

# Evaluation of Service Quality in Higher Educational Institution in Uttarakhand: A Cluster Analysis



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## Abstract

In the present competitive environment, higher educational institution is facing difficulties in gaining competitive edge in their own target market. The concept of service enable educational institutions to attract and retain students should be studied seriously as many options are opened to them. Thus, searching for new and creative ways to attract, encourage and maintain stronger relationships with students is vital for each higher education institution to have a competitive edge in the future. Present research work is taken up with the objective to examine the service quality and its relative importance as perceived by students through an empirical study of higher educational institution in Uttarakhand. The SERVQUAL instrument was used in this study to assess the five service quality dimensions of reliability, responsiveness, assurance, empathy and tangibles. The highest mean score was found in the tangibility factor with mean (3.9094). the study also indicated that there were no significant differences in the perceived rating of different components of service quality across gender, age and religion, caste and program of study. Cluster analysis using SPSS software was carried out and it was found that all segment of student are of the opinion that tangibility aspect of service component must be given more focus to bring in service quality. Therefore, higher educational institutions may improve their services in the light of discussed dimensions of SERVQUAL as perceived by students.

**Keywords:** Service Quality, SERVQUAL, Cluster Analysis,

## Introduction

The exponential growth of higher educational institution in number has made it difficult to achieve its competitiveness with out quality. Student attraction and retention has become challenge before institution in the present competitive environment. (Cubillo-Pinilla et al., 2009). With the liberalization and globalization as well as privatization , many options are open to students at national and international level and hence institutions have to find the mean to attract the students and adapt service quality model to satisfy them and retain them for future. (Markovic, 2005). It ihas imperative for higher educational institution to find the way to attract, encourage and maintain stronger relationships with students. The concept of service quality in higher education and its implementation has become vital for attracting and retaining students (Angell et al., 2008).

The service quality in higher education institution are extensively used for engaging the student in a professional way by service marketing specialists. The increasing competitive and dynamic educational environment are forcing institution to adapt means of student satisfaction. (Usman, 2010; Altbach, 1998; Arambewela and Hall, 2009). Zeithaml and Bitner (2003) defined service quality (SQ) as a focused assessment reflecting customer's perception of specific dimensions of services provided to them. With the increasing number of higher education institutions in India, universities as well as higher educational institution are forced to adapt service quality to attract more students. To achieve this goal, the universities are competing to provide the students with all possible satisfaction means through providing efficient services; five dimensional of service quality (tangibility, responsiveness, assurance, reliability, empathy )and its permutation and combination are implemented to make the service more effective and relevant to the students. therefore this study aims to evaluate the service quality dimension as perceived by the students . accessibility of researcher with the student of higher

educational institute of Dehradun has motivated to choose them for proposed study.

#### **Review of Literature**

Empirical study on the subject confirms that concept of service quality has been successfully applied in many service sector organization such as health care (Youseff et al. 1996, Run, (2009)); information systems (Dyke 1999); local authority (Bryslund and Curry, 2000); education (Faganel, Armand (2010), Hasan, H.F.A. et.al. (2008), Jain, R., Sinha, G. & De, S.K. (2010), Khan, M.M, Ahmed, I & Nawaz, M.M (2011), Rasli, A., Shekarchizadeh, A., & Iqbal, M.J. (2012)). Authors like Khodayari & Khodayari, 2011; Mahadzirah & Wan, 2003 emphasis on the importance of student perception of higher educational institute experience and suggested to become more student centric.

A modified version of SERVQUAL (called EduQUAL, developed by Narang, 2012 on the basis of past studies Aghamolaei & Zare, 2008; Anderson, 1995; Babakus & Mangold, 1992; Bigné, Moliner, & Sánchez, 2003 has been used to measure perceptions of service quality in educational sector . the result was found found to be reliable and valid and in conformance of the past studies.

Conceptualizing the Service quality management and its implementation in higher educational institution has become a great challenge (Quinn et al., 2009). The aforementioned researchers have also defined Service Quality in Higher Education in terms of educational, administration and supporting services. Trivellas and Dargenidou (2009b) emphasize that service quality(SQ) can be enhanced if there is sustainability in clarity, accuracy and reliability of the services provided with no particular aspect standing out to both internal and external customers of the institution. Furthermore, Govender and Ramroop (2012) argue that in Higher Education, a supporting environment for internal customers to understand their roles in creating a service, will impact the perceptions of service, an implication for universities to promote a positive environment that will improve perceptions of the service provider.

