

AN ASSESSMENT OF SERVICE QUALITY IN HIGHER EDUCATION: STUDENTS' PERSPECTIVE (A STUDY OF PUNJABI UNIVERSITY PATIALA, PUNJAB (INDIA))

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Abstract

The present paper emphasized on evaluation of service quality of Punjabi university Patiala based on student perspective. Service quality is the thrust area for survival of any educational institute. When student feel satisfied, they are more interested in the curriculum and finished their undergraduate and post graduate programme on time. Quality is the most important factor affecting the education outcome of the institute. The quality of academic services and administrative support provided by a higher education institution is a positive determinant of student's satisfaction and is instrumental in achieving their loyalty, confidence and trust. Handful studies are available on service quality assessment for higher educational institutes. A sample comprised 380 students and information was elicited using a five point likert scale employing the questionnaire method to obtain Primary data. Data were analysed with the help of Exploratory Factor Analysis(EFA) using SPSS21, Confirmatory Factor Analysis (CFA) and Structural Equation Modelling(SEM) using AMOS 18.The study concluded that students are concerned with academic administration, infrastructure facilities, library facilities, university administration, extracurricular activities, students had neutral response towards student motivation cell and students are found to be dissatisfied with placements and financial administration and study suggested for improvement of services so that needs of customer (students) are fulfilled.

Keywords: Service quality, higher education, institute, students, quality, validity, satisfaction

1. Introduction

Students are the main stakeholders in higher education institution, so their satisfaction is the most sensitive issue (Deuren & Lhaden, 2017). If the students are satisfied in higher educational institution, higher educational institution can perform better. It's start with the student's journey from enrolment to graduation and beyond. Institutions that focus on student satisfaction provide facilities where students can grow in academic, social relation and professional. It covers the tangible intangible parameter related to campus, academic and allied experiences. Student satisfaction impacts students' dropout/retention rate, academic performance and institutional image. Student satisfaction in teaching, curriculum design and student support services directly influences academic achievement. Prompt academic support in the form of mentoring improves the student learning. It helps the institutions of higher education solicits in improves the graduation rates, increase the retention rates and enlightens academically strong educational outcomes. A satisfied students force act as brand ambassador of the institution. Students satisfaction includes overall learning experience in the institute. Assessing of students' satisfaction is defined as opinions of students about the services they received as a student (Razinkina and Pankova, 2018). This may include teaching facilities, placement service, library facilities, infrastructure facilities, extracurricular activities, student motivation etc.

II Review of literature: In order to formulate problem in precise manner, a few studies are being discussed below in the chronological order

Gruber and Voss (2010) The study considered the population of students from German University, taking a sample of 374 students and using well-structured questionnaire following Likert scale. Study covered 15 dimensions such as administration and student service, atmosphere among students, attractiveness of surrounding, computer equipment, courses, library, lecture theatre, cafeteria, relevance of teaching to practice, reputation of university, placement, support from teacher, presentation of information and university building. The study found that students were satisfied with respect to placement and atmosphere but dissatisfied as far as university building and lecture theatre are concerned.

Jenssen et al. (2010) tested the overall satisfaction of students towards students learning experience. The analysis revealed that the academic and practical skills quality were crucial determinants of student's satisfaction. The analysis further emphasizes that social climate, physical infrastructure and quality of services from the administrative staff should be duly weighted when attempting for improving student's satisfaction.

Pavlina et al. (2011) analyzed student perception of teaching quality in higher education based on University of Zagreb survey. The study considered observations of 104 students collective via questionnaire. The study found that changes in student work load affects the students' satisfaction and teaching experience, teaching competence and personal qualities really matter as factors contributing towards quality of teaching.

Lizzio et al. (2012) evaluated the students' attitude towards academic environment for students in the University of Griffith in Australia. Exploratory factors analysis has been applied and data has been collected through a questionnaire for 646 students with different discipline. The study observed that academic environment and learning material offered to students contributed towards students' satisfaction. Also, inappropriate assessment and heavy workload adversely affected the students in terms of satisfaction.

