



Students' Satisfaction on Academic Services in Higher Education: Public and Private Universities of Bangladesh

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Authors' contributions

This work was carried out in collaboration between both authors. Author FS designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author SN managed the literature searches. Both authors read and approved the final manuscript

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ABSTRACT

Student satisfaction is an outcome of the insight of service quality provided by the university. Government of Bangladesh introduces private universities in 1992 because of huge demand in higher education. Currently, there are 103 private universities, forty-three public universities and three international universities in Bangladesh. But it is a matter of sorrow that, universities are increasing day by day but the qualities of universities are not satisfactory. This study is a comparative study conducted on two universities (one is Rangamati Science and Technology University (public) and another one is Premier University (private)). The study was pointed out academic services in the private and the public universities. Based on the review of literature a questionnaire was developed and it was distributed among 120 students. The total 120 respondents have been drawn probabilistically from 2 universities. Descriptive analysis, factor analysis have been used to analyze the data and to draw the findings. It has been found that satisfaction level of the private university students is not up to the mark. Finally, few suggestions have made to increase satisfaction of the university students in Bangladesh. Results revealed that students from Rangamati

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Science and Technology university (public) and Premier University (private) hold different opinion whether their expectation met or not.

Keywords: Student satisfaction; academic services; public university and private university of Bangladesh.

1. INTRODUCTION

Increasing demands for higher education along with limited public resources have led to the introduction and growth of private university. The concept of student as a customer and student satisfaction has also become relevant for higher education institutes in developing countries [1]. In Bangladesh there are three different types of universities one is public which is owned by the government, second one is private and last one is international, which is operated and funded by international organizations. The government of Bangladesh through its university Grants Commission allowed private universities to operate in 1992 to meet a huge demand for higher education in the country. It is believed that private universities provide more academic services than that of public university in some particular aspects. However the reality is totally different. Education cost, hall facility, extra curriculum activities, different industrial tours etc. are the factors considering for delivering quality education. On the other side in Public University faces politics, session jam and accommodation problem. This study aims to find out student satisfaction and expectations' level.

2. LITERATURE REVIEW

2.1 Student Satisfaction

Satisfaction as significance of the execution of needs and want of a specific service and the awareness of the quality of that service. According to O' Driscoll [2], Parahoo et al. [3], assuring quality education and improvement of academic program higher education institution take into account student satisfaction as one of key features. Mukhtar U., Anwar S, Ahmed U and Baloch MA [4] found that, student satisfaction can be defined as a function of relative level of experiences and perceived performance about educational service. Sultan and Wong [5] claimed that students witness quality education from the expressive result of their view on various services that the school provides. Ensuring quality consolation and development of their program higher education institution take into account student satisfaction as one of major elements [2,3]. Although they

were said that the two are connected and supposed quality leads to satisfaction. A same opinion is said by Dado et al. [6] that perception of quality would aid in retentive students as it delivers them satisfaction.

2.2 Factors Influencing Student Satisfaction

Studies conducted by different researchers have suggested different factors influencing student satisfaction. In Bangladesh various scholars research on the quality of education and indicators of quality education in the private universities in Bangladesh. Nuamah [7], argued that greater satisfaction relies on library facility, contract with teacher, reading materials, size of classroom, official services, even satisfaction of students' effect on retention and financial capacity. On the other hand, the level of satisfaction sometimes depends on governing body of the university e.g. Public or private. Bangladeshi private university student are more satisfied compare to public university [8]. University image is a denominator which has significant outright impact on students' desire (Shahsavar and Sudzina, 2017). Sadrul Hyda et al. [9] found his survey that most of the students are satisfied with the services provided by the private universities. They take into account several independent variables such as; examination and other course works, time provided by teaching staff, class time, course curriculum, computer labs facilities, class rooms, library condition, the tuition fees, location of campus, social acceptability extracurricular activities.

