

Students' Perception towards Service Quality of Private Higher Educational Institution in Bangladesh

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Abstract

Service Quality of a Private Higher Educational Institute has become competitive as well as challenging due to the accessibility of a considerable alternative. Students are delighted with their institutions when the quality services ensure their expectations. The primary purpose of this research is to evaluate students' perception through service quality of a higher educational institute in International Islamic University Chittagong (IIUC), Bangladesh. Primary data were collected from 273 IIUC students randomly from February to April 2019. Descriptive Statistics, reliability analysis, exploratory factor analysis (EFA), and structural equation modeling (SEM) were run to evaluate the service quality in IIUC. The study was conducted by using SPSS, AMOS-24 version. Based on research findings, transport services, tuition fees, physical and medical facilities have direct and significant effect on overall students' satisfaction on service quality dimension and internet facilities, research facilities and administrative services have significant indirect influence to the students' overall satisfaction. Therefore, if the university desires to carry out better students' satisfaction, they have to improve the above dimensions. Proper implementation of these findings might help the university to make a better strategic plan to improve students' overall satisfaction.

Keywords: Service Quality, Student, Satisfaction, Private Higher Educational Institution, Bangladesh

Introduction

Service is an identifiable, insubstantial activity that serves to meet up the wants of clients and which is the principal objective of transaction. Service quality is the facility of the organization to meet or exceed clients' anticipations (Kitchroen, 2004). Service industries are playing a vital role in the economy of most of the countries in the world. Interpreting quality service is a way for achievement in today's global opposition, and specialists of this field coincide that the most influential viable tendency presently shaping business and promoting policy is service quality. Service quality has been linked with better productivity since 1980 and as long as vital competitive gain through generating replicate sales, customer loyalty, affirmative word-of-mouth response, and competitive product separation. Zeithaml and Bitner (1996) pointed out that currently, the matter of maximum priority includes perceptive the role of service quality on earnings and other economic outcomes of the association. For these, it has emerged as an unrelenting strategic force and an essential critical vital issue for the researcher. It is not a matter of disclosure that academics and practitioners matching are animated to precisely measure service quality in order to improved value its necessary experience, consequences, and finally establish procedures for increasing quality to gain competitive advantage and construct buyer loyalty. The pressure drives successful organizations on the way to top quality services make the quantity of service quality and its

successive institute of the highest reputation. Attention in measuring service quality is thus rationally large. Conceptualization of quality service, its relation to the fulfillment, value constructs, and method of evaluation, have been an indispensable idea of the education sector over the years (Oldfield and Baron, 2000). Today, higher learning is being motivated towards profitable competitiveness forced by economic variables ensuing from the growth of worldwide education markets and the declining trend in administration funds that forces higher learning institutions to seek another financial source. Private higher learning organizations had to be anxious with not only what the civilization values in the skills, abilities of graduates (Lawton, 1992), but also how their graduates think about their educational practice (Bemowski, 1991). To ensure the sustainability of higher learning institutions involve them to unbroken attempt towards meeting and crossing over students' prospect (Anderson et al., 1994). The main objective of this study is to examine the relationship between service quality and students' perception of higher educational institutions, especially in the private sector.

Literature Review

Student satisfaction

Kotler and Clarke (1987) defined satisfaction as a situation felt by a person who has understanding performance or consequence that fulfills his or her anticipation. It too can be characterized as a work of desires of virtual level and sees the implementation. This expectation may go as much as before the students even go into the higher education, signifying that it is vital to the investigators to regulate first what a student suggests before entering the institution of higher education (Palacio et al., 2002). In contrary, Carey, Cambiano and De Vore (2002), think that satisfaction, in fact, covers the issue of students' perception and also experiences during the study years. While most of the studies on student satisfaction focus on the viewpoint of the customer, researchers face a problem of introducing a standard definition for student satisfaction thus providing a need of customer satisfaction theory to be chosen and modified so that it can clarify the meaning of student satisfaction (Hom, 2002). It is hazardous indeed in spite of the fact that to consider understudies as the client, but given the existing environment of higher learning instruction commercial center, there's an unused ethical privilege that understudies have ended up "customer".

Service quality and Higher Learning Institutions

Benefit quality within the field of higher instruction isn't as it was vital but too a key figure of instructive merit. Different studies found extensive influence on student satisfaction depend on affirmative perception of service quality, and thus satisfied student would attract more students through word-of-mouth communications (Alves and Raposo, 2010). Learners can be interested or persuaded from both academic excellence as well as the managerial efficiency of the organization. Ahmed and Nawaz (2010) opined that to measure educational superiority, service quality is a basic performance measure and is the most important variable for universities to produce a strong perception in the customer's mind. Besides, Pedro, Mendes and Lourenco (2018) found that there is a positive association between service quality and students' overall satisfaction in the Higher Education Institutions.