Ahmed & Masud (2014) made an attempt to analyse the perception of students towards service quality of higher educational institutions in Malaysia. The study emphasized on the critical factors of academic programmes by the graduate school of management, IIUM, based on sample of 221 students. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) have been applied to evaluate seven dimensions of service quality. For exploring the relationship between seven dimension and student satisfaction has been applied. The result highlighted that five factors, i.e., assurance, empathy, tangibles, responsiveness of academic staff and academic programmes had a positive and significant influence on satisfaction of students. The author suggested that to achieve greater student satisfaction, the institution should to emphasize on showing interest in solving, students individual problems, provide up to date equipment, focus on responsiveness of academic staff and priorities a positive attitude.

III Objectives of the study: The study is carried to attain the following objectives:

- 1) The objective of the study is to evaluate the various factors concerning students satisfaction of Punjabi university Patiala.
- 2) To study the impact of the various factors concerning satisfaction among the students of Punjabi university Patiala.

IV Research Methodology: In order to carry an empirical analysis data have been collected from graduate and Post graduate students of Punjabi university Patiala with judgemental sampling technique. Total of 380 questionnaires had been distributed out of which 20 questionnaires is incomplete and 30 questionnaire is incorrect and 330 questionnaire has been found to be accurate for study and response rate is 86.84%

V Data analysis and interpretation: Exploratory Factors Analysis (EFA), Confirmatory factors analysis (CFA) and Structural Equation Modelling (SEM) have been used for empirical analysis.

V(a) Exploratory factor analysis: Exploratory factor analysis is suitable tool for identifying factors amongst multiple variables(Hair et al. 2010). The KMO value was found to be 0.913 which was above the recommended value of 0.6 (Kaiser and Rice, 1974).

Table 1 KMO and Bartlett's test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.913
Bartlett's Test of Sphericity	Approximated Value of Chi-Square value	16419.5
	Degree of freedom	1176
	Level of significance	0.000

Source: Author self-developed with the help of primary Data

Factor Labeling

As a result, eight factors with 49 statements showed the most distinct and meaningful dimensions as shown in table 5.7. The eight factors were labeled as 'academic administration' (factor 1); 'infrastructure facilities' (factor 2); 'library facilities' (factor 3); 'university administration' (factor 4); 'placement service' (factor 5); 'extracurricular activities' (factor 6); 'students motivation cell' (factor 7); 'financial administration' (factor 8). All the factors with clear factor loadings, mean and standard deviation are shown in table 2

Table 2
Factor Structure

Items label	Statements	Mean	S.D.	Communalities	Factor loading
Factor 1	Academic Administration (aa)	3.89	0.756		
aa5	Teachers are easily available	3.89	0.910	0.810	0.851
aa4	Guest Lectures are arranged in the university regularly	3.83	0.922	0.810	0.847
aa2	Teachers are able to inspire the students for study	4.03	0.872	0.812	0.846
aa1	Teachers are very enthusiastic in their teaching	4.08	0.852	0.808	0.824
aa7	University teacher has punctuality, efficiency and devotion to duty	3.86	0.804	0.747	0.807
aa8	Healthy and interactive communication is established between student and teacher	3.94	0.850	0.769	0.806
aa3	Teachers arranged the extra classes for the weak students	3.69	0.896	0.781	0.806
aa9	Learning environment is suitable	3.90	0.854	0.742	0.802
aa6	Ratio between no. of teacher and students is satisfactory	3.79	0.810	0.733	0.796
Eigenvalue =15.382, Variance explained = 15.61					
Factor 2	Infrastructure facilities (if)	3.6095	1.05014		
if9	University has well maintained sports ground	4.08	0.818	0.795	0.838
if1	Well maintained study Rooms,	4.07	0.797	0.796	0.837