Tariq SM, Waleed H. & Chaubeyds (2019) in their study on Framework for Improving Quality and Ranking of Higher Educational Institutions: An exploration emphasizes that higher education qualities can be improved by developing goodwill among students and to develop goodwill they have to adopt Quality assurance functions and develop excellence, perfection, standards, value additions, competency, efficiency, effectiveness, consistency and relevancy in their institution. They have to standardise their teaching quality, have to justify the learning outcomes, have to meet out the expectations of participants, have to develop accountability, have to arrest degradation in quality of institutions, have to protect the beneficiaries of the society, have to develop effective mechanism to design and evaluate their plans and strategies and have to consolidate excellence in research and teaching. "Quality is linked to strategic plan" (Terziovski & Dean, 1998). Quality in education is actually the competitive weapon to attain

competitive edge over the other educational institutions globally (Mahapatra & Khan, 2007).

In the past few decades, the higher educational sector industry has witnessed massive change in terms of policy, structure and status. Certain issues like privatization and stiff competition among higher learning institutions are now become common in most of the countries across the globe. The globalization, privatization and liberalization has increased the further completion in this industry. The concept of service quality in higher educational institution in one of the out come of these policies across the nations. Authors like Hill (1995), Sandhu & Bala, 2011 Sandhu & Bala, 2011 have explained service quality in higher educational institution and beliefs that higher education is a service industry and service quality service quality is the determinant of the success of this industry. In view of this, higher education institutions must assess the quality of their services since outstanding service quality can provide them with competitive advantage. The definition of service quality can be provided from the perspective of how the consumers or users of the service judge the service based on what they may have experienced. The service quality construct in the services literature is based on perceived quality. Zeithaml (1987) and Zammuto et al (1996) define perceived quality as the consumer's judgment about an entity's overall experience or superiority. In higher education institutions, perceived service quality can be the product of evaluating a number of service encounters for a student and these could range from encounters with administrative staff, to encounters with lecturers, librarian and security staff. If an institution consistency provides services at a level that exceeds customer expectations, the services will be evaluated as high quality but if the services fail to meet customer expectations, the services will be judged as poor quality (Zammuto et al, 1996). In the higher education sector, service quality is considered as a key determinant of the performance of higher education institutions and in view of this , Zeithaml et al (1990) propose that service quality be defined as the conformance to student specifications.

Research Questions: There exist a number of previous studies highlighting the factors affecting service quality perception of students in higher education, but there is requirement of separate studies to address the service quality in management education. The reason being, business schools require a different type of service environment where they can address knowing-doing gap (Nohria, 2012). Also, the perception of students in management education would depend on different factors, because they expect a different type of service environment (Seth et al., 2005). Although, some of the previous studies have identified factors affecting service quality perceptions of students in management education, but very few of these studies have highlighted the perception of students as a hierarchical construct. Recently, Choudhury (2015) also explored the dimensions of service quality perception of students in business schools and supported that service Measuring service quality perception of students in

business schools 481 quality perception of students is a multidimensional construct. As the service quality in education operates at several levels of abstraction (Jain et al., 2011); therefore, there is a requirement of a multidimensional and hierarchal structure for service quality in management education. This study fulfils this gap by answering the following questions: after identifying the area of the proposed research, a *research question* is raised to get an answerable inquiry into a specific. In fact answer to the research question is the research statement. The following research question was raised to get an answerable enquiry into the evaluation of service quality of higher education. These are as

1. Does the student's evaluation of service quality differ by the field of study?
2. Does the student's evaluation of service quality differ by the demographic characteristics of respondents?

Globalization and technological developments today affect higher educational institutions in India. Adapting to such rapid changes require concentrated efforts of university as well higher educational institutions to evoke change and meet the compliance with standard. Higher education institutions across the world have experienced the introduction of processes for quality assurance. The increasing competition among higher education institutions to attract highly qualified students toward achieving high academic profiles is forcing them to pay more attention to service quality issues. This makes it prudent to examine whether the quality process has produced the enhancement of core outputs. This study is taken up with the broader objectives to examine the service quality and its importance as perceived by students through an empirical study of Universities at Uttarakhand. The specific objectives of the study are:

1. To study about the service quality dimension and its implication in higher educational institutions in Uttarakhand State.
2. To evaluate the service quality dimensions in higher educational institutions as perceived by students.
3. To prepare the cluster of student on the basis of their preference of various dimension of service qualities in higher educational institutions.