Ilias, Hasan, Rahman and Yaso (2008) discovered that the main variables that could affect the students' satisfaction level were; facilities for learning and teaching such as libraries, internet and lab facilities, students' observation on teaching and learning, learning atmosphere such as lectures rooms, laboratories, social space and academe buildings, support facilities like student accommodation, health services and external features of being a student such as transportation, finance. By implies of all these capacities, a higher learning institution will be able to meet up understudy desires and challenges in a competitive market. Zeithaml and Berry (1988) used "SERVQUAL" scale for evaluating the quality of service, which contains

assurance, empathy, reliability, responsiveness, and tangibility. SERVQUAL method has made much acceptance and reliable in the last decades (Khodayari and Khodayari, 2011). However, Parasuraman, Zeithaml and Berry (1985) identified ten factors that can be generalized to any service. The above mentioned ten dimensions include reliability, tangibility, responsiveness, competence, access, courtesy, communication, security, credibility, and understanding. Nadiri, Kandampully and Hussain (2009) attempted to diagnose the level of student perception in higher education. They tried to estimate service quality of administrative units such as registrar office, library, faculty or school offices, dormitories, rector office, sports, and health center. By employing descriptive and causal analysis, they found that service quality measurement instrument for higher education services is of two-dimensional: tangibles and intangibles. In spite of the fact that a number of considers have been done on benefit quality and student's recognition few endeavors have been taken to degree benefit quality through students' fulfillment extraordinarily in private higher instruction institution in Bangladesh, with the developing number of higher instructive educate, private teach are competing with one another to draw in more understudies. For accomplishing this objective, the authority of private higher educational institutions in our nation ought to give compelling and productive benefit to keep and satisfy students. In this manner, this study is an endeavor of examining the student's satisfaction through the benefits quality given by higher learning institution.

Conceptual Structural Equation Model and Hypothesis

The hypotheses in this research are as follows:

- H1: Library and Seminar facilities influence the students' Career facilities
- H2: Research facilities affect the students' Career facilities
- H3: Internet facilities influence the students' Career facilities
- H4: Administrative service has a direct impact on students Career facilities
- H5: Physical and medical facilities has a direct impact on students Career facilities
- H6: Classroom, Teaching, and Learning has a direct impact on students Career facilities
- H7: Tuition fees has a direct impact on students Career facilities
- H8: Physical and medical facilities have a direct effect on students Overall Satisfaction
- H9: Canteen facilities has a direct impact on students Overall Satisfaction
- H10: Transport facilities has a direct effect on students Overall Satisfaction
- H11: Career facilities has a direct impact on students Overall Satisfaction
- H12: Tuition fees has a direct impact on students Overall Satisfaction

Based on Exploratory Factor Analysis (EFA) (Appendix A1) a conceptual framework is given below:

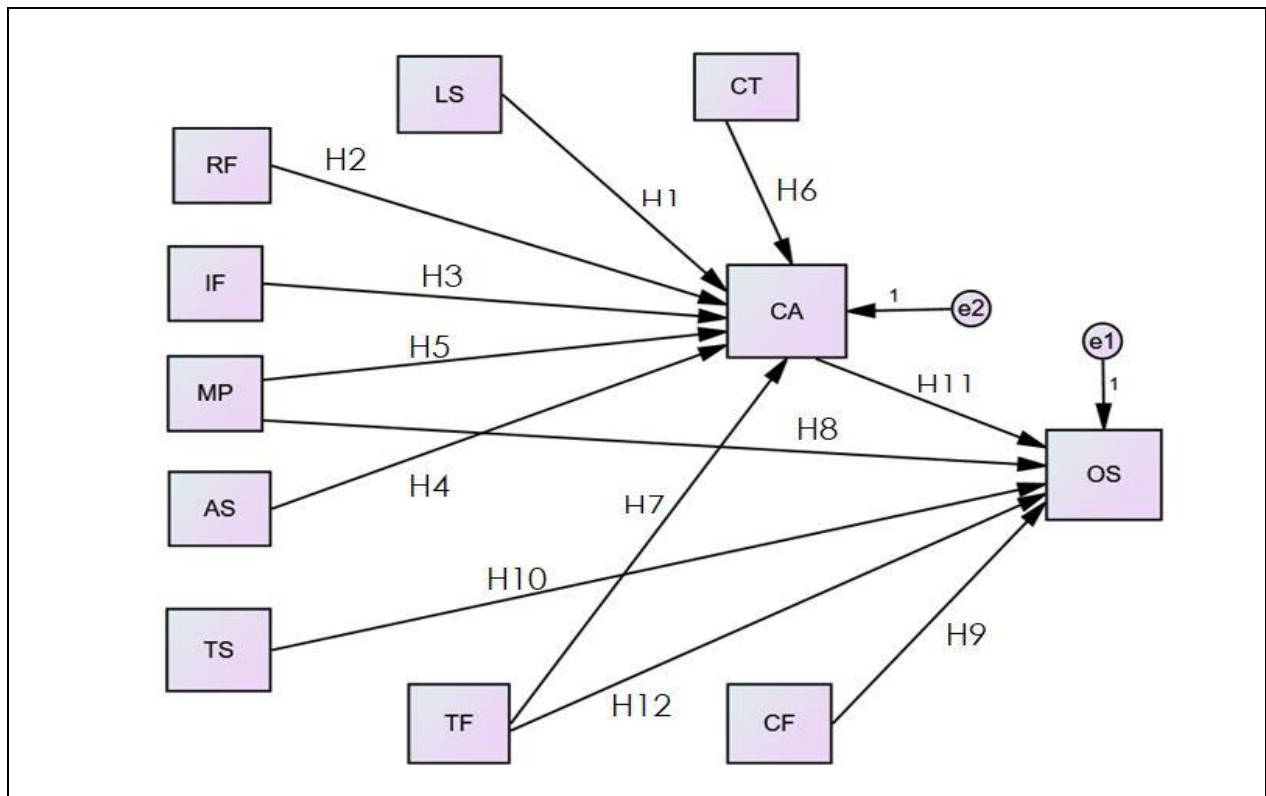


Figure 1: Hypothesized structural equation model

Methodology

Primary data have been collected from the students of both undergraduate and postgraduate students at International Islamic University Chittagong. By using convenient sampling technique, a total of 273 questionnaires have been collected from February to April 2019. The questionnaires made in this study are organized two in sections. Section A contains the demographic variation of the students'. Section B constitutes of 66 items based on a five-point Likert scale on students' perception through service quality of IIUC. Where “1” indicates “strongly disagree” and “5” indicate “strongly agree”. To measures, the Service Quality of Private Higher Educational Institute nine independent variables and two dependent variables have been considered in this study. The dependent variables in this study are overall student satisfaction (OSS) and career facilities (CA). The independent variables are the classroom, teaching and learning, library and seminar facilities, internet facilities, administrative and support services, transport facilities, tuition fees, canteen facilities, and physical and medical facilities. Descriptive Statistics, reliability analysis, exploratory factor analysis, and structural equation modeling (SEM) were run to estimate the service quality in a private higher educational institute. The data analysis was carried out through SPSS and AMOS-24 version.

Results

Descriptive statistics

Table 1 shows the demographic profile of the students participating in this research. In this study, 168 (61.5%) are male students and 105 (38.5%) are female students. Majority of the students belong to 23 years old (68.5%). In response to departmental background, the highest number of students had a business faculty (44%), followed by Arts and Humanities (28.9%), and Science and Eng. (27.1%). Concerning the educational background, most of the respondents enrolled in undergraduate programs (81.7 %). Majority of the students CGPA

(Cumulative Grade Point Average) had 3.01–3.50 (52.8%) and only 21.9% of students CGPA had greater than 3.5.

Table 1: Demographic profile of the students

Variable	Frequency	Percentage (%)
Gender		
Male	168	61.5
Female	105	38.5
Students Age		
≤ 22	187	68.5
>23	86	31.5
Department		
Science and Eng.	74	27.1
Arts and Humanities	79	28.9
Business faculty	120	44.0
Education level		
Diploma	3	1.1
Honors	223	81.7
Masters	47	17.2
GPA up to Last semester		
≤ 3.0	69	25.3
3.01-3..5	144	52.8
3.51-4.00	60	21.9
Total	273	100.0

Reliability and Exploratory factor analysis

Reliability and Average Factor Loading of the Items: Results of reliability coefficients and average factor loading of all items for service quality presented in Table 2. The satisfactory value of Cronbach's Alpha is larger than 0.7 (Nunnally, 1978, Hair et al., 2010). The results in Table 2 illustrated that the overall reliability of the dimension had an alpha coefficient of 0.87, which represents high reliability. All the values of Cronbach's Alpha if item deleted are above 0.85 indicates this study that seems high reliable. Similar reviews were found by Said, Sudin and Ali (2006).