Items label	Statements	Mean	S.D.	Communalities	Factor loading
	committee rooms and common rooms are available.				
if12	Transport facility is sufficient in campus area.	3.90	0.804	0.800	0.830
if4	Facilities of fresh drinking water and wash rooms are available	3.91	0.797	0.796	0.824
if13	University has open green area with colorful plants	4.12	0.826	0.742	0.822
if10	University has Research Centre for promotion of Research	3.98	0.827	0.713	0.797
if6	Facilities of canteen / mess are available	4.04	0.817	0.734	0.780
if7	Health Care facilities are provided by the university.	4.01	0.770	0.718	0.747
if3	Proper space is available for parking	3.85	0.740	0.492	0.621
Eigenvalue =7.621, Variance explained = 12.97					
Factor 3	Library Facilities (lf)	3.995	.677		
lf5	There is congenial environment for study	3.69	1.183	0.895	0.928
lf6	Proper monitoring and evaluation system are there to keep education and learning material under review	3.67	1.172	0.914	0.909
lf7	Study material is available for students	3.62	1.148	0.900	0.907
lf2	Web connection is available.	3.61	1.104	0.863	0.902
lf3	Library informed students regularly about the updating of Library	3.62	1.094	0.863	0.899
lf1	Library is rich and updated with latest material related to student's subjects.	3.53	1.121	0.826	0.887
lf8	Library staff is co-operative	3.52	1.086	0.830	0.867
Eigenvalue =3.900, Variance explained = 12.65					
Factor 4	University Administration (ua)	3.71	.791		
ua6	Scholarship is paid within Reasonable Time	3.70	0.915	0.680	.796
ua5	Administration department transparent in grading and examination process	3.68	0.908	0.661	0.766
ua1	Security and discipline is well maintained	3.82	0.890	0.633	0.740
ua2	Students complaints are often handled by the university	3.71	0.886	0.639	0.720
ua7	Administration staff accessible	3.72	0.934	0.587	0.691

Items label	Statements	Mean	S.D.	Communalities	Factor loading
	during office hours				
ua8	Administration maintains accurate and retrieval records	3.76	0.902	0.594	0.683
ua4	university has online platform for students to submit complaints	3.65	0.941	0.656	0.682
ua3	University pays sufficient attention to students moral development	3.70	0.885	0.553	0.661
Eigenvalue =3.387, Variance explained = 10.16					
Factor 5	Placement service (pa)	2.46	0.905		
pa2	Carrier counseling is conducted regularly	2.38	1.006	0.856	0.851
pa3	Ratio of placement in campus is higher	2.38	0.971	0.850	0.851
pa4	Placement seminars are organized Regularly	2.51	1.042	0.838	0.831
pa1	Student participate actively in the placement services	2.57	1.024	0.787	0.801
pa5	Past Placements records are high	2.46	.955	0.792	0.799
Eigenvalue =2.627, Variance explained = 8.43					
Factor 6	Extracurricular Activities (ea)	3.89	0.731		
ea2	University encourage students to participate in extracurricular activities	3.90	0.838	0.834	0.834
ea1	University makes emphasis on developing sports activities	4.04	0.799	0.788	0.797
ea4	University organized NCC/NSS Camps regularly	3.77	0.801	0.792	0.787
ea3	Deserving students get scholarship for participate in extracurricular activities	3.85	0.847	0.787	0.765
Eigenvalue =2.008, Variance explained = 6.23					
Factor 7	Students motivation cell (smc)	3.81	0.735		
smc2	Grievances are solved properly	3.79	0.826	0.826	0.756
smc1	University has grievance Redressal cell	3.91	0.841	0.779	0.749
smc3	The university has intellectual quality assurance cell (IQAC)	3.76	0.809	0.793	0.733
smc4	IQAC cell work properly	3.80	0.824	0.788	0.726
Eigenvalue =1.381, Variance explained = 5.61					
Factor 8	Financial Administration (fa)	2.66	0.769		
fa1	Fee charge from students is reasonable	2.61	0.861	0.782	0.762
fa2	Scholarships are offered to deserving students	2.63	0.848	0.781	0.757

Items label	Statements	Mean	S.D.	Communalities	Factor loading
fa3	Fee structure is transparent	2.75	0.819	0.749	0.710

Eigenvalue = 1.312, Variance explained = 4.90

The first factor '**Academic Administration**' accounts for 15.61% variance having Eigen value 15.382. Factor loadings ranged from 0.851 to 0.796. The mean scores showed that students' response is satisfactory for academic administration of the university as the mean value are close to 4.

