

# Critical Factors in Service Quality Measurement for Private Universities: The Case of Bangladesh

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## Abstract

Private universities are a fast growing value-based education industry in Bangladesh. The University Grants Commission (UGC) of Bangladesh and relevant stakeholders are particularly concerned about the infrastructure and quality of education in the private and public universities of Bangladesh. This paper undertakes an empirical examination of the factors determining the quality of services in the private universities of Bangladesh. Dimensions of SERVQUAL, country image and price are examined. Data are collected using the random sampling technique. A total of fourteen factors in three dimensions namely reliability, responsiveness, and competence have been extracted from fifty-two factors under twelve dimensions using the factor analysis method. The major conclusion of this study is that private universities should have proper infrastructure, proficient faculty members and competent staff. This study aims to measure and maintain the service quality factors, and contributes to further innovations in services quality especially for the value-based higher education sector.

**Keywords:** SERVQUAL, Country Image, Price, Factor Analysis

## Introduction

The services of a university are value-based. Students, faculty members and staff are the major forces of this value-based service activity. Their experience, perceptions and cultures play a vital role to form perceptions of service qualities toward a set of brands (in this case the names of the universities). The members of this value-based education industry perceive services in an idiosyncratic and ethnocentric way. Their activities also help others to perceive qualities toward services.

A product's quality can be measured by observing features or attributes, color, shape, package, functions, and even by comparing prices. These factors are difficult to define for services, however, it is typically agreed that services have several characteristics. These characteristics are invisibility, perishability, intangibility, inseparability, and heterogeneity. Therefore, identification and evaluation of the critical factors of service qualities depend on perceptions and experiences of the service

recipients. While the substance and determinants of quality of service may be undefined, its importance to organizations, consumers, and service recipients is unequivocal (Parasuraman et al. 1985). It is important for service organizations to identify the critical service quality factors and evaluate them periodically. The basic reasons are to track the key service factors and to improve them from the existing level. This, in turn, improves the brand image of the organization. The present study empirically examines the service quality of private universities in Bangladesh.

The University Grants Commission of Bangladesh is the regulatory body of all the public and private universities of Bangladesh.<sup>1</sup> There are twenty-two public universities in Bangladesh. Public universities have good infrastructure and adequate space. Every year the top rated public universities are able to attract good quality students and consequently offer lectureship to the best students. However, the quality of education in public universities has become questionable owing to a lack of proper monitoring and controls. In addition, the linkage of students and teachers with the mainstream politics, lack of research and development work, nepotism, tender violence (e.g. violence among students' who belong to the political groups for getting construction works inside the university) and acute session jam are some of the important reasons why educational qualities in the public universities of Bangladesh are deteriorating.

The Private University Act 1992 has facilitated the establishment of universities by entrepreneurs and education promoters in the last decade. Private universities in Bangladesh have provided access to higher studies for more students. There are nearly 135 thousand students enrolled in the fifty-four private universities in Bangladesh.<sup>2</sup> This value-based higher education industry is fast growing in Bangladesh. There are two main streams of education in these universities—one is business education and the other is computer and information systems studies. Establishment of private universities has reduced the propensity to go abroad for higher education to a great extent—as much as 60 to 70 percent. This has saved foreign currency to the tune of several million dollars and at the same time halted the brain drain. This can be considered one of the remarkable successes of private universities. Foreign students are also studying in a good number at private universities in Bangladesh. Establishment of private universities has also resulted in a manifold increase in employment opportunities. In addition to the employment of teachers and office staff, many students are able to secure part-time jobs. This has created job opportunities for thousands.<sup>3</sup> In contrast with the public universities, no session jam, political influence or and student politics are observed in private universities. Further, private universities run academic programs on the semester system and have introduced four-year undergraduate programs. Introduction of the semester system is one of the great contributions made by private universities. It has enabled students to complete their programs very quickly and without any hindrance, enabling them to start their careers earlier.

Although there is a common belief that students who fail to gain admission to the main public universities or government medical colleges go to private universities, the number of meritorious students seeking admission to private universities in Bangladesh is increasing day by day. However, it is also worth mentioning that public universities offer a very limited number of places in some disciplines. At present, the ratio of number of subjects between private and public universities is roughly 1:15, average ratio of number of teachers between private and public universities is about 1:66, the ratio

of number of students' enrollment between private and public universities is about 110 per year, and the ratio of tuition fees for a student in private and in public universities is nearly 6661 per year.

Most of the private universities do not have libraries or computer facilities good enough to cater to the needs of their students. Relevant reference books and standard foreign and national journals can hardly be found in the libraries of private universities. Almost all private universities in the country face problems of space and accommodation. According to the set conditions of the Private University Act 1992, private universities are supposed to develop their own campuses within five years of their inception. However, most of them have failed to establish permanent campuses. In addition to the poor infrastructure in private universities, a shortage of full-time teachers has made hiring qualified academic staff one of the most acute problems. Private universities have become too dependent on part-time teachers mostly drawn from the public universities. The migration of teachers from the public to the private sector either as part-time or as full-time employees is also jeopardizing the academic environment of public universities in many instances. Further, the recruitment of retired and high-placed government officials as professors (for the purpose of lobbying) is also putting education at risk in private universities.

Another common complaint about the governance of private universities is that it is too much person-based. Usually the person(s) who takes the initiative in establishing the university, dominates the administration either by taking the second chair of the academic council or recruiting their own people in different authorities. However, the high cost structures of private universities have failed to appeal the general public.

Concern over the quality of education led to the establishment of a high-powered evaluation committee headed by the University Grants Commission (UGC) chairman. In its report dated October 17, 2004, the committee made a number of specific recommendations on each of the private universities regarding what measures have to be taken to ensure quality education. The committee made recommendations on physical infrastructure, financial matters, teachers' quality and recruitment, laboratory and library facilities, status of courses and facilities, and internal feuds within the universities. The recommendations also included the establishment of an accreditation council for private universities, empowering the UGC with executive authority, formulation of statutes in line with standard guidelines for universities, and spelling out clearly in the law that private universities must be non-profit organizations (Ali 2006). He also states that due to political pressure from the influential quarters, the UGC is not able to implement most of the recommendations it made for ensuring quality education in private university sector.<sup>4</sup>

The reputation of public universities in Bangladesh has been eroded especially

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<sup>1</sup> For more detail, please see, University Grants Commission Act 1973 (Section 5(1) of the Act no. 10) and Public University Act 1973 (Act No. 26) published in the Bangladesh gazette, dated 25 September 1973; and Private University Act (Act No. 34 of 1992), published in the Bangladesh gazette extraordinary, dated 09 August 1992.

<sup>2</sup> Primary survey results as of 2005.

<sup>3</sup> Haider, A. Q. 2006. "Amending Private University Act: Suggested recommendations," *The Daily Star*, 4 (235, April 29). For more detail: < <http://www.thedailystar.net/>>.

<sup>4</sup> Ali, Tawfique. 2006. "Influential lobby blocks UGC recommendations," *The Daily Star*, 5 (710, May 28): 4. For more details: < <http://www.thedailystar.net/>>.

due to politicization of the academic environment. As a result, in recent years private universities have been gaining importance to students and to their parents as an alternative provider of higher education. The major concerns of the relevant stakeholders are to ascertain the quality of the key services provided by these universities, and maintain and improve them over the course of time. Our research question aims to address these concerns. The key research question for this study is: what are the critical factors that shape ‘perceived service quality’ in the private universities of Bangladesh?

