 4 questions are about demographic characteristics and the remaining 39 questions consist of 21 questions about Service Quality Scale(SQS), 10 questions about Students' Satisfaction, and 8 questions about Students' Loyalty regarding the private university, all on a 5-point Likert scale (5 = Strongly Agree, 1 = Strongly Disagree).

3.4. Reliability of the Scale

Reliability is formed with an overall Cronbach's alpha that shows the strong or weak consistency of a set of items (variables) that are performed to measure the study concept. Cronbach's alpha is the most widely used method of reliability test. It is calculated using the Statistical Package for Social Science (SPSS, version 23.0) software. It is necessary to mention that its value varies from 0 to 1, but values more than 0.6 are required to be reliable [60,61]. Cronbach's alpha is used in the current study to measure the reliability of the scale.

3.5. Mode of Data Analysis

Initially, the first-order confirmatory factor analysis (CFA) is performed in the overall dataset through the maximum likelihood (ML) estimate to test the validity of a theoretical construct [62]. The constraints employed are tangibility, reliability, responsiveness, assurance, and empathy. Afterward, the results of the CFA are evaluated regarding whether the unidimensionality and reliability of each contract are confirmed. The fit indicators evaluated are RMSEA, CMIN/DF, SRMR, GFI, AGFI, CFI, and HOELTER. Hereafter, structural equation modelling (SEM) is performed by employing the AMOS 23 software to observe the relationship between service quality dimensions (tangibility, reliability, responsiveness, assurance, and empathy) with satisfaction and loyalty.

To discuss the model fit of SEM, the study considers the criteria of the various model fit indices which have been given in Table 1.

Table 1. Criteria of model fit indices.

Model Fit Indices	Description	Criteria	Source
CMIN/DF	Relative Chi-square value	<3	[63]
GFI	Goodness of Fit	≥0.90 (Depend on the sample size) ≥0.80 (Marginal)	[64]
AGFI	Adjusted Goodness of Fit	≥0.90 (Depend on the sample size) ≥0.80 (Marginal)	[64]
CFI	Comparative Fit Index	≥0.90 (Very Good Fit) ≥0.80 (Satisfactory) ≥0.75 (Fair Fitting Model)	[65–67]
RMSEA	Root Mean Square Error of Approximation	<0.08 (Good fit) 0.08–0.10 (Mediocre Fit)	[68]
SRMR	Standardized Root Mean Square Residual	<0.05 (Well Fit Model) <0.08 (Deemed acceptable)	[63,69,70]
HOELTER	Hoelter's index	Critical Sample Size > 75 at *p*-value 0.05 and 0.01	[71,72]

4. Data Analysis and Findings

4.1. Demographic Characteristics of Respondents

The descriptive statistics in this study show the different demographic characteristics of the studied sample as follows (Table 2).

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Table 2. Demographic characteristics of respondents.

Demographic Characteristics of Respondents	% (Statistics)
Gender:	
Male	61.57 (141)
Female	38.43 (88)
Age:	
18–19	3.49 (08)
20–21	38.87 (89)
22–23	52.40 (120)
24 years and above	5.24 (12)
Educational Level:	
BBA	60.24 (138)
LLB	8.73 (20)
CSE	9.61 (22)
EEE	4.37 (10)
B. Pharm	4.37 (10)
BA (Hons)	10.04 (23)
Postgraduate	2.62 (06)

It is found that the total sample is 229, where 61.57 percent are male and the remaining 38.43 percent are female respondents (see Table 2). From the table, it is found that 52.40 percent of the respondents are in the age group of 22–23 years old. The second highest age group lies within the range of 20–21 years old, which is about 38.87 percent. In addition, 5.24 percent of the respondents are in the age group of 24 years old and above, and the remaining 3.49 percent of the respondents are in the age group of 18–19 years old (Table 2).