Second factor '**Infrastructure facilities**' explained 12.97% variance with **7.621**Eigen value. Mean score showed that students are satisfied with 'Infrastructure facilities' of the university.

Third factor '**Library Facilities**' found with 12.65% of variance with Eigen value 3.900 and factor loading ranged from 0.928 to 0.867. The mean score 3.99 shows that students gave somewhat satisfied with library facilities of the university.

The fourth factor '**University Administration**' explained 10.16% variance with 3.387 Eigen value. The students respond neutral with university administration factor.

The fifth factor was labeled as '**Placement service**' accounts for 8.43% of variance. Items were loaded from 0.799 to 0.851 with 2.627 Eigen value. The overall mean score reveals that students are highly dissatisfied with placement service of the university.

Students were found satisfied with the sixth factor '**Extracurricular Activity**' which is consisted of four items that explained 6.23% of variance, with Eigen value 2.008. Overall students are satisfied with the extra-curricular activities provided by the college.

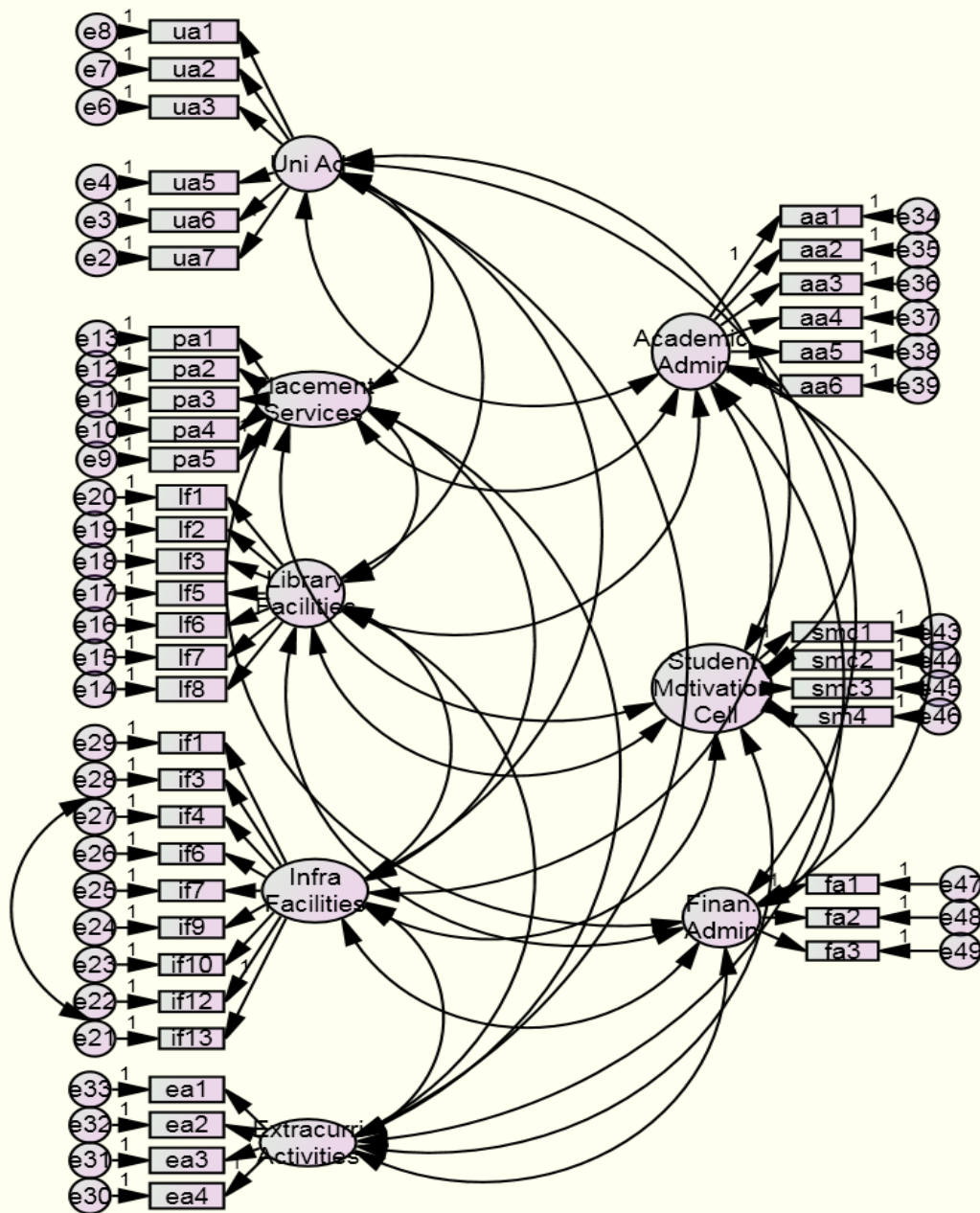
The seventh factor '**Students motivation cell**' of the university, which explained 5.61% variance and Eigen value, is 1.3. The overall mean score 3.81 which indicates that students are satisfied with students' motivation cell.