2.3 Student Satisfaction in Public and Private Higher Education

Satisfaction level of public and private universities are totally different since the budget of private higher education institutions depends completely on tuition fees paid by students said by Khaldi and Khatib [10]. Since students have to pay for the educational services themselves, expectations of students in the private universities might be higher claimed by Manzoor [11], Shah, Nair and Bennett [12], Bezuidenhout and De Jager [13], Bekhet, AL-Alak and El-refae

[14]. Students in private universities are more satisfied than those in public universities according to Ali [15], Chapper, Campani, Paiva, Assis, Garcia and Abreu e Silva [16], Mazumder [1]. Khaldi and Khatib [10] said that students in public higher education in Kuwait had a more positive overall attitude towards their university, but had lower perceptions of the quality of factors influencing their attitude. [17] The questions were developed using Noel-Levitz student satisfaction index (SSI), a reliable instrument widely used by a large number of universities in the USA to improve student satisfaction. Shanahan and Gerber [18] found that satisfaction as significance of the execution of needs and want of a specific service and the awareness of the quality of that service.

2.4 Research Gaps

This research tries to find out to whether private or public universities in Bangladesh provide better educational services. Consequently, this study was not anticipated to estimate student satisfaction as a whole but rather to investigate the research gap between expectations and satisfaction levels for each service as determinant, we will provide recommendations for betterment at each university based on the university type.

3. OBJECTIVES

3.1 Broad Objective

The main objective of this paper is to identify the Students' Satisfaction level on Academic Services in Higher Education, both private and public universities in Bangladesh.

3.2 Specific Objectives

The specific objectives of this study are as follows:

- To determine the student's satisfaction level in public and private universities in Bangladesh.

- To identify the important factors for academic excellence.
- To suggest some policy recommendations related to students satisfaction.

4. METHODOLOGY

4.1 Nature of the Study

This study is a descriptive research where data have been collected to find out the student's satisfaction on academic services in higher education in Bangladesh.

4.2 Sample Size and Sample Selection Procedure

The sample size for the research was 120. Judge mental sampling technique was used. Both Public and Private universities of Bangladesh were selected for the study.

4.3 Data Collection Procedure and Instruments

For the research and data analysis purposes both the primary and secondary data were collected. The survey questions were prepared based on the Noel-Levitz student satisfaction index (SSI). Then the primary data were collected through these survey questions. The researchers were actively involved in data collection. Secondary data have been collected from the existing literature and different published reports in the said field and also from the internet.

4.4 Scaling Technique

For the research and data analysis purposes we have been using 5 point Likert Scale, which is a part of judgemental sample Technique. (Where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral (Neither agree nor disagree), 4 = Agree, and 5 = Strongly Agree).

Chart 1. Research work design

| | | | |
|----|---------------------|--|---|
| 1. | Target Population | Elements Sampling unit Extent Time | Students of public and private universities in Bangladesh. Student Public and private universities in Bangladesh. 2020 |
| 2. | Nature of the study | Descriptive research. | |
| 3. | Sampling technique | Judgemental Sampling. | |
| 4. | Scaling technique | 5 point likert scale, which was used for my study. | |
| 5. | Data used | Primary and secondary | |
| 6. | Sample size | 120 | |

5. RESULTS AND DISCUSSION

| | |
|---|---|
| X ₁ : Professors care. | X ₂ : Major Field. |
| X ₃ : Fair and unbiased assessment. | X ₄ : Timely feedback. |
| X ₅ : Counseling hour. | X ₆ : Professor understand students. |
| X ₇ : Content of the courses. | X ₈ : Growth. |
| X ₉ : Assessment and course placement. | X ₁₀ : Varieties of the courses. |
| X ₁₁ : Canteen facilities. | X ₁₂ : Cost of the program. |
| X ₁₃ : Campus staff. | X ₁₄ : Residence hall facilities. |
| X ₁₅ : Lab facilities. | X ₁₆ : Library Resources. |
| X ₁₇ : Infrastructure facilities. | X ₁₈ : Feeling proud. |
| X ₁₉ : Extra curriculum activities. | X ₂₀ : Involvement with work. |
| X ₂₁ : Take differences. | |

5.1 Descriptive Statistics

The table (Table 1) shows that the mean, standard deviation and number of respondents (N) who participated in the survey are given.

From the Table 1 have observed that the mean of the residence facility, participation of students in intercollegiate activities, professor's care and sufficient weekend facilities, infrastructure facility etc. in public universities are greater than that of private universities.

On the other hand, Cost of the program is important factor in higher education. The above table shows that the mean of the cost of the program in public universities is much less than that of private universities because the public universities are state founded. In my study, I have observed that library and lab facilities in private universities are greater than of public universities. It may be happened because private universities recently invested more resources on latest facilities to their students and which will enrich their library and lab facilities.