A well established method for identification and evaluation of critical factors is the SERVQUAL approach developed by Parasuraman, Zeithaml & Berry (1985, 1988). SERVQUAL has ten dimensions including reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding or knowing the customer, and tangibles. This model is flexible because the details of these ten dimensions can be adapted to various institutional contexts. SERVQUAL is also effective because it includes intrinsic and extrinsic cues as well as psychological factors that determine perceptions of service quality towards a brand, and can be measured using statistical tools. We empirically examine the ten dimensions of SERVQUAL. Moreover, *price* and *country image* are also examined. The dimension of *country image* is examined as a proxy dimension of association of private universities in Bangladesh with foreign universities. The cost of education services in private universities is substantially higher than that of the public universities. Therefore, the factor of *price* is examined as a means of getting better quality services at a reasonable cost.

This study finds fourteen factors under three main dimensions—namely reliability, responsiveness, and competence—using the factor analyses. We are optimistic that these extracted factors can play an important role in determining the quality of higher education in the private universities of Bangladesh. This study has managerial implications and can contribute to the process of making policies for private universities. In addition, the public universities and the UGC can get benefit from this study and can utilize it to develop an ‘educational quality measuring scale’.

The structure of this paper is arranged as follows. The section immediately following this one states the theoretical and empirical background. The third section deals with the objectives and methodology. In the fourth section, analysis and findings have been presented. Conclusions and limitations, references and appendix have been placed in the fifth section.

## **Literature Review**

Service quality in the higher education sector has been discussed in only a handful of writings. Until recently, very few attempts had been made to explore the underlying factors related to service quality in the value-based higher education industry in Bangladesh. However, we find a number of studies that focused on identifying the key dimensions of service quality. We also find some empirical studies that examined the effects of these dimensions on perceived quality in some specific sectors.

### *Perceived Quality*

Quality, by definition, rests solely on ultimate service receivers or consumers. The concept of quality incorporates many factors, including the level of technology

reflected in the product, standards that reflect customer needs, support services, and prices. Quality for many products is assessed in terms of fulfilling specific expectations (Cateora and Graham 2002). However, Chowdhury (2001) quotes Lee and states that perceived quality is the consumer's evaluative and effective judgment concerning the overall excellence of a brand based on intrinsic as well as extrinsic attributes which are directly related to his or her satisfaction with that brand. Chowdhury and Abe (2002) state that consumers' perceptions of quality are generally formed on the basis of an array of cues. These cues basically fall into two categories: intrinsic cues and extrinsic cues. Intrinsic cues refer to attributes that cannot be changed without changing the physical characteristics of the product. Extrinsic cues, however, are the attributes that are not part of the physical products.

However, we consider intrinsic cues as the fundamental service qualities and extrinsic cues as the external or non-fundamental service characteristics of a university. For example the classroom facilities, library and laboratory facilities, faculty and staff services, program and curriculum design, and extra-curricular activities are considered as intrinsic cues. On the other hand, location and building, price, and image dimensions as the external cues.

### *The SERVQUAL Theory*

The exploratory qualitative research of Parasuraman, Zeithaml and Berry (1985) finds ten dimensions of service quality and develops a conceptual model for it. These dimensions are reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding/knowing the customer, and tangibles. This research was conducted through the focus group interview technique with consumers and the in-depth interview technique with executives in four nationally recognized service firms. Four service categories were chosen for investigation, namely, retail banking, credit cards, security brokerage, and product repair and maintenance. Focus group interviews were conducted across the U.S. Although this service quality construct is well established, still there is much scope for empirical examination of the construct's reliability and validity in the value-based education sector.

Parasuraman, Zeithaml, and Berry (1988) develop a twenty-two item instrument called SERVQUAL for assessing customer perceptions of service quality in service and retailing organizations. They develop a scale for measuring service quality and discuss the scale's properties as well as the potential applications. They purify the scale's reliability through determining coefficient alpha values. They also use factor analysis to filter out the dominant items under each dimension. In their research, 97 item instruments are developed and finally 54 items with alpha values ranging from 0.72 to 0.83 are accepted.

Although the dimensions of SERVQUAL have been empirically examined in value-based education sectors, such examinations are still limited.

### *Empirical Studies*

Only a handful of studies have been directed toward defining educational service quality within a very limited scope. For example, an empirical study by Chowdhury and Sultan (2005) finds thirty-one items in eleven dimensions including reliability, responsiveness,

competence, access, courtesy, communication, credibility, security, understanding, tangibles, and country image. The purpose of this study was to determine the reliability of the service quality factors related to the value-based higher education industry in Bangladesh. They consider alpha values ranging from 0.60 upwards. High alpha values indicate a good internal consistency among items within each dimension. They eliminate three factors of the 'price' dimension as it shows low coefficient alpha values. The coefficient-alpha of the reliability test was used in this study to determine the reliability of the factors assigned under each dimension. The study was analyzed without statistical average, standard deviation, and factor analysis.

Rahman (2004) states that private universities in Bangladesh offer, at least in principle, some distinct advantages over their public peers. These are: (i) increased choice and/or access for those students who either are unable (due to increased competition) or unwilling (due to the characteristics of the institutions) to enter the public system; (ii) timely completion of degrees unhindered by session jams as in the public system; (iii) a safe and secure environment free of student violence – a particularly attractive feature to parents; (iv) a semester system of education where students are evaluated continuously and multiple times in circumscribed courses, rather than through in one anxiety-provoking end of course final examination which can make or break one's career; (v) coursework in English, competence in which is increasingly recognized as the passport to jobs in the global economy; (vi) linkages or the promise of such to universities in North America, Europe, Australia and New Zealand which then provide an avenue for students to pursue higher studies and possibly future employment in the global market place; (vii) the promise of potentially higher quality faculty who are paid substantially more than their public peers and presumably hired on merit rather than through nepotism; (viii) better physical facilities (classrooms, multimedia, laboratories, libraries, computer centers, cafeterias etc) due to the higher resource mobilization from tuition fees; and (ix) the promise of expanded research and scholarly activities funded partially through higher tuition fees. However, Khan (2003) states that currently the theoretical advantages are only partially and variably translated into reality in the private university sector. Further, he states that the major structural disadvantages of private universities vis-à-vis their public peers are (i) high financial costs of attendance which limit access to the financially affluent; and (ii) limited curricular offerings catering to market demands. He states that public universities have also made some inroads into addressing a number of their comparative disadvantages. For instance, there has been overall a reduction in session jams; some institutions have changed over to the semester system; more courses are being offered in English; more attention is being placed on merit-based faculty hiring – although anecdotally nepotism remains rampant in the hiring process; and new programs of instruction compatible with global market place demands (e.g. computer science, business administration at the bachelor's and master's levels) are being offered at some of these institutions.

Russell (2005) examines the service quality perceptions among the students of the hospitality and tourism management department at the Bournemouth University, UK. He states that international student intake is one of the prominent growth areas for sourcing revenue in the education service sectors of the UK, US and Australia. He states that lecturers form the main part of service provision. Further physical evidence like buildings and classrooms, prospectus, website, videos, CD-ROMs and business cards are also important in the formation of perceptions of quality among home and international

students. Russell reveals that it is more feasible to develop perceived quality in terms of satisfaction by using a manageable set of general university characteristics. General university characteristics, for example lecturers and their teaching abilities, availability of staffs, library and computing facilities, class sizes, and students' workload can also affect perceived quality of a program. A sample size of 52 students and some staff members were interviewed for this study. The researcher used a focus group interview consisting of six students before collecting data through questionnaires. He used SPSS and the Pearson chi-square test for analyzing the data. The Pearson test statistic is significant in this study. The findings of this study state that the reputation and educational links of hospitality and tourism programs of the School of Services Management are the most important factors to students in choosing the school and the program.

Faganel and Macur (n.d.) quote Gronroos (2000) and state that there are five service quality determinants, i.e. reliability, responsiveness, assurance, empathy, and tangibles, which have been termed SERVPERF. However, Faganel and Macur use the SERVPERF to construct an adapted questionnaire. The questionnaire was developed with 18 questions in a 5-point Likert-type scale. The descriptive statistics and factor analysis state that students perceive quality based on reliability, responsiveness, assurance, and empathy. On the other hand, tangibility has less importance in forming quality perceptions.