#### Methodology

**Table 1 indicates the socio-demographic characteristics of the respondents**

	Description	No of respondents	Percentage
		207	100
Age wise Classification of Respondents	Upto 18 years	19	9.2
	19-21 years	91	44.0
	22-24 years	89	43.0
	25-27 years	7	3.4
	More then 27 years	1	.5
Gender Category	Male	151	72.9
	Female	56	27.1
Marital Category	Married	1	.5
	Unmarried	206	99.5
Education level	Class 12	113	54.6
	12 with Diploma	2	1.0
	University – Graduate	89	43.0
	University – Postgraduate	3	1.4

The research methodology is the important element of every research. Present study is descriptive in nature. The data was collected from student of B.Tech and MBA from some selected higher educational institute of Uttarakhand. Students were invited to participate in the study through survey method.. A structured questionnaire was designed covering different dimension of service quality of higher educational institution on the basis of empirical findings of past researches and existing review of related literature. The existing literature on the subject like Narang2012, Zeithaml et al (1990) , Parasuraman et al., (1985) LeBlanc and Nguyen (1997) and Landru m et al., (2009) has helped in the preparation of the questionnaire and questions were selected based on related studies. Majority of them were modified by the researcher in the context of specific problem under investigation. Students were asked to rate the statement on a scale of 1 to 5. A total of 237 students participated in the survey consumers participated in the study, with a final valid 207 questionnaire being used in this study. Survey questionnaire consists of two part. First part of the questionnaire is related to demographic characteristics of respondents. The first section of the questionnaire contained questions to examine surveyed consumers' demographic profile. The second part of the questionnaire is related to service quality of higher educational institutions in which 5 items are Tangibility, 4 items are related to reliability, 4 items are related to responsiveness, 4 item is related to assurance and 5 items are related to empathy. In order to ensure the validity of survey instrument, the initial questionnaire was given to a panel of experts and faculty members to judge its content's validity, the clarity of its items meaning and to assure its linkages with the study objectives. In order to validate the reliability, the questionnaire was pilot tested using 25 respondents, representing 12% of the total sample size, who were considered the representatives of the study population. The value of Cronbach's alpha was found 0.948, which suggested the acceptable level of reliability of the questionnaire. The data thus received was systematically arranged, tabulated and analyzed using SPSS 22. Data analysis involves descriptive statistics using SPSS 22 and cluster analysis for the classifying the respondents.

# Shrinkhla Ek Shodhparak Vaicharik Patrika

Family Income level	Below Rs. 10000PM	26	12.6
	Rs 10000-Rs 25000PM	60	29.0
	Rs 25000-RS 50000PM	53	25.6
	Rs 50000-Rs 75000PM	36	17.4
	Above Rs 75000PM	32	15.5
Residential Background	Urban	129	62.3
	Rural	78	37.7
Religion	Hindu	183	88.4
	Muslim	16	7.7
	Sikh	3	1.4
	Baudh	2	1.0
	Christian	3	1.4
Caste	General	160	77.3
	OBC	43	20.8
	SC	4	1.9

**Inference**

The information presented in the table indicates the socio demographic characteristics of respondents. Table indicates that sample is dominated by the respondents in the age group of 19-21 ears as 44.0% respondent's falls into this category. Another 43% respondents are in the age group of 2225 years of their age. 9.2% respondents are in the age of upto 18 years. Very less respondents are found to be in the age group above

25years. Most of the respondents are male and unmarried category respondents. Sample indicates that 54.6% respondents are educated upto intermediate level. And 43% respondents are educated upto graduation. It is observed that sample is the combination of average income group earning from Rs.10000 to Rs50000 as 54.6% respondents falls into this group. Majority of the students are from urban back group Hindu religion and from general caste categories.

**Table2: Program of Study**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MBA	89	43.0	43.0	43.0
	B. Tech	118	57.0	57.0	100.0
	Total	207	100.0	100.0	

**Inference**

Several studies in the past indicated analyzed the similarities and dissimilarities between technical and non technical education service and found different critical success factor improving

service quality. (Palani et al. 2006). With this into consideration, effort was directed to classify the study according to program study. It is found that 43% respondents are from B.Tech category and remaining 57% respondents are the management program.