The study also considers the educational qualifications of the respondents, as formal education is the crucial capital of an individual in building his or her occupational career. In this context, Table 2 shows that 60.24 percent of the respondents are BBA. The BA (Hons) students are in the second-highest position, which is about 10.04 percent. In addition, 9.61 percent of the respondents are CSE, 8.73 percent of the respondents are LLB, the same percentage, i.e., 4.37 are from both EEE and B. Pharm and the remaining 2.62 percent of the respondents are postgraduates (Table 2).

4.2. Reliability Test

In this study, the reliability test is performed to verify the consistencies of predetermined items/variables regarding the factors (Table 3).

Table 3. Reliability test results.

Construct		Symbol	Dimensions	Cronbach's Alpha
Service Quality	Tangibility	Q1	Lighting in lecture/seminar rooms	0.611
		Q2	The external appearance of the building	
		Q3	Lecture/seminar rooms are in a comfortable temperature	
		Q4	Adequacy of computers laboratory	
		Q5	Internal accessibility	
	Reliability	Q6	Efficiency of registration	0.681
		Q7	University tendency of keeping records accurately	
		Q8	Lectures and seminars take regularly	
		Q9	Services are provided on time	
	Responsiveness	Q10	Availability of personnel to help students	0.804
		Q11	Availability of lecturers for consultation and assistance	
		Q12	The capacity of the lecturer to solve immediate problems	
		Q13	The capacity of administrative staff to solve immediate problems	
		Q14	Availability of the channels of communication for complains	
		Q15	Efficiency in dealing with queries	

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Table 3. *Cont.*

Construct		Symbol	Dimensions	Cronbach's Alpha
Service Quality	Assurance	Q16	Staffs interaction with students	0.630
		Q17	Lecturers are proficient in teaching and research	
		Q18	Staff awareness of university policy and responsibilities	
	Empathy	Q19	University management has focused on students	0.782
		Q20	Availability of study room for students	
		Q21	University has safety and security measures	
Student Satisfaction		S1	Satisfaction with the decision to study here	0.898
		S2	Satisfaction with the quality of academic services	
		S3	Feel comfortable studying here	
		S4	Satisfaction with the quality of teachers	
		S5	Satisfaction with the quality of administrative service	
		S6	Satisfaction with the quality of equipment and facilities	
		S7	Satisfaction with the faculty learning services	
		S8	Satisfaction with the services provided by the faculty	
		S9	If has to do it all over again, I still will enroll in this institution	
		S10	My choice to enroll in this institution is a wise one	
Student Loyalty		L1	This campus gives a positive impression on me	0.878
		L2	Recommendation the campus to friends and family members	
		L3	Feeling proud to be associated with the campus' activities	
		L4	I will write a positive impression about this campus on social media	
		L5	I have no intention of moving to another campus	
		L6	I believe it is a good university	
		L7	I believe that it provides more benefits than other universities	
		L8	I believe that it has a better image than other universities	

Source: [19,73].

The reliability values of the scale in the present study are 0.611 for tangibility, 0.681 for reliability, 0.804 for responsiveness, 0.630 for assurance, 0.782 for empathy, 0.898 for student satisfaction, and 0.878 for student loyalty, which is greater than 0.6. Thus, the scale of the present study is reliable for data analysis, as it is greater than 0.60 [60,74] (Table 3).

4.3. Results of Various Dimensions of Service Quality

The relationship between each latent variable of service quality is displayed in Figure 2. According to Table 4, the main dimension of tangibility is a comfortable lecture room (0.75), while the main dimension of reliability is that services are provided on time (0.64). Furthermore, the main dimension of responsiveness is the capacity of administrative staff to solve immediate problems (0.71), and the main dimension of assurance is that lecturers are proficient in teaching and research (0.69). Finally, the main dimension of empathy is the focus of university management on students (0.77). All significant dimensions affect each variable with an alpha of 1% (Table 4). The results of the model fit indices in the study report that CMIN/DF = 2.27, CFI = 0.87, GFI = 0.85, AGFI = 0.81, RMSEA = 0.08, and SRMR = 0.063.It is also found in the model that Hoelter's N returns the value of 119 at the 5% significance level and returns the value of 127 at the 1% significance level. Based on overall indices, this sample has an acceptable fit to the model, as Chi-square, CMIN/DF, CFI, RMSEA, RMR, and SRMR lie in the acceptable ranges. Although some indicators do not meet the criteria of goodness of fit, overall, the model has met the criteria of goodness of fit [69], as CMIN/DF, CFI, RMSEA, SRMR, and Hoelter's N return values within the acceptable ranges (Table 4).