Table 2: Results of Reliability and Average factor loading on service quality dimension

Items	Notation	Average Loading	Factor Cronbach's Alpha if Item Deleted
Classroom, Teaching and Learning	CT	0.70	0.862
Library and Seminar facilities	LS	0.70	0.853
Research facilities	RF	0.72	0.856
Internet facilities	IF	0.70	0.845
Administrative and Support Services	AS	0.70	0.857
Transport facilities	TS	0.68	0.873
Tuition fees	TF	0.68	0.872
Canteen facilities	CF	0.69	0.860
Physical and medicine facilities	MP	0.73	0.854
Career facilities	CA	0.74	0.863
Overall Satisfaction	OS	0.67	0.866
Overall reliability based Cronbach's Alpha			.871

To explore the dimensionality in the dataset exploratory factor analysis procedure is also employed. Principle components method for extraction with “Varimax rotation” and eigenvalues greater than one factor are considered significant (Hair et al., 1979). All the average factor loadings in this study had greater than 0.50 (Hair et al., 1998). This indicates the strong relationship between the items and the factors.

KMO and Bartlett’s test: KMO and Bartlett’s test Kaiser – Meyer – Olkin (KMO) measure sample adequacy of the data. The accepting values of this test is greater than 0.5 (Kaiser, 1974). In this research, KMO and Bartlett’s test Kaiser – Meyer – Olkin (KMO) value is 0.908, which falls marvelous measure of sampling adequacy. Therefore, the factor analysis is suitable for this data set. The Bartlett’s test of sphericity $\chi^2(2145) = 12068.190$, $p < 0.001$, result is statistically significant level as shown in Table 3. Thus, these tests indicate that the data was suitable for factor analysis.

Table 3: KMO and Bartlett’s Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.908
Bartlett's Test of Sphericity	Approx. Chi-Square	12068.190
	df	2145
	Sig.	.000

Total Variance Explained: Table 4 shows 14 components with Eigen values larger than one were generated, which explained about 70.056% of the total variance. Hair et al (2010) illustrated that 60 percent of the total variance is acceptable in the social sciences research. Eigen values lower than one is not shown in the present table. Out of 14 components factor one explains 28.20% of the total variance, factor two explains 9.73% of the total variance. All other factors explain a relatively small amount of variance.

Table 4: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	18.612	28.200	28.200	18.612	28.200	28.200	5.253	7.959	7.959
2	6.421	9.728	37.928	6.421	9.728	37.928	5.197	7.874	15.833
3	3.543	5.368	43.296	3.543	5.368	43.296	5.168	7.830	23.663
4	2.701	4.092	47.388	2.701	4.092	47.388	4.360	6.606	30.269
5	2.349	3.558	50.947	2.349	3.558	50.947	3.969	6.014	36.283
6	1.926	2.919	53.866	1.926	2.919	53.866	3.788	5.739	42.022
7	1.742	2.639	56.505	1.742	2.639	56.505	3.652	5.534	47.556
8	1.638	2.481	58.986	1.638	2.481	58.986	2.802	4.245	51.801
9	1.451	2.199	61.185	1.451	2.199	61.185	2.646	4.010	55.811
10	1.446	2.190	63.376	1.446	2.190	63.376	2.449	3.711	59.521
11	1.184	1.794	65.170	1.184	1.794	65.170	2.096	3.175	62.697
12	1.161	1.759	66.929	1.161	1.759	66.929	1.922	2.912	65.608
13	1.055	1.599	68.527	1.055	1.599	68.527	1.582	2.398	68.006
14	1.009	1.529	70.056	1.009	1.529	70.056	1.353	2.050	70.056

Extraction Method: Principal Component Analysis.

The Extraction Sums of Squared Loadings is the same as the Initial eigenvalues. Factors that have eigenvalues less than one are not shown in the above table. The Rotation Sums of Squared Loadings shows the eigenvalues and variance after rotation. To identify the number of significant factors rotated eigenvalues and scree plot have also been used in this study.