Toit (n.d.) examines the perceptions of undergraduate students at the Rand Afrikaans University, South Africa in 2003. This study measures the students' expectations as well as their real experiences regarding the attributes. The gap between the expectations of a service and the perceived value measures the degree of satisfaction. The gaps also reveal the specific areas where improvements can be made to raise the level of students' satisfaction. The questionnaire designed for this study was based on the principles of the SERVQUAL model. Eighty-nine items were included in service quality dimensions and were divided into the following dimensions: *Academic services* – degree program, assessment, lecturers and outcomes; *Academic support services* – library, computer laboratories, learning centre and the student services bureau; *Non-Academic services* – administration, environment, social climate and financial aid. The questionnaire was also designed with six-point scales. Open-ended questions were included to make provision for gathering qualitative information. A sample of 2316 students (17.56% of the total students) was selected using the stratified cluster sampling and convenience sampling techniques. Dependent and independent sample *t*-tests were conducted to measure the gap analysis. The results indicate that there is a significant difference between the expectation and the experience of services at the university. The reliability analyses for this empirical study show that some of the dimensions were not reliable as the  $\alpha$ -value was less than 0.70. The independent sample test and ANOVA show that there are significant differences in students' perceptions across sub-strata. However, the factor analyses reveal that library services, laboratory services, learning center services, student services, administrative services, physical environment, and availability of funds produce satisfactory services for the undergraduate students. The study also finds that there is a negative gap (dissatisfaction) in the non-academic services and positive gap (satisfaction) in academic services. However, this study does not consider faculty members and staff, who were important parts of the value delivery chain. Another important limitation of this study is that it did not consider focus group

interviews in order to generate the items under service quality dimensions and to identify gaps.

The studies that use the SERVQUAL technique are empirical in nature. Although the number of empirical studies in the value-based higher education sector is limited, important findings have been made with regard to the identification and evaluation of the critical service quality factors.

### *Other Dimensions*

Studies related to perceived quality judgments for physical products are divergent from those which relate to services. However, they are important for this study in order to distinguish the cues in the value-based service sector and to explore the variables. These studies are also valuable for future exploratory and empirical studies in the value-based higher education sector.

Chowdhury and Islam (2003) measure the various types of cognitive associations of the consumers to evaluate quality of physical products. They measure the impact of multivariables on perceived quality, constructing three hypotheses on the attributes of products, country of origin, and perceived price. Their findings support the hypotheses. They state that the consumers consider extrinsic cues when they evaluate a product. The limitation, which they also acknowledge in their paper, is the use of additional variables such as brand image, store image, communications.

Wheatley and Chiu (1977) measure the effects of price, store image, characteristics of respondents, and characteristics of the products on perceived quality. Six hypotheses are developed for this study. The findings support all of the hypotheses except the effects of the demographic characteristics of the respondents on perceived quality. The limitation of this study is that it considers only the color as the product's characteristic.

Garvin (1984) proposes five primary approaches in defining quality. He also suggests eight dimensions of quality for various product categories: performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. However, Brucks and Zeithaml (1991) identify six dimensions of perceived quality with respect to consumer durables (products): ease of use, functionality, serviceability, durability, performance, and prestige.

Lastly, Carpenter and Nakamoto (1994) examine how meaningless differentiation can produce a meaningful differentiated brand. In this study, they assign ordinary attributes of brands to determine whether these have any meaningful significance in brand selection. These ordinary attributes are totally unknown to the subjects. They conclude that consumers may treat irrelevant attributes as valuable in the absence of experience and independent information.

Previous studies have shown that 'country of origin' and 'price' play catalytic roles in formation of perceptions of quality and choice of a brand (see, for example, Wheatley and Chiu 1977; Chowdhury 2001, Chowdhury and Islam 2003). However, in this study we consider the country of origin variable as the image of association between a particular private university in Bangladesh with international universities located in other developed countries. The variable of price has been considered as the cost of accessing the universities from the perspective of students. The rest of the variables discussed in this study are adapted from SERVQUAL. However, we avoid irrelevant



variables (for example, durability).

### **The Objective of the Study**

This study is empirical in nature. The objectives of this study are consistent with our research question. These objectives are as follows:

- 1 ) To empirically investigate service quality dimensions for the private university sector of Bangladesh.
- 2 ) To develop the service quality factors under each dimension.

### **Methodology**

#### *Manipulation of Independent Variables*

Fifteen brands of private universities are selected using the convenient sampling technique. Information with regard to each brand has been manipulated by providing subjects with some formatted information. One page of information relevant to the attributes of brands has been attached to each questionnaire. Fifty-two items have been developed under twelve dimensions. These dimensions have served as the basic structure of the perceived quality domain and the factors have served as the instruments for measuring the service quality and data gathering instruments. These dimensions and their definitions are as follows:

Reliability	Consistency of performance and dependability
Communication	Keeping informed.
Courtesy	Politeness, respect, consideration and friendliness of contact personnel.
Access	Approachability and ease of contact.
Competence	Required skills and knowledge to perform the service.
Responsiveness	Willingness and readiness of staff to provide services.
Credibility	Trustworthiness, believability, and honesty.
Security	Freedom from danger, risk, or doubt.
Understanding	Knowing the customers' needs, wants, and demands.
Tangibles	Physical evidence of the service.
Association Image	Accreditation, credit transfer facilities, affiliation, direct branches and franchising.
Price	Fees to be paid in order to receive the service.

#### *Item Generation*

First, the dimensions of service quality have been identified through empirical study. These dimensions served as the basic structure of the perceived value domain. The adapted items have been constructed from these dimensions. The following steps have been followed to measure the construct and to generate items: (1) conceptualizing the construct; (2) item generation and content validity; (3) internal scale reliability; and (4) empirical analysis of the facets.

### *Sample Unit*

Students are the primary service receivers for private universities. Therefore, sixty senior students have been interviewed for this study through a structured questionnaire. Four students from each of the fifteen private universities were selected based upon their programs and status of study.

For example, two senior students (fourth year) from the undergraduate level have been selected – one from the BBA (Bachelor of Business Administration) program and another from the CSE (Bachelor of Computer Science and Engineering) program. Similarly, two students have been selected from the graduate level – one from the MBA program and another from the M.Sc. or M.A. program. The main reason for selecting senior students is that they can form better quality perceptions regarding the education offered in private universities.

### *Data Collection*

Data were collected through structured questionnaires. Fifteen senior students in the BBA program of the Southeast University Bangladesh were employed to collect data. These students were given a short training prior to data collection.

The questionnaire has served as a data-gathering instrument. Data are gathered on a seven-point scaling technique where 1 is ‘strongly agree’ and 7 is ‘strongly disagree’. Subjects are instructed first to read very carefully the brands’ information provided in the first few pages and then to check the right boxes corresponding to the respective items. Brand information aided the subject in forming a specific image about the manipulated brand.

### *Data Analysis*

First, frequency tables and descriptive statistics are calculated to provide a better overview on results for each of the fifty-two items. Second, the factor analysis is used to produce a smaller number of quality determinants for the corresponding dimensions. The factor analysis can reduce the items or factors and can explain most of the variance. The data collected on a 7-point scale are suitable for factor analysis. We use SPSS (version 12) for analysis and interpretation of the data.

In general, factor analysis is used for a large set of data. Although there is no established rule of thumb, it is agreed that the sample size should be five times more than the number of variables (see, for example, Hatcher 1994). However, some empirical studies have paid little attention to this condition in the use of factor analyses (see, for example, Russell 2005; Chowdhury and Sultan 2005). Private universities are a fast growing sector in Bangladesh at present. This sector contributes to the development of future human capital. Moreover, stakeholders are concerned about the quality of higher education in this sector. Therefore, it is important to conduct an empirical study in order to uncover the critical service quality factors from the perspective of the service recipients and enhance them accordingly. Although this study uses a small sample size due to budget and time constraints, the findings are still significant for future exploratory and empirical studies. This study is also significant because it opens the door for further service quality measurement in Bangladesh’s private universities and explains policy-

related issues for further development in this sector.