The eighth factor '**Financial Administration**' of the university administration accounts for 4.90% of total variance and 1.312 Eigen value with factor loadings from 0.762 to 0.710. The mean scores reveal that students are less satisfied with the financial administration.

5(b) Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) is a statistical model used in social science Research. Further to confirm eight factors structure of student satisfaction, confirmatory factors analysis has been conducted using Amos 18 oneight factors of university administration which are: Academic Administration (aa1, aa2, aa3, aa4, aa5 and aa6), Infrastructure facilities (if1, if3, if4, if6, if7, if9, if11, if12 and if13), Library Facilities (lf1, lf2, lf3, lf5, lf6, lf7 and lf8), University Administration (ua1, ua2, ua3, ua5, ua6 and ua7), Placement service (pa1, pa2, pa3, pa4 and pa5), Extracurricular Activity (ea1, ea2, ea3 and ea4), Students motivation cell (smc1, smc2, smc3 and smc4), and Financial Administration (fa1, fa2 and fa3). Initially CFA were Performed on 59 items but few items shows low loading. After removing 15 items, CFA was performed on 44 items.

The following figure 1



Source: author self-developed with the help of primary data

Table 3 : CFA Model Fit Indices

	Chi-square	d.f	P value	CFI	GFI	AGFI	RMSEA	RMR
Model indices	2387.28	873	0.00	0.901	0.950	0.709	0.084	0.042

CFI = comparative Fit index, **GFI**= Goodness of fit Index, **AGFI**=adjusted goodness of fit index, **RMSEA**= Root mean square Error of Approximation, **RMR**= Root mean square Residual

Confirmatory Factor Analysis

Table: 4

Confirmatory Factor Analysis Results: Items and their Standardized Estimates

Items label	Factors	Standardized Estimates
Factor 1	Academic Administration	
aa1	Teachers are very enthusiastic in their teaching	0.796
aa2	Teachers are able to inspire the students for study	0.980
aa3	Teachers arranged the extra classes for the weak students	0.638
aa4	Guest Lectures are arranged in the university regularly	0.816
aa5	Teachers are easily available	0.764
aa6	Ratio between no of teacher and student is satisfactory	0.816
Factor 2	Infrastructure facilities	
if1	Well maintained study Rooms, committee rooms and common rooms are available	0.920
if3	Proper space is available for parking	0.538
if4	Facilities of fresh drinking water and wash rooms are available	0.657
if6	Facilities of canteen / mess are available	0.758
if7	Health Care facilities are provided by the university	0.739
if9	University has well maintained sports ground	0.978
if10	University has Research Centre for promotion of Research	0.744
if12	Transport facility is sufficient in campus area.	0.662
if13	University has open green area with colorful plants.	0.740
Factor 3	Library Facilities	
lf1	Library is rich and updated with latest material related to student's subjects.	0.884
lf2	Web connection is available.	0.899
lf3	Library informed students regularly about the updating of Library.	0.917
lf5	There is congenial environment for study.	0.933
lf6	Proper monitoring and evaluation system are there to keep education and learning material under review.	0.951
lf7	Study material is available for student.	0.942
lf8	Library staff is co-operative	0.889
Factor 4	University Administration	
ua1	Security and discipline is well maintained.	0.866
ua2	Students' complaints are often handled by the University.	0.862
ua3	University pays sufficient attention to students moral development.	0.812
ua5	Administration department transparent in grading and examination process	0.862
ua6	Scholarship is paid within reasonable time.	0.874
ua7	Administration staff accessible during office hours.	0.852
Factor 5	Placement service	
pa1	Student participate actively in the placement services	0.855
pa2	Carrier counseling is conducted regularly.	0.898
pa3	Ratio of placement in campus is higher.	0.901