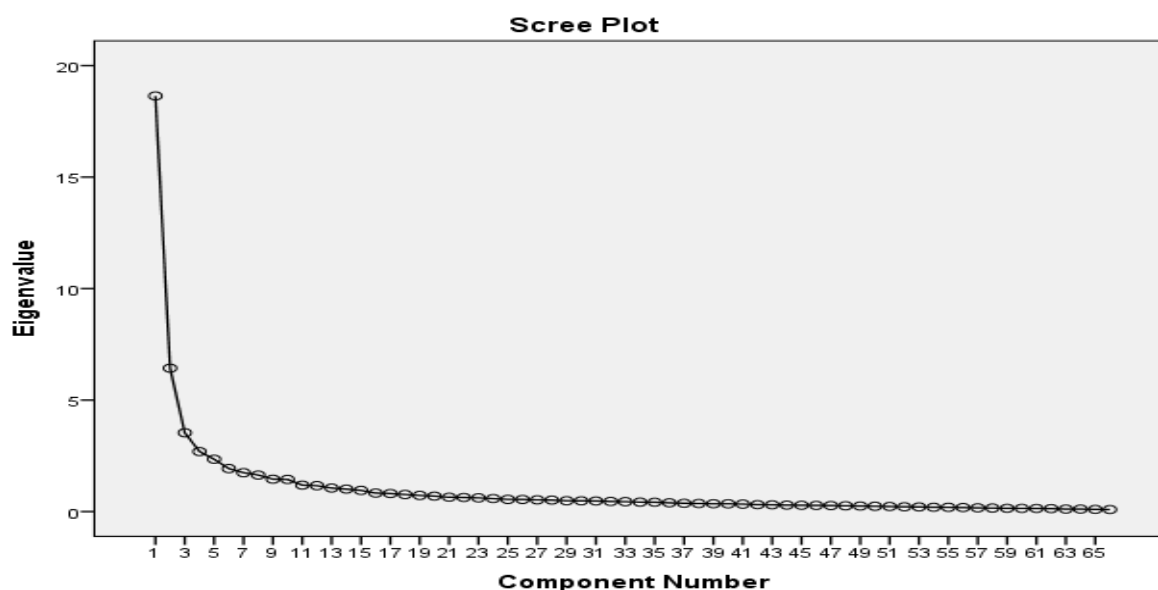


Figure 2: Scree plot of service quality dimension

It is a graph of the eigenvalues against the factors. An assessment of the scree plot exposed a clear break after the first six components. Using Catell's (1966) scree test, it was decided to hold six components for further exploration. Although eigenvalues of 14 factors greater than 1, after six components factors, they have a relatively small amount of variance. So only six factors have been retained in this research.

The final table of factor analysis is the component matrix (Appendix 1B). This shows the loadings of each of the items on the 14 components. This table reveals that most of the items load quite strongly on the first six components. This supports our conclusion from the scree plot to retain only six factors for further determination.

Test for Structural Equation Model

To examine the relationship among service quality of private higher learning institution on carrier facilities and overall students' satisfaction Structural Equation Model have been employed. The VIF result of the multicollinearity test for all the explanatory variables are indicated under appendix 2A. Outliers on data also detected under appendix 2B. Table 5 shows the regression weight output for the unstandardized MLE of structural paths. Unstandardized coefficient indicates the amount of change in the explained or mediating variable for each one-unit change in the variable predicting it. Critical ratios (CR) define the estimate divided by its standard error. The probability value is displayed under the P column. The estimated parameter will be significant at the value of p less than 0.05 and value of C.R greater than 1.96. Among the eleven hypotheses, seven structural paths are found to be significant. The probability of critical ratio (C.R.) as large as 7.004, 4.232, 3.779, 3.143, 3.045, 2.842 and 2.424. In other words, the regression weight for transport facilities, tuition fees, physical and medical facilities has direct and positive impact on students overall satisfaction on service quality dimension and Internet facilities, Research facilities and Administrative and Support Services, Internet facilities influence to the students' future Career facilities. The service quality dimension of career facilities is one of the main mediation factors, which leads to a positive effect on overall students' satisfaction. The total effect, direct effect and indirect effect are presented in Appendix 3A.

Table 5: Regression Weights of service quality dimension

Structural Paths	Estimate	S.E.	C.R.	P-Value
CA <--- MP	0.332	0.078	4.232	***
CA <--- AS	0.202	0.071	2.842	***
CA <--- IF	0.256	0.084	3.045	***
CA <--- CT	-0.235	0.084	-2.814	0.005
CA <--- LS	0.037	0.071	0.522	0.601
CA <--- RF	0.251	0.066	3.779	***
CA <--- TF	-0.133	0.066	-2.013	0.044
OS <--- CF	0.081	0.044	1.834	0.067
OS <--- TS	0.377	0.054	7.004	***
OS <--- MP	0.166	0.068	2.424	***
OS <--- CA	0.059	0.044	1.339	0.181
OS <--- TF	0.175	0.056	3.143	***

The model in Figure 3 contains both unobserved and observed variables and the causal relationships among unobserved variables, indicated by single-sided arrows. The values of each path represent unstandardized regression coefficients. These values indicate the amount of change in overall satisfaction (OS) and career facilities (CA) given a standard deviation of one-unit change in the predicting variable used in the model. The model shows that seven factors (Table 5), namely transport services ($\beta = 0.377$), tuition fees ($\beta = 0.175$), physical and medicine facilities ($\beta = 0.332$) have positive and direct significant influence on overall students satisfaction on service quality dimension and internet facilities ($\beta = 0.256$), research facilities ($\beta = 0.251$) and administrative services ($\beta = 0.202$) has indirect significant effect on overall students' satisfaction. All other variable do not have a direct and indirect effect on overall satisfaction.