## **Analysis and Findings**

### *Descriptive Statistics*

The seven-point scaling technique is used for gathering data, where 1=strongly agree, 2=fairly agree, 3=agree, 4=neutral, 5=disagree, 6=fairly disagree, and 7=strongly disagree. The results of the descriptive statistics based upon the scaling technique state that students agree to most of the items or factors. For example, the dimension 'reliability' has seven factors: I am receiving proper education compared to other universities in Bangladesh; my academic records are kept correctly; my payment records are kept correctly; I get accurate grades that I deserve; each semester starts at the right time; examinations are held at the right time; and results are published within the said period of time. The mean scores for these factors are between 1.46 and 2.41, which state that students' attitudes are generally between strongly agree and fairly agree. Therefore, they are satisfied with these issues. The standard errors of means are between 0.10 and 0.21, and the standard deviations are between 0.81 and 1.63 for these factors.

The dimension 'responsiveness' has three factors: my instructors give me adequate time for understanding the subject; I also receive attention from my instructors in areas other than studies; and university staff are helpful in providing services. These factors have mean scores between 2.25 and 2.76, showing that students agreed with these factors to a fair degree. Although the standard deviations vary between 1.21 and 1.44, the standard errors of means remain lower (between 0.15 and 0.18). Therefore, the descriptive statistics suggest that students are not dissatisfied. However, in order to achieve more satisfaction among students, faculty members and staff are required to provide more effective services.

The dimension 'competence' has seven factors: faculty can make the subjects understandable to me; teachers of my university are competent; university staff are skilled in their respective job areas; we receive prompt service from the staff if it is requested; my university has a research organization; teachers have research expertise; and at least one task is given to the students in a year that involves a research study. The mean scores for these factors vary between 2.25 and 3.0, except for that of the third and fifth factors. The mean scores between 2.25 and 3.0 state that the respondents are in fair agreement with these factors. However, the mean scores for the third (3.1) and fifth (3.56) factors indicate that they do not agree with these two factors. The standard deviations (between 1.05 and 1.85) for the small sample results show that respondents' attitudes are deviated from their mean scores. However, the standard errors of means remain lower. This, in turn, signifies that private universities should concentrate more on selecting competent staff and proficient faculty members. Faculty members should have both research and academic exposure.

The dimension 'access' has four factors: I can get satisfactory answers from my teacher even if I use any electronic media (e.g. email, phone call); services from the university are not delayed; our class time is suitable; and the university is placed in a suitable location. These four factors have a mean score between 1.93 and 3.05, which signifies that students have agreed with these factors. The standard deviations for the second and fourth factors are 1.67 and 1.72, respectively, which suggests that private

universities should be careful to provide required services and should have adequate space and suitable location. However, the standard errors of means are between 0.13 and 0.22.

The dimension 'courtesy' has three factors: courtesy of employees of my university is not good; courtesy of teachers at my university is not good; and the overall academic environment of my university is friendly. The mean scores are 4.9 and 5.58, for first and second factors, respectively, implying that respondents have disagreed with these factors, i.e. that students receive adequate attention from their instructors and staff. However, they have agreed with the third factor having a mean score of 2.15, meaning that overall academic environment is cordial. The standard deviations for these factors vary between 1.29 and 1.60, and the standard errors of means vary between 0.16 and 0.20.

The dimension 'communication' has five factors: I have been well informed regarding my program of study by the admission department; we are well informed regarding any changes; I am assured if I ask any help from the appropriate authority; I always get help if I ask for any help from the authority; I am satisfied with the service qualities of this university in relation to the fees that I pay. These factors have a mean score between 2.31 and 2.68, meaning that students are in fair agreement with these factors. The standard errors of means are between 0.17 and 0.21, and the standard deviations are between 1.37 and 1.70.

The dimension 'credibility' has six factors: I have selected this university as it has goodwill; I have selected this university as I find qualified faculty members here; I have selected this university as it has better facilities; I have selected this university as I was overwhelmed by the contact personnel; I have selected this university as I have my known personality (relative or acquaintance) here; and I have selected this university as its advertisements awakened my interest. The mean scores for first, second, and third items are between 2.4 and 2.46, meaning that students are in fair agreement with these items. The standard deviations for these items are between 1.18 and 1.51, and the standard errors of means are between 0.15 and 0.19. However, the mean scores for fourth, fifth, and sixth items are between 3.38 and 3.95, meaning that students agree with these items. The standard deviations for these items are between 1.43 and 1.99, and the standard errors of means are between 0.18 and 0.23. Therefore, the descriptive statistics suggest that students are more meticulous about the university's goodwill (i.e. brand positioning), qualified faculty members, and intrinsic and extrinsic facilities.

The dimension 'security' has three factors: the university has necessary measures to combat any natural disaster (e.g. fire, electric short circuit, earthquake); the university takes necessary action against unusual catastrophes (e.g. students' conflict and movements, student politics); and the security measures taken by the university are satisfactory. Although the mean value for the first factor (3.0) signifies that students agree with this issue, the standard deviation (2.10) for this factor shows that the mean score has more variance. One of the reasons for high variance, perhaps, is that the respondents may not have provided genuine answers to this issue. The mean values for the second and third factors vary between 2.41 and 2.61, meaning that students are in fair agreement. The standard deviations vary between 1.54 and 1.85, and the standard errors for these three factors vary between 0.19 and 0.27.

The dimension 'understanding' has three factors: the authority gives proper logistic support (e.g. books, canteen, recreation, classroom facilities etc.); the authority gives individual attention to students; and students are encouraged to spread the

goodwill of the university. The mean scores are between 2.8 and 3.2, which state that respondents are in agreement with these factors. The standard deviations are between 1.68 and 1.89, which indicates that the mean scores have variance. The standard errors of means are between 0.21 and 0.24.

The dimension 'tangibles' comprises six factors: the image of the campus buildings can play a role in students' decisions to select a university; adequate space can play a role in students' decisions to select a university; well furnished class-rooms can play a role in students' decisions to select a university; using multi-media in the class can play a role in students' decisions to select a university; extra-curricular activities can build the image of a university; and our faculty members and staff are smart. Although the standard deviations for these factors are between 1.21 and 1.88, the mean scores (between 1.91 and 3.08) signify that students have agreed with these factors. The standard errors of means are between 0.15 and 0.24.

The dimension 'association image' has two factors: I rate a university highly if it has credit transfer facilities with a foreign university; and the university has a link-up program with a foreign university that builds a positive image for me. The mean scores are 2.66 and 3.26, meaning that students are in fair agreement with the first factor and have agreed with the second factor. The standard deviations are 1.32 and 1.37, and the standard errors of means are 0.17 and 0.17, respectively. These statistics indicate that the association image of a private university is not insignificant to the students.

The variable 'price' has three factors: I believe that the service I receive from this university is equal to the fees I pay; in each semester the university gives tuition fee waivers to some of our students; and the university needs to revise the fee structure. The mean scores are between 1.81 and 2.96, which signify that students have agreed with these factors. The standard deviations are between 1.22 and 1.55, and the standard errors of means are between 0.15 and 0.20.

The descriptive statistics show that some of the mean scores have reasonably high variance. There are several reasons for having high variance or standard deviation in this study. First, we find that respondents are reluctant to give answers on any point of the scale if they are not familiar with a specific phenomenon and if they are given a number of choices in the questionnaire. These types of answers produce high variance. Second, the total sample size was very small compared to the population; in fact it was 0.044% of the population. Third, the private universities of Bangladesh are positioning their brands by targeting different groups in society. Each student has a different socio-economic and cultural background, and it is natural that they will not all perceive value and satisfaction in a similar manner. This helps explain the variance in the answers provided. Fourth, compared to the seven point scaling technique, a three point scaling technique can produce lower variance in a data set. However, the low scores in standard errors of means indicate that the distribution of means has low variability.