Items label	Factors	Standardized Estimates
pa4	Placement seminars are organized Regularly	0.893
pa5	Past Placements records are high	0.858
Factor 6	Extracurricular Activity	
ea1	University makes emphasis on developing sports activities	0.830
ea2	University encourage students to participate in extracurricular activities.	0.880
ea3	Deserving students get scholarship for participate in extracurricular activities.	0.839
ea4	University organized NCC/NSS Camps regularly.	0.855
Factor 7	Students motivation cell	
smc1	University has grievance Redressal cell.	0.824
smc2	Grievances are solved properly.	0.882
smc3	The university has intellectual quality assurance cell (IQAC)	0.848
smc4	IQAC cell work properly	0.856
Factor 8	Financial Administration	
fa1	Fee charge from students is reasonable.	0.840
fa2	Scholarship are offered to deserving students	0.891
fa3	Fee structure is transparent	0.871

Source: Calculated through AMOS 18.0 with the help of primary data

Table: 5 Convergent & Discriminant Validity

	CR (≥0.7)	AVE (≥0.5)	MSV	ASV	Smc	ua	ps	lf	if	ea	aa	fa
Smc	0.914	0.727	0.449	0.195	0.853							
Ua	0.942	0.731	0.221	0.118	0.277	0.855						
Ps	0.946	0.777	0.236	0.154	0.480	0.464	0.881					
Lf	0.974	0.840	0.179	0.047	0.043	0.204	0.121	0.917				
If	0.930	0.602	0.179	0.076	0.208	0.232	0.217	0.423	0.776			
Ea	0.913	0.725	0.249	0.164	0.499	0.381	0.370	0.226	0.346	0.851		
Aa	0.950	0.762	0.449	0.197	0.670	0.470	0.448	0.003	0.205	0.473	0.873	
Fa	0.901	0.753	0.315	0.168	0.561	0.273	0.486	0.207	0.209	0.468	0.494	0.868

CR = Composite reliability, AVE = Average variance extracted, MSV = Maximum shared variance, ASV = Average shared variance.

Source: Author self-developed using AMOS 18

(a) **Composite Reliability:** The table shows that composite reliabilities of the eight factors Academic Administration, Infrastructure facilities, Library Facilities, University Administration, Placement service, Extracurricular Activity, Students motivation cell and Financial Administration was 0.950, 0.930, 0.974, 0.942, 0.946, 0.913, 0.914 and 0.901 respectively. All the eight constructs achieved the suggested level

(b) **Average Variance Extracted:** The Table shows the average variance extracted value for all the eight constructs academic administration, infrastructure facilities, library facilities, university administration, placement service, extracurricular activity, students motivation cell and financial administration was 0.762, 0.602, 0.840, 0.731, 0.777, 0.725, 0.727, 0.753 respectively, which satisfies the recommended limit (AVE >0.5).

Conditions for convergent validity:

CR>AVE

AVE>0.5

Part 111 Impact of university administration on student satisfaction:

In order to examine the impact of various factors of student satisfaction on university administration Structural EquationModelling (SEM) was used. The SEM analysis, the impact of independent variables on the dependent variable. The eight hypotheses used to test the impact of university administration factors on overall satisfaction of students. Eight factors of university administration i.e.Academic Administration(6 items),Infrastructure Facilities(9 items),Library Facilities(7 items),University Administration(6 items),Placement Service(5 items),Extracurricular Activity(4 items),Students Motivation Cell(4 items) and Financial Administration (3 items) were taken as independent variable and overall student satisfaction (5 items) wastaken as dependent variable.