5.2 Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

The KMO measures the sampling adequacy which should be greater than 0.5 for a satisfactory factor analysis is to proceed. If any variables have a value less than 0.5, consider falling one of them from the analysis. The off-diagonal elements should all be very small (close to zero) in a good model. In the (table 3) below, the KMO measure is 0.691 and 0.604 respectively. The value 0.5 for KMO test is minimum and hardly accepted, values between 0.7-0.8 are acceptable and values above 0.9 are excellent. Bartlett's test is an indication of the

strength of the relationship among variables. An identity matrix is a matrix in which all of the diagonal elements are 1 and all of the diagonal elements are 0. From the table, we can see that Bartlett's tests of sphericity are significant That is, its associated probability is less than 0.05. In fact, it is actually 0.000, i.e. the significance level is small enough to reject the null hypothesis. This means that correlation matrix is not an identity matrix.

The correlation matrix reveals that variable X₄ (Timely feedback) is positively and significantly correlated with X₃ (Fair and unbiased assessment), X₈ (Growth), X₆ (Professor understand students) and X₉ (Assessment and course placement) and their degrees of correlation are 0.706, 0.535 and 0.500 respectively. Variable X₁₀ (Varieties of courses) is found to have positive and very significant relationship with variables X₉ (Assessment and course placement), X₁₄ (Residential Hall facilities) and X₁₃ (Campus staff) and their magnitude of correlation are 0.510.

Variable X₁₅ (Lab facilities) is found have significantly correlated with variable X₁₄ (Residential Hall facilities) in the magnitude of 0.701. Variable X₁₆ (Library resources) is positively and significantly correlated with variables X₂ (Major Fields), X₁₇ (Infrastructure facilities) is significantly correlated with X₁₆(Library resources) and X₁₈(Feeling proud). X₂₁(Take differences) with X₁ (Professors care) positively correlated.

In Table 4 we have seen that different correlation and significant level in the private university. The variable X₆(Professor understand students) is positively and significantly correlated with X₅ (Counseling hour). The correlation matrix reveals that variable X₇ (Contents of the courses) is

positively and significantly correlated with X₅ (Counseling hour), X₇ (Contents of the courses), and their degrees of correlation are 0.527, 0.629 and 0.756 respectively.

The next item shows all the factors extractable from the analysis along with their eigenvalues, the percent of variance attributable to each factor and the cumulative variance of the factor and the previous factors. The first factor accounts for 37.281% of the variance, the second 9.852%, the third 7.389%, the fourth 7.133%, the fifth 6.028%

and the sixth 4.931%. All the remaining factors are not significant.

The next item shows all the factors extractable from the analysis along with their eigenvalues, the percent of variance attributable to each factor and the cumulative variance of the factor and the previous factors. The first factor accounts for 21.579% of the variance, the second 11.149%, the third 9.488%, the fourth 7.374%, the fifth 6.523% and the sixth 6.346%. All the remaining factors are not significant.

Table 1. Comparison of means and standard deviations for the public and private universities according to different factors