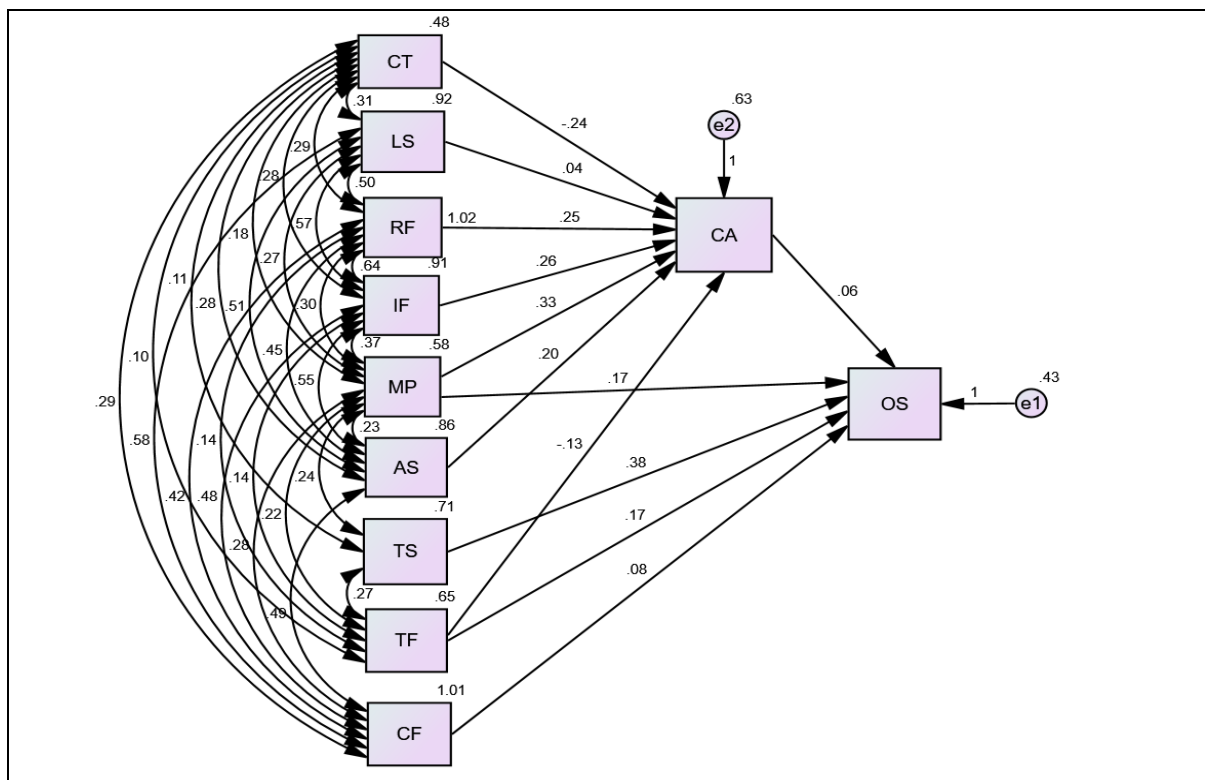


Figure 3: SEM of different service quality dimension

Table 6: Model Fit summary

Indices	Achieved value	Recommended Value
χ^2 (df)	25.572(15)	
CMIN/DF	1.705	$2 \leq$
Goodness of Fit Index (GFI)	0.983	$\geq .90$
Adjusted Goodness of fit Index (AGFI)	0.927	$\geq .80$
CFI	0.992	≥ 0.90
IFI	0.992	≥ 0.90
TLI	0.970	≥ 0.90
RMSEA	0.051	$0.08 \leq$

Table 6 represents the model had an adequate fit to the sample data as the threshold of CMIN/df is less than 2 (1.705), GFI and AGFI is greater than 0.90 (Tabachnick and Fidell, 2007). The CFI value is 0.992 exceeded the accepted level of 0.90 (Hu and Bentler, 1999). Besides, IFI and TLI value also exceeded their accepted level of 0.90. The Root Mean Square Error of Approximation (RMSEA) is 0.051, which is less than the threshold value 0.08 (Byrne 2010, Hair, 2010).