### *Factor Analysis*

The coefficient alpha for reliability analysis (Appendix, Table 1) is used in the empirical study of Chowdhury and Sultan (2005). They consider the alpha values ranging of 0.60 and above for purifying the scale's reliability. The coefficient alpha under reliability test measures the internal consistencies of the scale for the construct. However, the factor analysis in this study identifies the factors (items) and explains the patterns

of correlation within a set of observed variables. The variance in factor analysis is particularly important because it simultaneously compares several population means.

Table 2 in the Appendix shows the communalities of the variables. This table expresses how much of the variance has been accounted for by the extracted factors. For example, 72.7% of the variance in “I am receiving proper education in comparison to other universities in Bangladesh” (0.727, factor no. 1) is accounted for by the extracted factors. In contrast, it expresses lower communality in variables such as “my teachers give me adequate time for understanding the subject” (0.510, factor no. 8), “courtesy of teachers of my university is not good” (0.509, factor no. 23), “I have selected this university as the advertisements have awakened my interest” (0.509, factor no. 35), “the university needs to revise the fee structure” (0.529, factor no. 51), and “in each semester the university gives tuition fee waiver to some of our students” (0.509, factor no. 52).

However, the results of the following table (table I) show the Kaiser-Meyer-Olkin (KMO) and Bartlett’s test statistics. The KMO test measures the sampling adequacy, which should be greater than 0.5 for a satisfactory factor analysis; however the significance level of Bartlett’s test of sphericity is less than 0.05, which is significant to conduct a factor analysis.

**Table 1 KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.345
Bartlett's Test of Sphericity	sig.	0.000

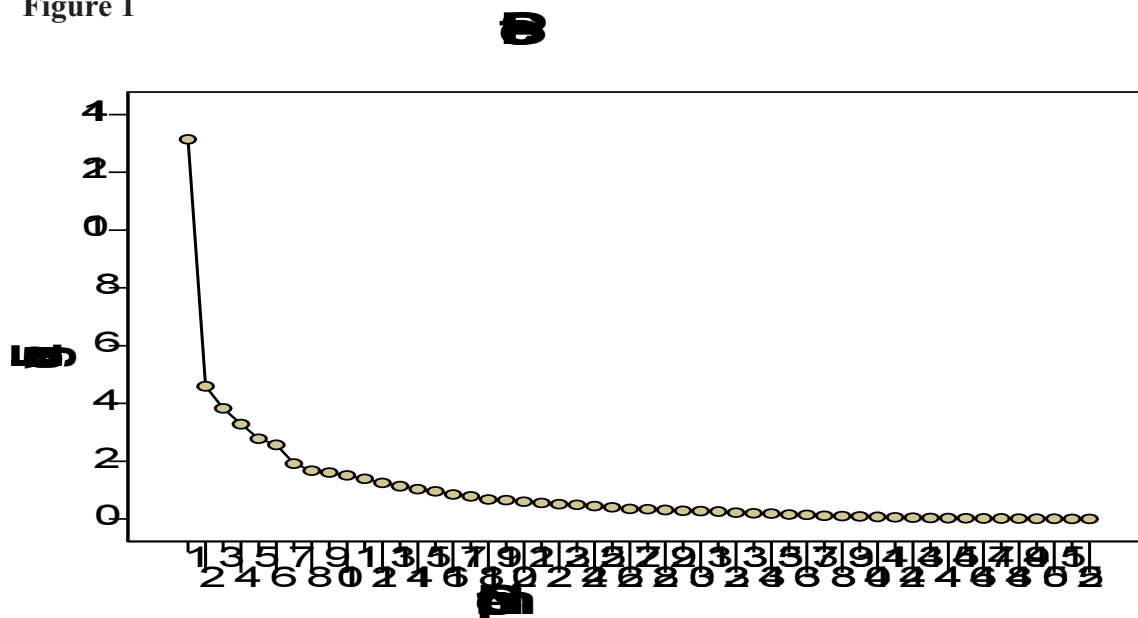
The unrotated solution using principal axis factoring produces fourteen factors considering the initial Eigen value of at least 1. Table II shows the variance explained by these extracted factors. For example, the first factor is explaining 25.26% of the total variance, the second factor is explaining 8.83% of the total variance and accordingly factor number fourteen explains 1.99% of the total variance. However, these fourteen factors can explain 80.17% of the total variance.

**Table 2 Total Variance Explained**

Factor No.	Name of the Factor	Initial Eigen values		
		Total	% of Variance	Cumulative %
1	I am receiving proper education in comparison to other universities in Bangladesh	13.137	25.263	25.263
2	My academic performance and other records are kept correctly	4.593	8.833	34.095
3	My payment and administrative records are kept correctly	3.830	7.364	41.460
4	I get accurate grades that I deserve	3.284	6.315	47.775
5	Each semester starts at the right time	2.775	5.337	53.112
6	Examinations are held at the right time	2.567	4.937	58.049
7	Results are published within the said period of time	1.917	3.686	61.736
8	My teachers give me adequate time for understanding the subject	1.669	3.210	64.945
9	I also receive attention from my teachers in areas other than studies	1.607	3.090	68.036
10	University staff are helpful in providing services	1.507	2.899	70.934
11	Faculty can make the subjects understandable to me	1.388	2.669	73.604
12	Teachers at my university are competent	1.248	2.399	76.003
13	University staff are skilled in their respective job areas	1.137	2.187	78.189
14	We receive prompt service from the staff, if it is requested	1.035	1.990	80.179
Extraction Method: Principal Axis Factoring.				

Figure 1 shows the Scree-plot. This figure shows that fourteen (having Eigen value of at least 1) of the fifty-two items are extractable of which one is a predominant factor (factor 1).

Figure 1



The correlation and significance (1-tailed) of the factor analyses state the primary relation among the variables and their significance before rotated solution. However, the matrix of loadings or the matrix of correlations between all the variables considered for this study and the extracted fourteen factors explain the loadings of fifty-two variables on the extracted fourteen variables. In general, the higher the absolute value of the loading, the more the factor contributes to the variables.

An important output of the factor analysis is the rotated factor matrix (Appendix, Table 3). The reason for the rotated factor matrix is to reduce the number of factors on which the factors under investigation have high loadings. It simplifies the interpretation of the factors. For instance, the rotated factor matrix shows that nine items (results are published within the said period of time; the security measures taken by the university are satisfactory; examinations are held at the right time; using multi-media in the class can play a role in students’ decisions to select a university; I have selected this university as it has better facilities; extra-curricular activities can build the reputation of a university; the authorities take proper steps for necessary logistics e.g. books, canteen, recreation, class-room facilities etc.; each semester starts at the right time; and our class time is suitable) are substantially loaded on factor one (i.e. I am receiving proper education in comparison to other universities in Bangladesh) and can explain 25.263% of the variance. Therefore, students’ perceptions of proper education can be explained by these nine factors. In fact, the result shows that they are the dominant factors in this study.

Ten items (the overall academic environment of my university is friendly; I have been well informed regarding my program of study by the admission department; we are well informed regarding any changes; our faculty members are smart; university staff are skilled in their respective job areas; we receive prompt service from the

staff, if it is requested; services from the university are not delayed; authorities give individual attention to students; I can get satisfactory answers from my teachers even if I use electronic media e.g. email or phone; association of my university with a foreign university builds positive image for me) are substantially loaded on factor two, namely “my academic performance and other records are kept correctly” and can explain 8.833% of the variance.