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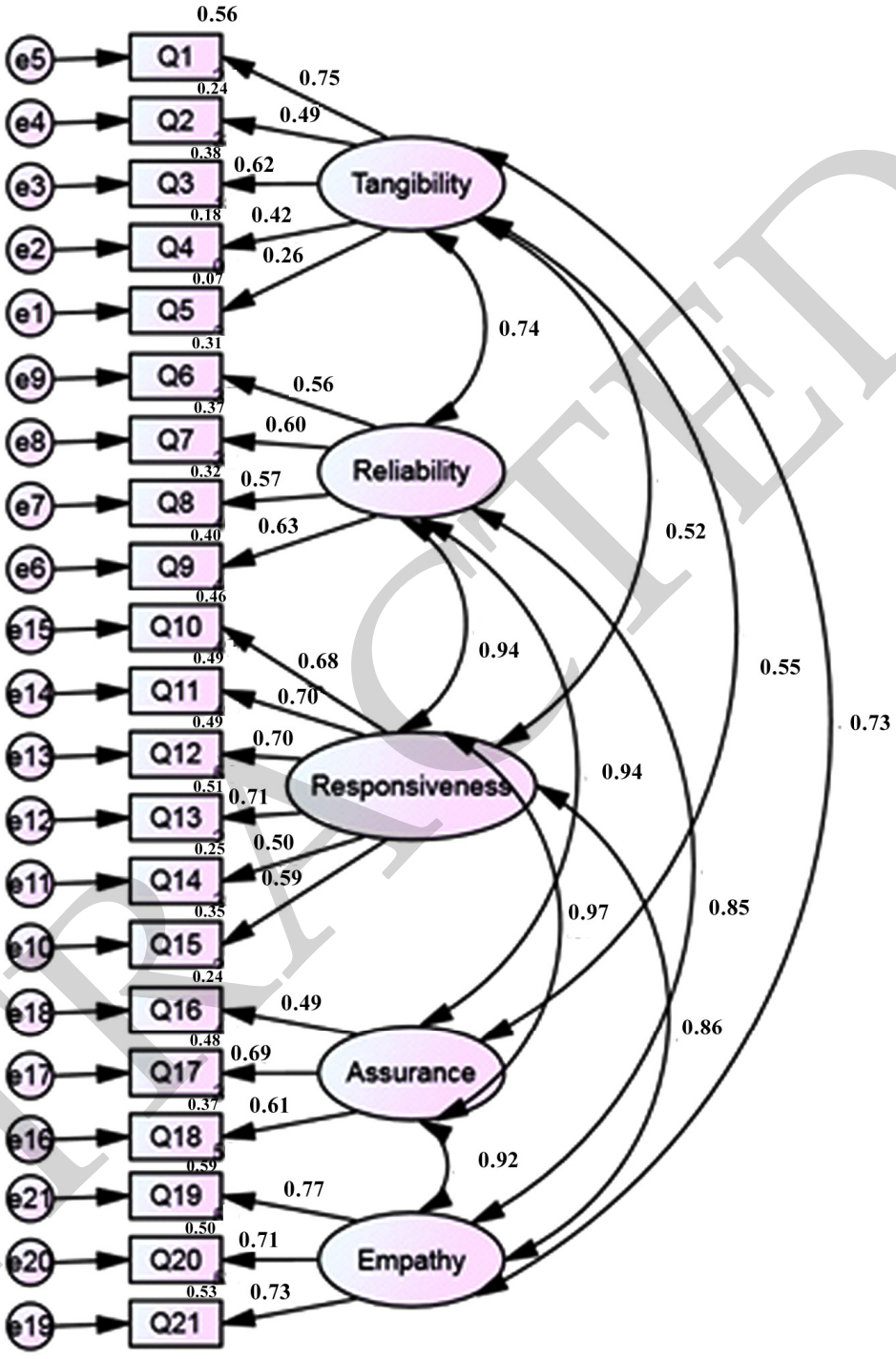

Figure 2. Path diagram of service quality.