**Table 3: Major influencers in selecting this University**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Self	80	38.6	38.6	38.6
	Parents	31	15.0	15.0	53.6
	Friends	59	28.5	28.5	82.1
	Advertisements	31	15.0	15.0	97.1
	Coaching Centre	6	2.9	2.9	100.0
	Total	207	100.0	100.0	

**Inference**

Student passes through a critical stage in choosing a particular programe of study and under such situation many factors influence and assist them in making decision and choosing particular course. Study indicates self choice was the prime factor

influenced students to get admission and chose their choice of institution as it was indicated by 38.6% respondents in the sample. Other 15.0%, 28.5%, 15% and 2.9% respondents respectively indicated Parents, Friends, Advertisements and Coaching Centre played significant role in selecting their choice of institution.

**Table4: Service Quality in Higher Educational Institutions: ADescriptive Statistics**

	Reliability	Mean	Std. Deviation	Factor Loading
<b>Tangibility</b>	<b>798</b>	<b>3.9094</b>	<b>.74265</b>	
The faculty members of this institution are supported with modern and latest equipment.		3.5459	1.01760	.584
The physical facilities of this institution are attractive and appealing.		4.1063	.89676	.678
All the staff of this institution is well dressed and keeps them self up to date.		3.9227	.93675	.632
We have a good library equipped with latest literature of student's interest.		4.0628	.90892	.675
The staff is committed and delivers in time if something is		3.6280	1.16243	.646

promised.				
<b>Reliability</b>	<b>.714</b>	<b>3.0947</b>	<b>.85214</b>	
Staff is courteous in solving student's problem.		2.7391	1.36160	.726
Institute is having knowledgeable professor for teaching students.		3.3382	1.21944	.723
The institutes always honor the teaching and exam schedule.		2.5362	1.31363	.941
The institute is having well structured documentation and keeps accurate records.		3.2319	1.17182	.723
<b>Responsiveness</b>	<b>.884</b>	<b>3.3514</b>	<b>.96886</b>	
Any change in the schedule is properly communicated to students.		3.1643	1.23543	.603
institute well utilize Service hours of learning facilities by accommodating all students		3.4589	1.05986	.647
Teaching staff are very helping nature.		3.3865	1.13437	.556
Administrative staff handle students problem quickly.		3.3961	1.06013	.607
<b>Assurance</b>	<b>.854</b>	<b>3.4928</b>	<b>1.00693</b>	
The behavior of faculty staff enhances my confidence.		3.4831	1.27274	.689
Teaching staff are respected by students and student keep trust in him.		3.4251	1.21597	.733
Faculty staff is friendly and polite with students		3.6329	1.12797	.603
Students depend on Teaching staff in meeting their needs.		3.4300	1.20825	.660
<b>Empathy</b>	<b>.883</b>	<b>3.2406</b>	<b>1.00711</b>	
Faculty provide personal attention to every student		3.4300	1.15484	.656
Professors are flexible in the office in counseling students.		3.1498	1.28539	.620
students get personal attention by Staff members		2.9807	1.27318	.708
Faculty recognize the students need and committed in meeting their long term objectives		3.3237	1.16443	.759
Faculty understands the specific needs of students.		3.3188	1.21671	.633
Valid N (listwise)	207			

**Inference**

Descriptive statistics help to analyze the data by summarizing the data in a meaningful way. Primarily, Descriptive statistics are broken down into measures of central tendency (mean) and measures of variability (SD). We see from the table that out of various dimension of service quality like Tangibility, Reliability, Responsiveness, Assurance and Empathy; tangibility has scored highest mean 3.9094 and SD of .742. This indicates that tangibility factors like infrastructure support are rated highest by students. It was followed by Assurance with mean = 3.4928 and SD=1.00693. Highest SD of factors like empathy (SD= 1.100117) indicates that respondents view on this factor has heterogeneous. Composite reliability (CR) of the different components of service quality

was measured to know the reliability of the construct in the measurement model. CR is a more presenting way of overall reliability and it determines the consistency of the construct itself (Hair et al., 2010). Table shows the composite reliability (CR) of Tangibility is .798, Reliability is .714, Responsiveness is .884, Assurance is .854 and Empathy is .883. Reliability of more than .7 indicates that in the measurement model all constructs are having good reliability. The standard factor loading should always above 0.50 (Hair et al., 2010). All measurement items have standardized loading estimates of 0.5 or higher (ranging from 0.556 to 0.941) at the alpha level of more than 0.05, indicating the convergent validity of the measurement model.