Factor three, namely “my payment and administrative records are kept correctly” can explain 7.364% of the variance. It constitutes seven items: I receive attention from my teachers in areas other than studies; teachers can make the subjects understanding to me; I get accurate grade that I deserve; my teachers give me adequate time for understanding the subject; I am satisfied with the service quality of this university in relation to price (fees), I pay; I am receiving proper education in relation to other universities of Bangladesh; and university staffs are helpful to provide services.

Factor four namely ‘I get accurate grade that I deserve’ can explain 6.315% of the variance and contains five items for example – the university takes necessary measures to fight against any natural disaster e.g. fire, electric short circuit, earthquake; the university takes necessary actions against unusual situations e.g. students' conflict, movement, and political violence; well furnished class-rooms can influence students when selecting a university; I rate the university good if it has credit transfer facilities and affiliation with a foreign university; and necessary space and convenient place can influence students when selecting a university.

Three items for example – you are being encouraged to spread the goodwill of the university; the image of the campus buildings can influence students when selecting a university; and the university is placed at a suitable location are loaded on factor five namely ‘each semester starts at the right time’ and can explain 5.337% of the variance.

Factor six namely ‘examinations are held at the right time’ can explain 4.94% of the variance and is constituted of five items for example – at least one task is given in a year that involves a research study; my university has a research organization; in each semester authority gives tuition fee waiver to some of our students; teachers of my university are competent; and teachers have research expertise.

Factor seven namely ‘results are published within the said period of time’ can explain 3.69% of the variance and is constituted of two items for example – I have selected this university as it has goodwill and I have selected this university as I have found qualified faculty members.

Two items for example – courtesy of employees of my university is not good and courtesy of teachers of my university is not good are loaded on factor eight namely ‘my teachers give me adequate time for understanding the subject’ and can explain 3.21% of the variance.

Factor nine, namely “I also receive attention from my teachers in areas other than studies”, can explain 3.09% of the variance and is constituted of three items: I have selected this university as I have a relative or an acquaintance, here; I am assured if I ask for any help from the authorities; and I always get assistance if I ask the university authorities.

Factor ten, namely “university staffs are helpful in providing services”, elucidates two factors: my academic performance records are kept correctly and my administrative records are kept correctly. This factor can explain 2.9% of the total variance.



Factor eleven, namely “teachers can make the subjects understandable to me” explains one item, i.e. I have selected this university as the advertisements have awakened my interest, and can explain 2.7% of the variance.

Factor twelve, namely “teachers of my university are competent” can explain two items: the university needs to revise the fee structure and I believe that the service I receive from this university is quite equal to the fees I pay. It can explain 2.4% of the total variance.

Factor thirteen, namely “university staff are skilled in their respective job areas” can explain 2.18% of the total variance.

Factor fourteen, namely “we receive prompt service from the staff, if it is requested” explains one item – I have selected this university as I was overwhelmed by the contact personnel – and can explain 1.99% of the variance.

Finally, factor correlation or transformation matrix (Appendix, Table 4) shows correlation among the extracted factors. The transformation matrix shows that item number eight, namely “my teachers give me adequate time for understanding the subject”, and fourteen, namely “we receive prompt service from the staff, if it is requested” have the highest correlation of 0.826 in the matrix and among all the items. In contrast, item number ten, namely “university staffs are helpful in providing services” and thirteen, namely “university staffs are skilled in their respective job area” have the lowest correlation of 0.333 in the matrix but the highest among items. This signifies that students are satisfied with the services received from their teachers but not satisfied with the services received from the staff.

The coefficient alpha values of the reliability analysis (Appendix, Table 1) show that the extracted ten out of the fourteen factors have high coefficient alpha values ranging from 0.60 to 0.858 and the rest of the four factors have low alpha values of less than 0.60. Therefore, the factor analysis in this study convincingly suggests that students of the private universities of Bangladesh perceive quality of education with these extracted fourteen factors in three dimensions, namely reliability, responsiveness, and competence.

## **Conclusion**

The purpose of this study was to examine the service quality dimensions and develop context-based service quality factors in the value-based education industry of Bangladesh. The study focused a sample of private universities; therefore, the findings are more related to these particular service organizations. This study has ample scope for application in managerial and policy settings. The findings suggest some important academic and administrative aspects which policy makers and managers should spotlight. The academic and administrative aspects are the key issues to the students; however, the development of a good academic and administrative environment requires proper infrastructure, teachers’ training and further education, and laws and regulations. Therefore, policy makers and managers should also be concerned with these issues.

The theoretical findings suggest that private universities are suffering from inadequate infrastructure, for example not owning their own campus, impoverished libraries and laboratories, lack of adequate and qualified teachers, and a lack of fully-fledged rules and regulations required for smooth running of academic programs. However, this study points out the main factors that can be used to measure the service

qualities of this industry as perceived by one of the important stakeholders. The empirical results of this study are consistent with the theoretical findings. The factors developed for each of the dimensions are based on the present context of this value-based service industry and have been adapted accordingly.

‘Reliability’ has been defined as the consistency of performance and dependability. Therefore policy makers, managers, and educators should consider the students’ perceptions of quality and delivered value. Students always compare service quality among themselves. They are the walking salespeople for their respective universities. Therefore, perceived value delivered to the students must be equal or greater than perceived quality. Academic and administrative staff should be competent enough to provide the necessary services, particularly in the fields of teaching, administrative and payment-related matters. Students also define reliability as whether their universities are maintaining the academic calendar strictly or not. Moreover, this study also finds that perceived quality is based on the grading system and the grades that students receive.

‘Responsiveness’ is defined as the willingness and readiness of staff or the organization to provide education services. The managerial implications of this factor are, for instance, that faculty members should provide adequate time to students to understand the subject, and that students should receive attention from faculty members in areas other than studies. Another important item is that the university staff should be competitive and more helpful in their provision of services.

The dimension ‘competence’ is defined as the required skills and knowledge to perform the services. Hiring competent and professional teachers and staff can ensure quality teaching and prompt delivery of services. The factor analyses show that the dimension of competence includes whether instructors can make the subjects understandable to the students, the competencies of the faculty members and staff in their respective job areas, and finally whether students receive prompt service from the university, if it is requested. The findings suggest that faculty members should be proficient enough academically and they should have research and professional expertise. Staff, on the other hand, should be competent in their respective job areas. The commonality is that they both should be accessible to the students in order to provide educational and administrative services.

This study provides guidelines to develop a quality control tool for the higher education industry in Bangladesh. It is clear that this study can contribute to frameworks for measuring the service quality of the value-based higher education sector in Bangladesh. We used a small sample size due to budget and time constraints. However, the results show that the significance level of the Bartlett’s test of sphericity is less than 0.05, which is sufficiently significant to conduct a factor analysis. In addition, the trivial standard errors of mean for each of the factors imply that the mean distribution has lower variability. Thus, the results of this study are fairly unimpeachable. Nevertheless, a broader study with a larger sample would further purify and generalize the service quality factors for universities in Bangladesh.

The students, teachers, and staff are the major forces of these value-based service chain activities. Therefore, future research should include sample units from these strata. The field study suggests that respondents feel fatigue in 7-point scaling technique and with too many factors and supplementary readings. Therefore, a three point-Likert type scale, less factors and supplementary readings would be of useful for future studies.

This paper could be further refined through ANOVA. However, the use of the more sophisticated computer software AMOS (Analysis of Moment Structures) can be more effective to build a behavioral model. AMOS can create more realistic models than standard multivariate statistics or multiple regression models. Therefore, researchers have scope to purify and to develop the construct especially for the educational institutions.

### Acknowledgements

We wish to thank Prof. Dr. Dipendra Sinha for his comment on the earlier draft of this paper. We also thank the anonymous reviewers and editors for their comments and help in preparing this article.