| Factors | Descriptive Statistics | | | |
|--|------------------------|---------|----------------|---------|
| | Means | | Std. Deviation | |
| | Public | Private | Public | Private |
| Professors care about me as an individual. | 3.2833 | 3.3333 | 1.19450 | 1.23050 |
| The instruction in my major field is excellent. | 3.4833 | 3.3833 | 1.08130 | 1.16578 |
| Professors are fair and unbiased in their treatment of individual students. | 3.5333 | 3.0500 | 1.24147 | 1.17061 |
| Professors provide timely feedback about student progress in a course. | 3.5667 | 3.5167 | 1.25370 | 1.09686 |
| Professors are usually available after class and during office hours. | 3.6167 | 3.5500 | 1.07501 | 1.24090 |
| Professors understand of students' unique life circumstances. | 3.2667 | 3.5167 | 1.16250 | 1.28210 |
| The content of the courses with in my major is valuable. | 4.0000 | 3.8500 | .90198 | 1.19071 |
| I am able to experience intellectual growth here | 3.4667 | 3.5833 | 1.24147 | 1.07816 |
| The assessment and course placement procedures are reasonable. | 3.4000 | 3.2833 | 1.25144 | 1.10610 |
| There is a good variety of courses provided on this campus | 3.5167 | 2.7500 | 1.40811 | 1.14426 |
| Cost as factor in decision to admission/enroll. | 3.5833 | 3.7333 | 1.25268 | 1.17699 |
| The campus staffs are caring and helpful. | 3.4667 | 3.1500 | 1.25505 | 1.38790 |
| Residence hall regulations are reasonable. | 3.3333 | 2.0333 | 1.23050 | 1.41381 |
| Computer labs are adequate and accessible. | 2.8167 | 3.2500 | 1.39602 | 1.14426 |
| Library resources and services are adequate. | 2.8333 | 2.9667 | 1.18130 | 1.13446 |
| On the whole, the campus is well-maintained. | 2.9500 | 2.9000 | 1.15605 | 1.16007 |
| I feel a sense of pride about my campus. | 3.3000 | 2.6833 | 1.31871 | 1.28210 |
| There are a sufficient number of weekend activities for students. | 3.3833 | 2.9000 | 1.20861 | 1.37409 |
| Males and females have equal opportunities to participate in intercollegiate activities. | 4.0833 | 4.0667 | .82937 | .82064 |
| I can easily get involved in campus organizations. | 4.0167 | 2.8333 | .85354 | 1.23737 |
| Professor take into consideration student differences as they teach a course | 3.6667 | 3.6333 | 1.08404 | 1.07304 |

Table 2. The Kaiser-Meyer-Olkin (KMO) and Bartlett's test for public and private university

| | Public university | Private university |
|--|-------------------|--------------------|
| Kaiser-Meyer-Olkin measure of sampling adequacy. | 0.691 | 0.604 |
| Bartlett's test Approx. Chi-square | 789.120 | 425.630 |
| df | 210 | 210 |
| Sig. | 0.000 | 0.000 |

Table 3. Correlation of public universities data

| | X ₁ | X ₂ | X ₃ | X ₄ | X ₅ | X ₆ | X ₇ | X ₈ | X ₉ | X ₁₀ | X ₁₁ | X ₁₂ | X ₁₃ | X ₁₄ | X ₁₅ | X ₁₆ | X ₁₇ | X ₁₈ | X ₁₉ | X ₂₀ | X ₂₁ | |
|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|
| X ₁ | 1.000 | | | | | | | | | | | | | | | | | | | | | |
| X ₂ | .680 | 1.000 | | | | | | | | | | | | | | | | | | | | |
| X ₃ | .342 | .423 | 1.000 | | | | | | | | | | | | | | | | | | | |
| X ₄ | .525 | .632 | .706 | 1.000 | | | | | | | | | | | | | | | | | | |
| X ₅ | .337 | .381 | .321 | .403 | 1.000 | | | | | | | | | | | | | | | | | |
| X ₆ | .274 | .287 | .323 | .360 | .341 | 1.000 | | | | | | | | | | | | | | | | |
| X ₇ | .315 | .226 | .106 | .105 | .262 | .469 | 1.000 | | | | | | | | | | | | | | | |
| X ₈ | .229 | .309 | .199 | .350 | .073 | .535 | .061 | 1.000 | | | | | | | | | | | | | | |
| X ₉ | .342 | .243 | .406 | .264 | .380 | .426 | .225 | .500 | 1.000 | | | | | | | | | | | | | |
| X ₁₀ | .456 | .468 | .499 | .667 | .245 | .391 | .040 | .500 | .516 | 1.000 | | | | | | | | | | | | |
| X ₁₁ | .148 | .114 | .352 | .282 | .005 | .322 | -.030 | .345 | .216 | .460 | 1.000 | | | | | | | | | | | |
| X ₁₂ | .193 | .356 | .077 | .335 | .260 | .320 | -.135 | .369 | .149 | .226 | .298 | 1.000 | | | | | | | | | | |
| X ₁₃ | .154 | .119 | .303 | .282 | .073 | .209 | .031 | .196 | .286 | .339 | .290 | .205 | 1.000 | | | | | | | | | |
| X ₁₄ | .235 | .273 | .263 | .206 | .088 | .156 | -.175 | .314 | .256 | .265 | .421 | .398 | .510 | 1.000 | | | | | | | | |
| X ₁₅ | .370 | .462 | .177 | .225 | .162 | .255 | .048 | .297 | .195 | .185 | .422 | .385 | .237 | .701 | 1.000 | | | | | | | |
| X ₁₆ | .489 | .779 | .420 | .558 | .503 | .338 | .081 | .430 | .412 | .516 | .208 | .437 | .131 | .509 | .503 | 1.000 | | | | | | |
| X ₁₇ | .332 | .527 | .201 | .285 | .214 | .389 | .057 | .514 | .378 | .280 | .200 | .395 | .052 | .408 | .479 | .621 | 1.000 | | | | | |
| X ₁₈ | .452 | .426 | .246 | .414 | .128 | .409 | .062 | .557 | .312 | .390 | .286 | .238 | .084 | .243 | .319 | .463 | .650 | 1.000 | | | | |
| X ₁₉ | .472 | .219 | .203 | .312 | .227 | .311 | .295 | .373 | .261 | .383 | .262 | .223 | .072 | .072 | .118 | .252 | .209 | .475 | 1.000 | | | |
| X ₂₀ | .544 | .487 | .551 | .530 | .303 | .320 | .154 | .552 | .501 | .416 | .229 | .293 | .269 | .358 | .255 | .499 | .477 | .618 | .597 | 1.000 | | |
| X ₂₁ | .650 | .545 | .462 | .441 | .267 | .368 | .121 | .445 | .400 | .514 | .108 | .079 | .199 | .239 | .247 | .419 | .320 | .539 | .352 | .592 | 1.000 | |