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Table 4. Results of regression weights.

Path	Unstandardized Estimate	Standardized Estimate	S.E.	C.R.	*p*
Q5 <— Tangibility	1		0.26CP		***
Q4 <— Tangibility	0.44	0.43	0.15	3.07	***
Q3 <— Tangibility	0.81	0.62	0.24	3.33	***
Q2 <— Tangibility	0.54	0.49	0.17	3.18	***
Q1 <— Tangibility	0.80	0.75	0.24	3.40	***
Q9 <— Reliability	1	0.64	CP		***
Q8 <— Reliability	0.96	0.57	0.13	7.45	***
Q7 <— Reliability	0.91	0.60	0.12	7.88	***
Q6 <— Reliability	0.85	0.56	0.12	7.37	***
Q15 <— Responsiveness	1	0.59	CP		***
Q14 <— Responsiveness	0.96	0.50	0.15	6.47	***
Q13 <— Responsiveness	1.35	0.71	0.16	8.44	***
Q12 <— Responsiveness	1.22	0.70	0.15	8.34	***
Q11 <— Responsiveness	1.11	0.70	0.13	8.35	***
Q10 <— Responsiveness	1.11	0.68	0.14	8.14	***
Q18 <— Assurance	1	0.61	CP		***
Q17 <— Assurance	1.12	0.69	0.13	8.50	***
Q16 <— Assurance	0.76	0.49	0.12	6.51	***
Q21 <— Empathy	1	0.73	CP		***
Q20 <— Empathy	1.12	0.71	0.11	10.00	***
Q19 <— Empathy	1.02	0.77	0.09	10.85	***

Notes: *** Significant at alpha 1%,. S.E.: Standard Error, C.R.: Critical Ratio, CP: Constant Parameter.

Table 5 reveals that the relation between the dimensions is positively significant.

Table 5. Correlations among the dimensions.

	Tangibility	Reliability	Responsiveness	Assurance	Empathy
Tangibility	1				
Reliability	0.74 ***	1			
Responsiveness	0.52 ***	0.94 ***	1		
Assurance	0.55 ***	0.94 ***	0.97 ***	1	
Empathy	0.73 ***	0.85 ***	0.86 ***	0.92 ***	1

Note: *** Significant at alpha 1%.

4.4. Results of Overall Service Quality with Students Satisfaction, Loyalty, and Discussion

The following Figure 3 shows the relationship between each latent variable of service quality, student satisfaction, and student loyalty.