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## Appendix

**Table 1: Measurement of Internal Consistency of the Construct through Coefficient Alpha**

No.	Dimensions	Number of Items	Coefficient Alpha Values Considering all the Items	Coefficient Alpha Values After Deleting Items	Number of Items	Factor Loadings of Items on Dimensions to which They Belong
1.	Reliability	07	0.7404	0.7844	05	Re1 0.593 Re3 0.737 Re5 0.773 Re6 0.846 Re7 0.761
2.	Responsiveness	03	0.6832	0.6832	03	Res8 0.833 Res9 0.858 Res10 0.664
3.	Competence	07	0.7995	0.7670	05	Com11 0.690 Com12 0.852 Com15 0.738 Com16 0.830 Com17 0.516
4.	Access	04	0.4038	0.6793	02	Ac18 0.747 Ac19 0.747
5.	Courtesy	03	0.1989	0.7299	02	Cou22 0.758 Cou23 0.758
6.	Communication	05	0.7123	0.7508	03	Co26 0.659 Co27 0.893 Co28 0.902
7.	Credibility	06	0.4469	0.8609	02	Cre31 0.937 Cre32 0.937
8.	Security	03	0.5529	0.7525	02	Se36 0.795 Se37 0.795
9.	Understanding	03	0.4441	0.6139	02	Un39 0.665 Un40 0.665
10.	Tangibles	06	0.7264	0.8420	03	Tan44 0.838 Tan45 0.928 Tan46 0.871
11.	Country Image	02	0.6955	0.6955	02	C.Im48 0.730 C.Im49 0.730
12.	Price	03	-0.1617	0.3634	02	Pr50 0.784 Pr52 0.784

Source: Chowdhury and Sultan (2005:184-185) .

**Table 2: Communalities**

No.	Factors (Items)	Initial	Extraction
1	I am receiving proper education in comparison to other universities in Bangladesh	0.944	0.727
2	My academic performance and other records are kept correctly	0.949	0.908
3	My payment and administrative records are kept correctly	0.953	0.745
4	I get accurate grades that I deserve	0.975	0.773
5	Each semester starts at the right time	0.945	0.748
6	Examinations are held at the right time	0.978	0.697
7	Results are published within the said period of time	0.963	0.856
8	My teachers give me adequate time for understanding the subject	0.946	0.510
9	I also receive attention from my teachers in areas other than studies	0.919	0.774
10	University staff are helpful in providing services	0.917	0.576
11	Teachers can make the subjects understandable to me	0.961	0.798
12	Teachers of my university are competent	0.965	0.695
13	University staff are skilled in their respective job areas	0.979	0.904
14	We receive prompt service from the staff, if it is requested	0.967	0.694
15	My university has a research organization	0.976	0.712
16	Teachers have research expertise	0.954	0.718
17	At least one task is given in a year that involves field survey and report writing	0.957	0.624
18	I can get satisfactory answer, even if I email or make a phone call to my teacher	0.978	0.607
19	Services from the university is not delayed	0.963	0.760
20	Our class time is convenient and suitable	0.973	0.682
21	The university is placed at a convenient or suitable location	0.902	0.717
22	Courtesy of employees of my university is not good	0.969	0.829
23	Courtesy of teachers of my university is not good	0.952	0.509
24	The overall academic environment of my university is friendly	0.966	0.828
25	I have been well informed regarding program, courses, and fees by the admission dept.	0.968	0.923
26	We are well informed regarding any changes, if any	0.859	0.641
27	I am reassured if I ask for any academic or administrative help from the authorities	0.985	0.819
28	I always get help if I ask for any academic or administrative help from the authorities	0.977	0.767
29	I am satisfied with the service quality of this university in relation to price (fees) I pay	0.967	0.756
30	I have selected this university as it has goodwill	0.916	0.625
31	I have selected this university as I have found qualified faculty members	0.978	0.899
32	I have selected this university as it has better facilities	0.954	0.786
33	I have selected this university as I was overwhelmed by the contact personnel	0.967	0.787
34	I have selected this university as I have my known personality (relative or acquaintance), here.	0.913	0.663
35	I have selected this university as the advertisements have awakened my interest	0.943	0.509
36	The University has necessary measures to combat fire, electric short circuit and others	0.965	0.728
37	The University takes necessary action against student conflicts, movements, and politics	0.944	0.736
38	The security measures taken by the university are satisfactory	0.984	0.704
39	The authorities take proper steps for books, canteen, recreation, class-room facilities etc.	0.957	0.722
40	The authorities gives individualized attention to students	0.960	0.602
41	You are being encouraged to spread the name and fame of the university	0.965	0.900
42	The image of the campus buildings can influence students when selecting a university	0.948	0.692
43	Necessary space and convenient location can influence students when selecting a university	0.917	0.643
44	Well furnished class-rooms can influence students when selecting a university	0.991	0.908
45	Using multi-media in the class can influence students when selecting a university	0.951	0.827
46	Extra-curricular activities can build the image of a university	0.968	0.822
47	Our faculty members and staff are well groomed	0.912	0.657
48	I rate the University good if it has Credit transfer facilities and affiliation with foreign university	0.960	0.826
49	Association of my university with a foreign university builds a positive image in me	0.982	0.810
50	I believe that the service I receive from this university is quite equal to the fees I pay	0.937	0.829
51	The university needs to revise the fee structure	0.907	0.529
52	In each semester the university gives tuition fee waivers to some of our students	0.897	0.509
Extraction Method: Principal Axis Factoring.			

**Table 3: Rotated Factor Matrix**

Total Factors	Extracted Factor													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>Results are published within the said period of time</i>	<b>0.849</b>	0.272	0.160		-0.113									
The security measures taken by the university are satisfactory	<b>0.732</b>	0.138		0.144	-0.146			0.218		0.149	-0.108			
<i>Examinations are held at the right time</i>	<b>0.712</b>	0.158	0.196		-0.132				0.256					0.113
Using multi-media in the class can influence students when selecting a university	<b>0.661</b>	0.165		0.359		0.254	0.254	0.168			0.108		-0.122	-0.133
I have selected this university as it has better facilities	<b>0.649</b>	0.160	0.234		0.169	0.241	0.339	0.117	-0.137			0.112		0.157
Extra-curricular activities can build image of a university	<b>0.640</b>	0.148	-0.153	0.217	0.201	0.321		0.284	-0.193	0.122				-0.169
The authorities takes proper steps for books, canteen, recreation, class-room facilities etc.	<b>0.548</b>	0.302		-0.154		0.141	0.254	0.148		0.160	0.219	0.108	0.186	-0.272
<i>Each semester starts at the right time</i>	<b>0.516</b>	0.249	0.127	-0.213		0.107	0.249		0.287	0.198	0.106		0.364	-0.129
Our class time is convenient and suitable	<b>0.352</b>	0.337	0.112	-0.270	0.160	0.193	0.133		0.340	0.138	-0.274	0.179	-0.135	-0.110
The overall academic environment of my university is friendly	0.151	<b>0.809</b>	0.153				0.134	0.141			0.256		-0.108	
I have been well informed regarding program, courses, and fees by the admission dept.	0.490	<b>0.757</b>								0.149	-0.149	0.118	-0.167	
We are well informed regarding changes, if any	0.189	<b>0.644</b>	0.288			0.135			0.137		-0.105			0.171
Our faculty members and staff are well groomed	0.162	<b>0.634</b>	0.199	0.149	0.239			0.208	0.157		0.145			
<i>University staff are skilled in their respective job area</i>	0.182	<b>0.610</b>	0.206		0.137	0.315	-0.317	0.246	0.253			-0.212		-0.232
<i>We receive prompt service from the staff, if it is requested</i>	0.129	<b>0.510</b>	0.369	-0.189		0.111		0.141	0.390		0.124	-0.166		
Service from the university is not delayed	0.254	<b>0.495</b>		0.161	0.175	0.158		0.293	-0.104	0.149	-0.211		0.434	-0.100
The authorities give individualized attention to students	0.173	<b>0.482</b>	0.274	0.360	0.120		0.192	-0.116	0.117		0.142			-0.167
I can get a satisfactory answer, even if I email or make a phone call to my teacher		<b>0.434</b>	0.289	0.290		0.173		0.208				0.129	0.373	
Association of my university with a foreign university builds a positive image in me	0.169	<b>0.409</b>	-0.252	0.338			0.373	-0.167		-0.101	0.336	0.252	0.265	0.100
<i>I also receive attention from my teachers in areas other than studies</i>		0.111	<b>0.812</b>				0.137			0.132		0.103	-0.157	
<i>Teachers can make the subjects understandable to me</i>	0.116	0.416	<b>0.735</b>			0.104			0.108	0.148			0.104	-0.115
<i>I get accurate grades that I deserve</i>	-0.197	0.292	<b>0.704</b>	0.112		-0.276				-0.110			-0.107	0.162
<i>My teachers give me adequate time for understanding the subject</i>	0.308		<b>0.605</b>	-0.113										
I am satisfied with the service quality of this university in relation to the price (fees) I pay			<b>0.554</b>		0.117			-0.255		-0.147	-0.171	-0.510		-0.134
<i>I am receiving proper education in comparison to other universities of Bangladesh</i>	0.169		<b>0.451</b>	0.209	-0.223	0.246	0.389		0.157	0.368			-0.124	
The University has necessary measures to combat fire, electric short circuit and others		0.139		<b>0.754</b>		0.164	0.108			0.190	-0.147		0.137	
The University takes necessary actions against student conflicts, movements, and politics				<b>0.745</b>		0.295		0.111	0.213					0.104