Table 4. Correlation of private universities data

| | X ₁ | X ₂ | X ₃ | X ₄ | X ₅ | X ₆ | X ₇ | X ₈ | X ₉ | X ₁₀ | X ₁₁ | X ₁₂ | X ₁₃ | X ₁₄ | X ₁₅ | X ₁₆ | X ₁₇ | X ₁₈ | X ₁₉ | X ₂₀ | X ₂₁ | |
|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|
| X ₁ | 1.000 | | | | | | | | | | | | | | | | | | | | | |
| X ₂ | .264 | 1.000 | | | | | | | | | | | | | | | | | | | | |
| X ₃ | .094 | .110 | 1.000 | | | | | | | | | | | | | | | | | | | |
| X ₄ | .234 | .293 | .125 | 1.000 | | | | | | | | | | | | | | | | | | |
| X ₅ | .211 | .145 | -.043 | .311 | 1.000 | | | | | | | | | | | | | | | | | |
| X ₆ | .297 | .160 | -.006 | .361 | .756 | 1.000 | | | | | | | | | | | | | | | | |
| X ₇ | .197 | .067 | -.104 | .359 | .527 | .629 | 1.000 | | | | | | | | | | | | | | | |
| X ₈ | .183 | -.046 | -.010 | .400 | .212 | .477 | .373 | 1.000 | | | | | | | | | | | | | | |
| X ₉ | .141 | .177 | .041 | .185 | .391 | .385 | .419 | .385 | 1.000 | | | | | | | | | | | | | |
| X ₁₀ | .120 | -.041 | .111 | .118 | .075 | .136 | .208 | .038 | .070 | 1.000 | | | | | | | | | | | | |
| X ₁₁ | -.090 | -.159 | .194 | -.010 | -.258 | -.244 | -.223 | -.036 | -.253 | .277 | 1.000 | | | | | | | | | | | |
| X ₁₂ | .179 | .006 | -.140 | .160 | .178 | .165 | .127 | .212 | -.028 | -.168 | .004 | 1.000 | | | | | | | | | | |
| X ₁₃ | .091 | -.028 | .132 | .065 | .192 | .056 | .174 | -.046 | .330 | -.110 | -.585 | .092 | 1.000 | | | | | | | | | |
| X ₁₄ | .036 | .130 | -.161 | .125 | .283 | .118 | -.072 | .058 | .184 | -.340 | -.151 | .061 | .152 | 1.000 | | | | | | | | |
| X ₁₅ | .324 | .138 | -.305 | .259 | .182 | .233 | .122 | .293 | .129 | -.163 | -.261 | .251 | .170 | .411 | 1.000 | | | | | | | |
| X ₁₆ | .368 | -.021 | -.346 | .188 | .215 | .172 | .099 | .102 | -.044 | .057 | -.032 | .346 | -.060 | .223 | .435 | 1.000 | | | | | | |
| X ₁₇ | -.136 | .219 | -.057 | -.159 | .079 | -.043 | -.032 | -.244 | -.055 | -.170 | -.237 | -.116 | .062 | .113 | -.007 | -.079 | 1.000 | | | | | |
| X ₁₈ | .160 | -.187 | .024 | .080 | -.017 | -.038 | -.040 | .051 | -.148 | -.070 | .015 | .212 | .028 | -.156 | .237 | .142 | .088 | 1.000 | | | | |
| X ₁₉ | .179 | .079 | -.145 | .206 | .230 | .224 | .271 | .185 | .166 | -.235 | -.350 | .125 | .261 | .253 | .294 | .096 | .181 | .307 | 1.000 | | | |
| X ₂₀ | -.230 | -.343 | -.064 | -.223 | -.226 | -.265 | -.155 | -.155 | -.250 | -.162 | .074 | -.212 | .032 | -.114 | -.161 | -.177 | .191 | .100 | .195 | 1.000 | | |
| X ₂₁ | .158 | .223 | -.188 | .380 | .460 | .436 | .235 | .203 | .303 | .090 | -.213 | .026 | .086 | .338 | .421 | .202 | .296 | .113 | .336 | -.060 | 1.000 | |