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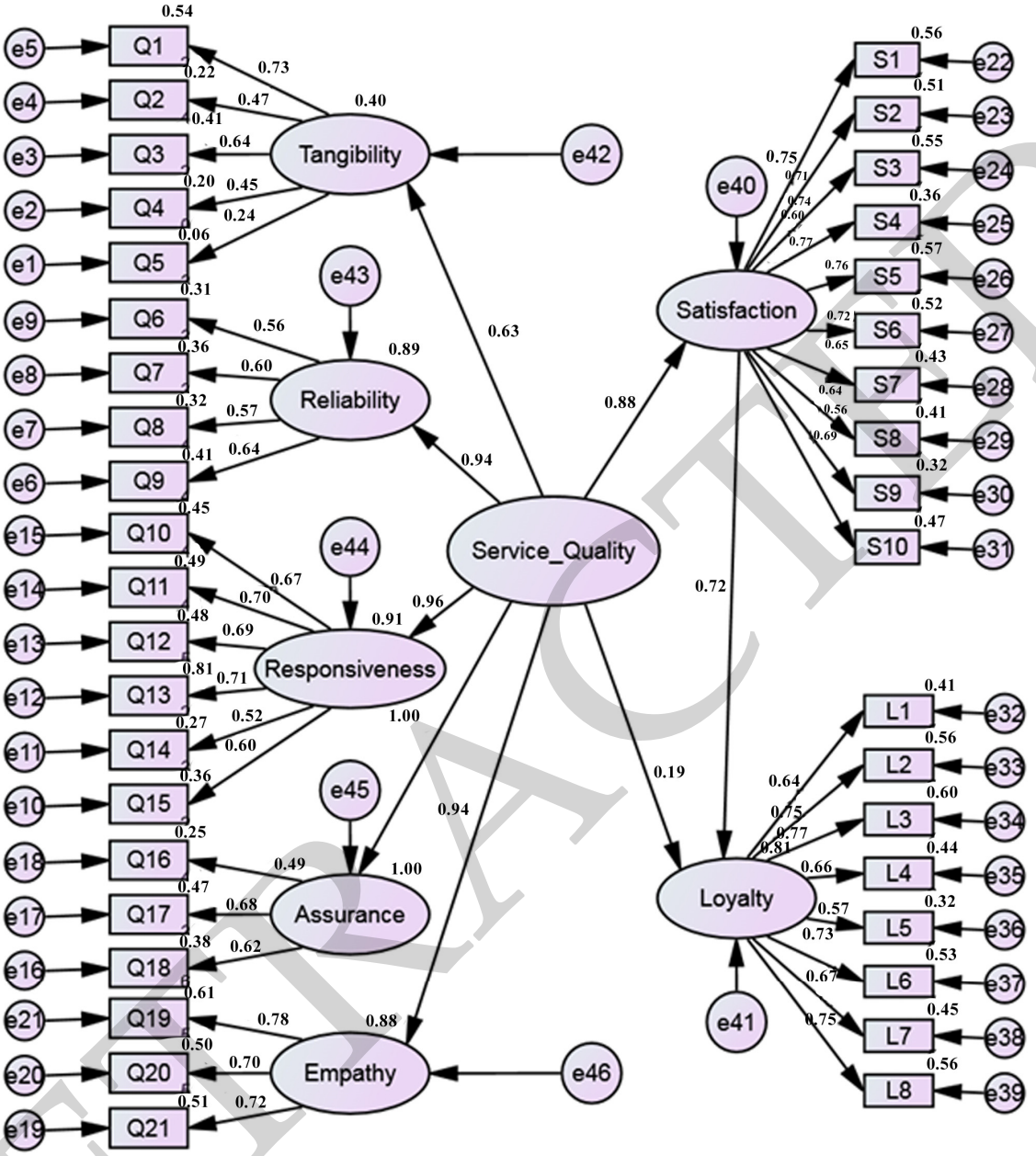

Figure 3. Path diagram.

From Table 6, the results show that CMIN/DF = 2.19, CFI= 0.81, GFI = 0.74, AGFI = 0.71, RMSEA = 0.07, SRMR = 0.06.The model also shows that Hoelter's N returns the value of 114 at the 5% significance level and returns the value of 118 at the 1% significance level. Based on overall indices, this sample has an acceptable fit to the model, as CMIN/DF, CFI, RMSEA, RMR, and SRMR lie in the acceptable ranges. Although some indicators do not meet the criteria of goodness of fit, overall, the model has met the criteria of goodness of fit [69], as Chi-square, CMIN/DF, CFI, RMSEA, SRMR, and Hoelter's N return values within the acceptable ranges. Service quality is found to influence student satisfaction positively, as their relationship coefficient is significant (0.88, $t = 3.00$, $p < 0.01$), and student satisfaction influences student loyalty, as their relationship coefficient is significant (0.73, $t = 5.26$, $p < 0.01$). In addition, dimensions of service quality are tested such as assurance (1.00, $t = 2.96$, $p < 0.01$); responsiveness (0.96, $t = 2.94$, $p < 0.01$); reliability (0.94, $t = 2.96$, $p < 0.01$); empathy (0.94, $t = 2.99$, $p < 0.01$); and tangibility (0.63, taking as constant parame-

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ter, $p < 0.01$). All relationships except the relationship between service quality and student loyalty are found to be positively significant as expected (Table 6).