Conclusion, Implications and Limitations

This study aimed to evaluate students' perception towards service quality of a private higher educational institute. The findings of this study reveal that overall reliability coefficients (0.871) of the dimension are successfully maintained. Using factor analysis has allowable 14 items of service quality to be recognized from 66 items. These 14 components explain a total of 70.056 percent of the variance. Results of KMO and Bartlett's test examine a superb measure of sampling adequacy. The Bartlett's test of sphericity is statistically at a significant level, which represents that the data was appropriate for factor analysis. Although eigenvalues of 14 factors are greater than 1, the scree plot exposed a clear break after the first six components. So, only six factors have been retained in this research. By using SEM, Seven structural paths are found to be significant, namely transport services, tuition fees, physical and medical facilities have direct and significant effect on overall students' satisfaction on service quality dimension and internet facilities, research facilities and administrative services, physical and medical facilities have the significant indirect influence to the students' overall satisfaction. All other variables do not have any direct or indirect effect on overall students' satisfaction. The findings of this study will be helpful for IIUC as well as the other private higher education sector in Bangladesh, where establishment seeks to classify the overall students' satisfaction level in their particular university. Therefore, if the university wants to enhance students' satisfaction, they have to recover transport services, physical and medical facilities also within affordable tuition fees. It is also essential to provide up-to-date equipment and physical facilities to enhance students' academic satisfaction. To achieve greater students' satisfaction internet facilities and research facilities should also be increased. Finally, personnel of the university should be able to show proper attention and better positive attitude towards students' overall satisfaction. This research is inadequate because of considering one higher educational institute (IIUC); this contention needs to be validated more by further research. Other private and public universities all over the country should also be considered for future study on service quality in higher educational Institute.

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Appendices

Appendix: 1A

Communalities	Extraction
Sufficient Class room and Lab facilities	.733
Multimedia Classroom	.671
Sufficient necessary tools and equipment for studies	.686
Clearly defined course outcomes	.632
Teachers are capable to answer any question in the class rooms	.707
Teachers are qualified and had a practical knowledge	.713
Supply of Hygienic food and safe drinking water	.680
Variation of food items	.653
Sufficient food items	.732
Behavior of the staffs of the canteen pleasing	.731
Reasonable foods cost	.609
Satisfactory functioning of the canteen services.	.727
Adequate number of books	.694
Adequate modern equipments	.737
Available of latest books, journals, thesis	.709
Friendly environment	.634
Available transport facility from town to university	.749
Smooth transport facility within campus	.672
Behaviors of the transport Staffs satisfactory	.699
Skilled drivers and Helpers	.655
Supply of up-to-date information	.780
Reasonable fare	.645
Transportation maintains right time	.590
keeps proper records	.631
For any problem administrative staff show sincere interest	.690
Prompt in responding to any sort of problem	.711
Positive attitude towards learners	.739

Appendix: (Con.)

Communalities	Extraction
organizational staff correspond well with students	.784
organizational staff have good knowledge of the systems	.697
High-quality department's administrative services	.667
Research based curriculum	.710
Providing training on research	.771
Arranging Local and International Conference	.688
Sufficient Research Lab and Software facilities	.728
Encouraging students towards research	.718
Sufficient fund for conducting any research project	.719
Affordable tuition fees.	.616
Tuition fees waiver for poor and meritorious students.	.723
Tuition fees waiver for disabled students.	.740
Tuition fees waiver (Sons/Daughters freedom fighter)	.651
Tuition fees waiver for sibling.	.671
Wifi facilitated campus	.622
Updated software	.770
Training on Internet and computer learning	.658
Online admissions and results system	.694
Performance of the staffs on IT services are satisfactory	.648
Sufficient computer in lab	.726
Skilled manpower in IT service	.765
Satisfactory comprehensive accommodation system	.798
Available structural and physical facilities in campus	.747
Civilized behavior of the non-teaching staff	.637
Good and adequate University medical support system	.785
Availability of Doctors	.717
Availability of medicine in health center	.765
Accessibility Bank and ATMs	.609
University authority Arranges job fair for the students	.756
Available Internship placement	.755
University authority Arranges career based workshop and trainings	.713
Opportunities for Job placement and Cooperation linkages	.788
Career based curriculum texts	.725
Counsels students on their future careers	.753
I am satisfied with the overall learning facilities	.693
I am satisfied with the pleasant environment campus	.644
I am satisfied with the financial issues	.703
The attitudes of the students towards university management are satisfactory	.655
Considering my experiences, I will recommend my university to others	.641