**.Table5: One Way ANOVA analysis of Various components of Service Quality across Demographic characteristics of Respondents**

Service Quality	Age		Gender		Religion		Caste		Program of Study	
	F(DF4,201)	Sig.	F (DF1,205)	Sig.	F(DF4,201)	Sig.	F(DF2,204)	Sig	F9DF1,205)	Significance
Tangibility	.360	1.143	1.065	1.065	.394	.394	.394	.675	.234	.629
Reliability	.079	.946	.752	.752	.266	.266	.266	.767	1.103	.295
Responsiveness	.945	.669	2.707	2.707	.471	.471	.471	.625	.013	.910
Assurance	.550	2.898	.584	.584	.233	.233	.233	.792	.089	.766
Empathy	.803	.103	.502	.502	.719	.719	.719	.488	.955	.330

**Inference**

One way ANOVA analysis was carried out to test whether perceived mean score of various

components of service quality differs significantly across the demographic characteristics of respondents assuming null hypothesis as mean score

of various components of service quality does not differs significantly across the demographic characteristics of respondents. Test statistics confirms that p- value is greater than .05 in all the cases and hence null hypothesis is accepted and it is concluded that mean score of various components of service quality does not differs significantly across the demographic characteristics of respondents.

### Cluster Analysis

Cluster analysis is the statistical method which is primarily an exploratory analysis, basically

used to identify the structure within the data. It is also called segmentation analysis that tries to identify the homogeneous group of cases if the grouping is not previously known. In cluster analysis, we do not make any distinction between dependent and independent variable. In our study, through cluster analysis, we divide all the respondents into cluster (or groups) on the basis of their similar motives toward service qualities. In this study five clusters are made as five service quality factors were identified in this study.

**Table6: Final Cluster Centers**

	Cluster				
	1	2	3	4	5
Tangibility	4.67	2.39	4.11	3.50	3.52
Reliability	4.16	1.69	3.21	2.05	2.82
Responsiveness	4.54	1.39	3.62	3.00	2.60
Assurance	4.63	1.43	3.75	2.11	3.23
Empathy	4.40	1.21	3.55	2.05	2.78

**Table 7: Number of Cases in each Cluster**

Cluster	1	2
	41.000	14.000
	84.000	19.000
	49.000	207.000
Valid		.000
Missing		

First cluster is composed of responses 41students whose first priority of service quality attributes is tangibility with mean of 4.67 followed by assurance with mean 4.63 , responsiveness with mean 4.54,empaty with mean of 4.40 , and reliability with mean of 4.16. Second cluster is of 14 students whose first priority of service quality components is tangibility with mean of 2.39, followed by reliability with mean 1.69 and assurance 1.43 and responsiveness with mean 1.39. Third cluster is of 84 students whose first choice of service quality components is tangibility with mean of 4.11. it was followed by assurance with mean 3.75, respnsiveness 3.62and empathy 3.55. Fourth cluster is of 19 students whose first choice tangibility with mean 3.50 followed by responsiveness with mean of 3.00 and assurance with mean 2.11. Fifth cluster is of 49 students whose fist preference is tangibility with mean 3.52 followed by assurance with mean of 3.23. The cluster composed of maximum responses is third cluster in which the most favored service quality measure is tangibility. It is significant to note that tangibility factor of service quality is rated highest in the entire cluster identified.

### Discussion and Conclusion

This study is taken up with the objective to examine the service quality and its relative importance as perceived by students through an empirical study of higher educational institution in Uttarakhand. The SERVQUAL instrument was used in this study to assess the five service quality dimensions of reliability, responsiveness, assurance, empathy and tangibles. The reliability value of the entire all variable ranged from .714 to 0. .883 similar to the studies similar to the finding of Khanchitpol

Yousapronpaiboon(2013) The highest mean score was found in the tangibility factor with mean (3.9094) and lowest standard deviation(SD=.74265) and lowest score was achieved in reliability factor of service quality(mean=3.0947) . Thus reliability, tangibles, responsiveness, assurance and empathy were important for students. In addition, results of this study showed that there were no significant differences in the perceived rating of different components of service quality across gender, age and religion, caste and program of study.

Clustering methods as applied in the study with the help of SPSS software to find the hidden patterns. Since most data is collected from the real word as in higher educational institutes contains numerical attributes, and hence k- mean clustering was carried out and we identified customers' profiles. The most important profile contains those student who prefers tangibility as an important component improving service quality of higher educational institutes. Finally, finding confirms that all segment of student are of the opinion that tangibility aspect of service component must be given more focus to bring in service quality. Therefore, higher educational institutions may improve their services in the light of discussed dimensions of SERVQUAL as perceived by student.

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