Total Factors	Extracted Factor													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Well furnished class-rooms can influence students when selecting a university	0.333	0.170		<b>0.607</b>	0.361	0.256					0.333	0.101	-0.211	-0.129
I rate the University good if it has Credit transfer facilities and affiliation with foreign university	0.139			<b>0.586</b>			0.552				0.217	0.185	-0.222	
Necessary space and convenient place can influence students when selecting a university	0.137		0.298	<b>0.531</b>	0.387	-0.162					-0.174	-0.166		
You are being encouraged to spread the name and fame of the university				0.305	<b>0.837</b>			0.151						-0.224
The image of the campus buildings can influence students when selecting a university		0.123			<b>0.762</b>	-0.119		0.107						0.205
The university is placed at a convenient or suitable location	-0.123		0.249	-0.111	<b>0.504</b>		-0.186	-0.159		-0.102	-0.278	0.245	-0.346	-0.157
At least one task is given in a year that involves field survey and report writing	0.205			0.171	-0.150	<b>0.642</b>		-0.128	0.101			0.132		0.245
My university has a research organization	0.294		0.250	0.264	-0.221	<b>0.488</b>	0.211		0.170		-0.280	-0.176		-0.124
In each semester the university gives tuition fee waivers to some of our students				0.227	0.152	<b>0.473</b>	0.144	0.154		0.223		-0.275		-0.155
<i>Teachers of my university are competent</i>	0.180	0.404	0.378	0.258	-0.107	<b>0.411</b>		0.181		0.117				0.220
Teachers have research expertise	0.171	0.333	0.352	0.152	-0.196	<b>0.406</b>	0.136	0.108			-0.385	0.138	0.148	
I have selected this university as it has goodwill	0.295		0.171				<b>0.668</b>				-0.124			
I have selected this university as I have found qualified faculty members	0.411	0.106	0.291		0.319	0.441	<b>0.494</b>	0.117			0.114			0.234
Courtesy of employees of my university is not good	-0.219	-0.313		0.125			-0.171	<b>-0.758</b>			0.150			0.156
Courtesy of teachers in my university is not good	-0.184			-0.135	-0.116			<b>-0.638</b>			0.114			
I have selected this university as I have my known personality (relative or acquaintance), here.		0.142		0.142	0.145			-0.198	<b>0.714</b>				-0.158	0.116
I am reassured if I ask for any academic or administrative help from the authorities	0.198	0.289	0.316	0.117	0.230	0.115	0.341	0.179	<b>0.565</b>	0.113				0.154
I always get help if I ask for any academic or administrative help from the authorities	0.158	0.263	0.468	0.214		0.178	0.239	0.194	<b>0.477</b>				0.221	
<i>My academic performance and other records are kept correctly</i>	0.179		0.169	0.168		0.140				<b>0.878</b>				
<i>My payment and administrative records are kept correctly</i>	0.493		0.339	-0.106			0.178	0.203		<b>0.521</b>		0.130		
I have selected this university as the advertisements awakened my interest		0.173						-0.243			<b>0.621</b>			0.130
The university needs to revise the fee structure	0.267			0.108	0.101		0.153					<b>0.603</b>		-0.157
I believe that the service I receive from this university is quite equal to the fees I pay		<b>0.491</b>	0.311	0.186	0.153		0.213	-0.239	0.185	-0.135		-0.519		
<i>University staff are helpful in providing services</i>	0.295	0.229	<b>0.308</b>		0.138			0.141	0.203				-0.491	0.103
I have selected this university as I was overwhelmed by the contact personnel					0.114				0.131		0.133			<b>0.841</b>
Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization.														
a. Rotation converged in 24 iterations.														

**Table 4: Factor Correlation or Transformation Matrix**

Factor	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	<b>0.542</b>	0.517	0.386	0.250	0.109	0.266	0.232	0.162	0.189	0.157	0.007	0.002	0.057	-0.020
2	-0.462	0.329	<b>0.604</b>	-0.215	0.080	-0.163	-0.250	-0.147	0.203	-0.128	-0.124	-0.278	0.004	0.003
3	-0.300	0.114	-0.237	<b>0.651</b>	0.490	0.053	-0.015	-0.142	0.158	-0.203	0.225	-0.078	-0.094	0.149
4	-0.190	-0.460	0.405	<b>0.449</b>	-0.358	0.256	0.299	-0.219	-0.042	0.106	-0.173	-0.103	0.033	-0.024
5	0.167	0.153	-0.077	-0.138	-0.417	-0.021	0.155	-0.589	0.289	-0.258	<b>0.396</b>	0.060	-0.113	0.236
6	0.198	-0.379	0.281	-0.145	<b>0.452</b>	-0.266	0.183	-0.136	0.196	0.068	-0.024	0.254	-0.531	-0.018
7	0.140	-0.190	-0.164	-0.149	0.024	<b>0.603</b>	-0.364	0.016	0.406	-0.111	-0.304	-0.246	-0.242	0.097
8	-0.089	-0.177	0.114	-0.149	0.112	0.039	0.082	0.222	0.122	0.193	0.118	0.082	0.317	<b>0.826</b>
9	0.138	0.107	0.129	0.352	-0.278	-0.186	-0.561	0.019	-0.190	-0.014	-0.201	<b>0.385</b>	-0.283	0.312
10	-0.324	0.080	-0.131	0.038	-0.152	0.015	-0.027	0.071	<b>0.589</b>	0.378	-0.033	0.525	0.104	-0.252
11	-0.031	-0.034	0.070	-0.023	-0.005	0.152	-0.319	-0.091	-0.157	<b>0.633</b>	0.567	-0.238	-0.226	-0.071
12	0.036	0.082	-0.010	-0.127	<b>0.339</b>	0.278	-0.112	-0.629	-0.289	0.172	-0.245	0.305	0.329	0.002
13	0.286	-0.078	-0.194	0.177	-0.005	-0.511	-0.102	-0.239	0.277	<b>0.333</b>	-0.290	-0.427	0.242	0.044
14	0.252	-0.365	0.254	0.088	0.084	-0.034	-0.398	0.047	0.165	-0.317	0.365	0.119	<b>0.474</b>	-0.250

Extraction Method: Principal Axis Factoring.  
 Rotation Method: Varimax with Kaiser Normalization.