Appendix 1B: Component Transformation Matrix

Component	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	.383	.398	.416	.344	.327	.193	.210	.186	.263	.207	.213	.095	.091	.077
2	-.213	-.296	-.224	-.123	.271	.549	.430	.371	-.117	-.067	-.065	.181	.221	.035
3	-.641	.234	-.223	.493	-.122	.062	-.158	.066	.223	.340	-.104	.106	.027	.072
4	-.392	-.187	.518	-.217	-.138	-.305	.503	-.130	.080	.212	.098	.146	-.070	.164
5	-.007	.603	-.002	-.518	-.371	.209	-.056	.075	-.018	-.042	-.065	.406	.047	.063
6	.057	-.457	.426	-.068	-.207	.386	-.543	.049	.135	.241	-.028	.133	.133	.005
7	.253	-.101	.017	.329	-.700	.020	.306	.309	.064	-.183	-.233	-.167	.028	.131
8	.246	-.192	-.236	-.079	.102	-.396	-.073	.476	.107	.312	-.130	.436	-.351	.041
9	.015	.020	.236	.324	.012	.070	.089	-.203	-.436	-.067	-.366	.424	-.188	-.489
10	.312	-.061	-.297	-.031	-.064	.227	.219	-.551	-.034	.531	-.210	-.005	-.045	.271
11	.091	-.166	-.176	.079	-.010	-.117	.072	-.333	.593	-.346	.019	.448	.325	-.135
12	.016	-.104	-.092	.266	-.127	.078	-.082	-.108	-.338	-.205	.598	.360	-.194	.435
13	.096	-.004	-.102	.037	-.145	-.300	.013	.092	-.365	.336	.246	.071	.707	-.219
14	.009	-.045	-.168	-.068	-.253	.219	.165	.006	.189	.200	.507	-.100	-.337	-.608

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Appendix 2A: Multicollinearity test

Variable	VIF	1/VIF
IF	3.12	0.320566
LS	2.22	0.449785
MP	2.11	0.473524
RF	2.09	0.47873
AS	2.01	0.496295
CF	1.8	0.556289
CA	1.76	0.568471
CT	1.61	0.62102
TS	1.45	0.690296
TF	1.43	0.700814
Mean	1.96	

Appendix 2B: Descriptive statistics results

	CT	CF	LS	TS	AS	RF	TF	IF	MP	CA	OS
Mean	3.57	3.02	3.32	3.39	3.26	3.20	3.43	3.30	3.12	3.04	3.37
Std. Error of Mean	0.04	0.06	0.06	0.05	0.06	0.06	0.05	0.06	0.05	0.06	0.05
Std. Deviation	0.71	1.01	0.96	0.84	0.93	1.02	0.82	0.97	0.81	1.05	0.84
Skewness	-0.29	0.10	-0.20	-0.15	-0.01	-0.02	-0.19	-0.08	-0.15	0.01	-0.60
Kurtosis	-0.28	-0.54	-0.66	-0.40	-0.39	-0.50	-0.46	-0.51	0.06	-0.63	0.25

Appendix 3A: Total Effects, Direct Effects and Indirect Effects on overall students' satisfaction

Total Effects (Group number 1 - Default model)											
DV	CF	TF	TS	IF	RF	LS	CT	AS	MP	CA	
CA	0	-0.133	0	0.256	0.251	0.037	-0.235	0.202	0.332	0	
OS	0.081	0.167	0.377	0.015	0.015	0.002	-0.014	0.012	0.185	0.059	
Direct Effects (Group number 1 - Default model)											
DV	CF	TF	TS	IF	RF	LS	CT	AS	MP	CA	
CA	0	-0.133	0	0.256	0.251	0.037	-0.235	0.202	0.332	0	
OS	0.081	0.175	0.377	0	0	0	0	0	0.166	0.059	

Appendix 3A: (Con.)

Indirect Effects (Group number 1 - Default model)										
DV	CF	TF	TS	IF	RF	LS	CT	AS	MP	CA
CA	0	0	0	0	0	0	0	0	0	0
OS	0	-0.008	0	0.015	0.015	0.002	-0.014	0.012	0.019	0

Appendix 3B: Model Fit Summary**CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	51	25.572	15	0.043	1.705
Saturated model	66	0	0		
Independence model	11	1329.108	55	0	24.166

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.067	0.983	0.927	0.223
Saturated model	0	1		
Independence model	0.319	0.373	0.248	0.311

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.981	0.929	0.992	0.97	0.992
Saturated model	1		1		1
Independence model	0	0	0	0	0

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.051	0.009	0.084	0.442
Independence model	0.292	0.278	0.306	0