Table 6. Result of regression weights.

Path	Unstandardized Estimate	Standardized Estimate	S.E.	C.R.	*p*
Satisfaction <— Service Quality	1.19	0.88	0.40	3.00	***
Loyalty <— Satisfaction	0.63	0.73	0.12	5.26	***
Tangibility <— Service Quality	1	0.63	CP		***
Reliability <— Service Quality	1.09	0.94	0.37	2.96	***
Responsiveness <— Service Quality	1.03	0.96	0.35	2.94	***
Assurance <— Service Quality	1.21	1.00	0.41	2.96	***
Empathy <— Service Quality	1.48	0.94	0.49	2.99	***
Loyalty <— Service Quality	0.22	0.19	0.16	1.43	0.15

Note: *** Significant at alpha 1%. S.E.: Standard Error, C.R.: Critical Ratio, CP: Constant Parameter.

The study uses confirmatory factor analysis, which reveals that the five dimensions of tangibility, reliability, responsiveness, assurance, and empathy have a significant positive impact on the service quality of private universities in Bangladesh. More specifically, the study finds that the fundamental element of tangibility is a comfortable study hall, while the basic element of reliability is on-time service. Moreover, the major element of responsiveness is the capability of administrative assistants to solve immediate problems, and the main element of assurance is that faculty members are proficient in teaching and research. Finally, the main material of empathy is the focus of university authority on students. Service quality is found to influence student satisfaction positively, as their relationship coefficient is significant, and student satisfaction influences student loyalty as their relationship coefficient is significant. All relationships except the relationship between service quality and student loyalty are found to be positively significant.

The lack of a substantial correlation between service quality and student loyalty explains why the quality of higher education services at private universities will not significantly affect student loyalty. This finding supports the study conducted by [23]. On the other hand, student loyalty is highly influenced by student satisfaction; therefore, satisfied students will be more loyal. This finding is consistent with studies by Duarte et al. [23] and Annamdevula and Bellamkonda [15,22]. Therefore, while strong service quality can raise student satisfaction, which in turn fosters student loyalty, it cannot ensure student loyalty.

5. Conclusions and Limitations

This study examined the educational service quality provided by a few private universities in Chattogram using a modified service quality (SERVQUAL) instrument. These empirical results can assist Bangladeshi higher education officials and administrators in raising service standards and increasing student satisfaction.

It examines the effect of service quality on student satisfaction and loyalty to private universities in Bangladesh. Based on the empirical results, it is inferred that service quality affects student satisfaction, where student satisfaction ultimately influences student loyalty. The study shows that comfortable lecture halls under the tangibility dimension, timely service under the reliability dimension, administrative staff's ability to address urgent issues under the responsiveness dimension, competent lecturers for teaching and research under the assurance dimension, and attention to university management of students under the empathy dimension have a significant impact on students' satisfaction of private universities in Bangladesh.

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Moreover, the study finds an insignificant relationship between service quality and student loyalty, meaning that good service quality does not guarantee student loyalty, but well-accepted quality can increase student satisfaction, which leads to student loyalty. Thus, managers and authorities of private universities must focus on service quality, as students who are satisfied due to good service quality have more loyalty.

This empirical study provides insight and knowledge on service quality, student satisfaction, and student loyalty of private universities, and it will serve as a valuable pedagogical and research reference for stakeholders of private universities; however, in common with all research, it has some limitations. The study collects information from students at private universities, but the findings may not represent the whole education sector. Thus, future possibilities for study may arise as a consequence of these limitations.

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