.223

Table 5. Total variance explained (public university)

| Component | Initial eigenvalues | | | Rotation sums of squared loadings | | |
|-----------|---------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 7.829 | 37.281 | 37.281 | 3.212 | 15.295 | 15.295 |
| 2 | 2.069 | 9.852 | 47.133 | 2.942 | 14.011 | 29.306 |
| 3 | 1.552 | 7.389 | 54.522 | 2.685 | 12.784 | 42.091 |
| 4 | 1.498 | 7.133 | 61.655 | 2.393 | 11.394 | 53.485 |
| 5 | 1.266 | 6.028 | 67.684 | 2.254 | 10.733 | 64.218 |
| 6 | 1.035 | 4.931 | 72.614 | 1.763 | 8.396 | 72.614 |
| 7 | .965 | 4.593 | 77.208 | | | |
| 8 | .838 | 3.992 | 81.199 | | | |
| 9 | .691 | 3.292 | 84.491 | | | |
| 10 | .643 | 3.062 | 87.553 | | | |
| 11 | .509 | 2.424 | 89.977 | | | |
| 12 | .438 | 2.087 | 92.065 | | | |
| 13 | .377 | 1.796 | 93.861 | | | |
| 14 | .275 | 1.310 | 95.170 | | | |
| 15 | .257 | 1.224 | 96.394 | | | |
| 16 | .199 | .950 | 97.344 | | | |
| 17 | .185 | .882 | 98.225 | | | |
| 18 | .151 | .719 | 98.945 | | | |
| 19 | .110 | .524 | 99.468 | | | |
| 20 | .060 | .287 | 99.755 | | | |
| 21 | .051 | .245 | 100.000 | | | |

*Extraction Method: Principal component analysis***Table 6. Total variance explained (private university)**

| Component | Initial eigenvalues | | | Rotation sums of squared loadings | | |
|-----------|---------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.532 | 21.579 | 21.579 | 3.544 | 16.876 | 16.876 |
| 2 | 2.341 | 11.149 | 32.728 | 1.919 | 9.140 | 26.016 |
| 3 | 1.992 | 9.488 | 42.216 | 1.869 | 8.901 | 34.917 |
| 4 | 1.548 | 7.374 | 49.589 | 1.805 | 8.596 | 43.514 |
| 5 | 1.370 | 6.523 | 56.113 | 1.785 | 8.498 | 52.012 |
| 6 | 1.333 | 6.346 | 62.458 | 1.684 | 8.019 | 60.031 |
| 7 | 1.133 | 5.397 | 67.855 | 1.643 | 7.825 | 67.855 |
| 8 | .963 | 4.585 | 72.440 | | | |
| 9 | .855 | 4.070 | 76.510 | | | |
| 10 | .755 | 3.594 | 80.104 | | | |
| 11 | .713 | 3.395 | 83.499 | | | |
| 12 | .590 | 2.809 | 86.308 | | | |
| 13 | .547 | 2.604 | 88.912 | | | |
| 14 | .451 | 2.148 | 91.060 | | | |
| 15 | .418 | 1.990 | 93.050 | | | |
| 16 | .400 | 1.906 | 94.956 | | | |
| 17 | .315 | 1.499 | 96.455 | | | |
| 18 | .263 | 1.253 | 97.708 | | | |
| 19 | .187 | .889 | 98.596 | | | |
| 20 | .157 | .749 | 99.345 | | | |
| 21 | .138 | .655 | 100.000 | | | |