The following eight hypothesis had been framed with respects to factors of student satisfaction:

H₀1:Academic administration has no significant impact on students' satisfaction.

H₀2: Infrastructure facilities has no significant impact on students' satisfaction.

H₀3:Library facilities has no significant impact on students' satisfaction.

H₀4: University administration has no significant impact on students' satisfaction.

H₀5: Placement service has no significant impact on students' satisfaction.

H₀6: Extracurricular activities has no significant impact on students' satisfaction.

H₀7: Students motivation cell has no significant impact on students' satisfaction.

H₀8: Financial administration has no significant impact on students' satisfaction

Table: 6
Summary of Hypotheses Testing

			Unstandardiz ed Estimate	t-value	S.E.	p-value	Standardized estimates (β)
Sat	<---	aa	0.482	11.555*	0.042	0.001	0.624
Sat	<---	if	0.387	2.424*	0.033	0.001	0.472
Sat	<---	smc	0.348	8.540*	0.041	0.001	0.413
Sat	<---	ea	0.273	7.002*	0.039	0.001	0.315
Sat	<---	ua	0.172	5.529*	0.031	0.001	0.234
Sat	<---	lf	-0.003	-0.14	0.024	0.888(NS)	-0.006
Sat	<---	pa	-0.173	-5.703	0.030	0.001	-0.242
Sat	<---	fa	-0.060	-1.714	0.035	0.087(NS)	-0.070

Source: Compiled from Primary Data

The coefficient of the determination R^2 of the model was 0.35, indicating that a total of 35% variance in contributing towards satisfaction of students is explained by the eight dimensions. The importance of the dimensions has been reflected through β standardized beta coefficients (Clemes *et al.*, 2008). Academic administration of the university was considered the most important factor for students satisfaction ($\beta=0.624$), followed by infrastructure facilities ($\beta=0.472$), students motivation cell ($\beta= 0.413$), extracurricular activity ($\beta=0.315$) and university administration ($\beta= 0.234$).

Table 6brings that factors academic administration ($\beta=0.482$, $t=11.555$, $p<0.01$), infrastructure facilities ($\beta=0.387$, $t=2.424$, $p<0.01$), students motivation cell ($\beta=0.348$, $t=8.540$, $p<0.05$) and extracurricular activities ($\beta=0.273$, $t=7.002$, $p<0.01$) and university

administration ($\beta=0.172$, $t=5.529$, $p<0.01$) have $p<0.01$) and significant impact on students' satisfaction. However, placement services exhibited ($\beta=-0.173$, $t=-5.703$, $p<0.005$) negative and significant impact on students satisfaction while Library facilities ($\beta=-0.003$, $t=-0.141$, $p>0.05$) and financial administration ($\beta=-0.060$, $t=-1.714$, $p>0.05$) have negative but insignificant impact on satisfaction of students at 0.05 level of significance. However, for placement service null hypothesis although rejected but results of SEM indicated that for placement service t-value is negative and significant, thus, placement service has adverse impact upon student satisfaction. Thus, hypotheses H1, H2, H4, H5 and H7 have been rejected since these turned significant and have impact on student satisfaction. However, H3 and H8 got accepted since these turned insignificant and do not impact students' satisfaction

Conclusion and limitations of the Study: Thus it can be concluded from the study that quality of service is of great important that determines the satisfaction of students in higher education institutions. Quality of services is directly related to infrastructure facilities, library facilities academic administration support, extracurricular activities, Placement facilities and financial administration of higher education institutions. The study concluded that students are highly satisfied with infrastructure facilities, academic administration, extracurricular activities, and have dissatisfaction towards placement facilities and financial administration of the University. The Study also suffers from limitations that (a) The present study is based upon the responses given by the respondents that might be biased. However due attention has been paid to collect true responses by personally approaching the respondents. (b) The sample used is a part of the total student population of the university and may not be truly representative (c) collecting primary data requires sufficient time for designing instruments, distributing them and analysing responses. and establishing partnership with industries for research Projects, Internships and solving real world

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