Extraction Method: Principal component analysis

Table 7. Rotated component (factor) matrix (public university)

| | Rotated Component Matrix ^a | | | | | |
|--|---------------------------------------|------|------|------|------|---|
| | Component | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Professors care about me as an individual. | | | | .758 | | |
| The instruction in my major field is excellent. | | | | .659 | | |
| Professors are fair and unbiased in their treatment of individual students. | | .773 | | | | |
| Professors provide timely feedback about student progress in a course. | | .786 | | | | |
| Professors are usually available after class and during office hours. | | | | | | |
| Professors understand of students' unique life circumstances. | | | | | .637 | |
| The content of the courses with in my major is valuable. | | | | | .876 | |
| I am able to experience intellectual growth here | .761 | | | | | |
| The assessment and course placement procedures are reasonable. | | | | | | |
| There is a good variety of courses provided on this campus | | .691 | | | | |
| Cost as factor in decision to admission/enroll. | | | | | .621 | |
| The campus staffs are caring and helpful. | | | .719 | | | |
| Residence hall regulations are reasonable. | | | | | .739 | |
| Computer labs are adequate and accessible. | | | | | .782 | |
| Library resources and services are adequate. | | | .510 | | .605 | |
| On the whole, the campus is well-maintained. | | | .687 | | | |
| I feel a sense of pride about my campus. | | | .661 | | | |
| There are a sufficient number of weekend activities for students. | .763 | | | | | |
| Males and females have equal opportunities to participate in intercollegiate activities. | .635 | | | | | |
| I can easily get involved in campus organizations. | .606 | | | | | |
| Professor take into consideration student differences as they teach a course | | | | .569 | | |

Extraction method: Principal component analysis; Rotation method: Varimax with kaiser normalization.^a

Table 8. Composition of factors

| Factors | Factor name | Loaded variables |
|----------|--------------------------|---|
| Factor 1 | Growth Opportunity | Experience intellectual growth opportunity. Sufficient weekend for students. Participation of the students. Involved with activities. |
| Factor 2 | Professor's involvement | Professors are fair and unbiased in their treatment of individual students. Professors provide timely feedback about student progress in a course. Varieties of courses |
| Factor 3 | Campus Resources | The campus staffs are caring and helpful. Library resources and services are adequate. Infrastructure facility Students pride |
| Factor 4 | Excellency of the expert | Professors care about me as an individual. The instruction in my major field is excellent. Professor take into consideration student differences as they teach a course |
| Factor 5 | Facilities | Cost as factor in decision to admission/enroll. Residence hall regulations are reasonable. Computer labs are adequate and accessible. Library resources and services are adequate. |

| Factors | Factor name | Loaded variables |
|----------|---------------------------------|---|
| Factor 6 | Applicability of course content | Professors understand of students' unique life circumstances. The content of the courses with in my major is valuable. |

Table: 9. Rotated Component (Factor) Matrix (Private University)

| | Rotated Component Matrix ^a | | | | | | |
|---|---------------------------------------|------|------|------|------|---|------|
| | Component | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Professors care about me as an individual. | | | .592 | | | | |
| The instruction in my major field is excellent. | | | .735 | | | | |
| Professors are fair and unbiased in their treatment of individual students. | | | | | | | |
| Professors provide timely feedback about student progress in a course. | .508 | | | | | | |
| Professors are usually available after class and during office hours. | .735 | | | | | | |
| Professors understand of students' unique life circumstances. | .838 | | | | | | |
| The content of the courses with in my major is valuable. | .777 | | | | | | |
| I am able to experience intellectual growth here | .608 | | | | | | |
| The assessment and course placement procedures are reasonable. | .612 | | | | | | |
| There is a good variety of courses provided on this campus | | | | | | | |
| Cost as factor in decision to admission/enroll. | | | | | | | |
| The campus staffs are caring and helpful. | | | | | | | |
| Residence hall regulations are reasonable. | | | | .847 | | | |
| Computer labs are adequate and accessible. | | | | | .776 | | |
| Library resources and services are adequate. | | | | | | | |
| On the whole, the campus is well-maintained. | | .792 | | | | | |
| I feel a sense of pride about my campus. | | | | | | | .812 |

| Rotated Component Matrix ^a | | | | | | | |
|--|-----------|---|---|---|---|------|---|
| | Component | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There are a sufficient number of weekend activities for students. | | | | | | .829 | |
| Males and females have equal opportunities to participate in intercollegiate activities. | | | | | | .553 | |
| I can easily get involved in campus organizations. | | | | | | | |
| Professor take into consideration student differences as they teach a course | .566 | | | | | | |

Extraction method: Principal component analysis; Rotation method: Varimax with kaiser normalization.^a ; a. Rotation converged in 20 iterations

Table 10. Composition of factors

| Factors | Factor name | Loaded variables |
|----------|----------------------|---|
| Factor 1 | Feedback | Feedback Counseling Students life circumstance Content of the courses Growth Assessment Professors care |
| Factor 2 | Infrastructure | Well maintained faculty |
| Factor 3 | Excellency | Care of professors Field of excellence |
| Factor 4 | Residential facility | Hall facility |
| Factor 5 | Facilities | Computer labs are adequate and accessible. |
| Factor 6 | Opportunity | Weekend Participation opportunity |
| Factor 7 | Pride Feeling | Students pride their campus |

The knowledge of rotation is to decrease the number factors on which the variables under study have high loadings. Rotation does not change anything but makes the explanation of the analysis easier. Looking at the table (Table 7), we can see that course content, students life circumstances loaded on Factor (Component) 6, cost, residential hall facility, lab, loaded on factor 5, professors care, major field, take differences loaded on Factor 4, staff behavior loaded on Factor 3, good assessment, timely feedback, varieties of courses are substantially loaded on Factor 2. All the remaining variables are substantially loaded on Factor 1.

The knowledge of rotation is to decrease the number factors on which the variables under study have high loadings. Rotation does not

change anything but makes the explanation of the analysis easier. Looking at the table (Table 8), we can see that pride of the students loaded on Factor (Component) 7, we can see that weekend, participation of the students loaded on Factor (Component) 6 lab loaded on factor 5, hall facility loaded on Factor 4, professors care, major field loaded on Factor 3, infrastructure facilities substantially loaded on Factor 2. All the remaining variables are substantially loaded on Factor 1.

6. CONCLUSION

Although the number of university has provided services, a debate arisen over the quality of education of these universities. These inconsistencies in quality of education due to the

lack of hall facility, lab and library facility, teacher's quality infrastructure facility and so on. The study is trying to find out academic services in higher education of public and private universities of Bangladesh. The total 120 respondents have been drawn probabilistically from 2 universities. The twenty-one question survey results from private and public university students of Bangladesh were compared to determine the level of student satisfaction. In this study the results obtained from two universities were analyzed factors analysis and results revealed that students from Rangamati Science and Technology University (public) and Premier University (private) hold different opinion whether their expectation met or not. Results of the study showed that the students in private universities of Bangladesh had lowest level of satisfaction and the public universities of Bangladesh had highest satisfaction. Private university student needs hall facility, lab and library facility and so on. Public university needs appropriate managerial support; well decorate campus and quality faculty members. Government should concern about their problem and UGC introduces better policies and tactics to overcome these problems.

7. RECOMMENDATIONS

The study revealed that students' satisfaction has significantly accompanying and positively correlated with different determinants like as hall facility, lab and library facility, teachers' expertise, infrastructure and so on. These are the vital determinants which need to improve to achieve desire level of quality of education as well as students' satisfaction. Moreover, the result of this study showed that satisfaction level differ in terms of public and private universities. By identifying the important factors that drive student satisfaction, the study provides new perceptions about student satisfaction and find out appropriate solutions to the concern authority.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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