"Total Quality Management in Higher Education in India: A Comparative Study of Public & Private Institutions of Aligarh District in Uttar Pradesh".

Tarananum

Aligarh Muslim University,
Aligarh, Uttar Pradesh, India

ABSTRACT

The efficacy of education in human development can never be understated. Education is fundamental to every constituent of the society irrespective of gender, physical, racial, economic, geographical, cultural, or linguistic differences. Liberalization of the higher education sector has increased the access of students to the institutions of higher learning; students of today are far more informed and have more choices in terms of institutions to pursue their higher studies. In the age of competition, the institutions of higher learning need to understand the customers' (students') perceptions of service quality and to identify the gap between their expectations and these perceptions. The paper studies the stakeholder's perceptions of total quality in the present educational environment by using the modified service quality (SERVQUAL) instrument to measure five constructs: tangibles, reliability, responsiveness, assurance, and empathy.

The study has been done on 500 samples of students, their parents, teachers and head of the institutions who are pursuing higher education in the different streams such as management, technology, arts, commerce and physical sciences in different public and private institutions located in the Aligarh District of the north Indian state of Uttar Pradesh. A significantly negative gap has been observed in the expectations and perceptions of the Total Quality Management in higher education, indicating a sense of dissatisfaction among the students.

Key Words: Higher Education, Total Quality, Management. Gap analysis

Introduction:

Higher education in India has witnessed a sea change in the last decade. From being a subsidized service to the masses, education services are becoming market oriented with increasing participation of the private sector, especially in the higher education sector. The traditional set-up for imparting higher education, comprising of the colleges, universities and other institutions, is facing stiff competition from the institutions in the private sector. Over the years, inertia has crept into the traditional set-up and despite of having the faculty with better qualifications and experience, their systems for total quality have not responded to the fast pace of change encompassing the education sector. The strategic orientation of the government on the issues concerning higher education has been on increasing access and expansion, equity and inclusion, and, quality and excellence. In practice, this has resulted in additional infrastructure and creating new institutions without a commensurate development of the systems to deliver better educational services.

This has resulted in a mismatch between the expected services and the services actually delivered thereby creating a gap. Higher education as a service can be said to be fulfilling the need for learning / acquiring knowledge and providing an intangible benefit (increment in aptitude, professional expertise, skills) produced with the help of a set of tangible (infrastructure)and intangible (faculty expertise and learning) means, where the buyer of the service does not get any ownership. Taking the SERVQUAL framework, the paper studied the service quality perceptions of the students and compared the service quality of the private and public sector institutions. The biggest expansion in higher education in India has been in the disciplines of engineering & technology, management and education. The increased capacity of the students' intake has been rather too fast and many of the institutions have to compete with each other for students' enrolments. They need to build their reputation by providing better services through quality equipment, physical facilities, employees, well-trained faculty, material (brochures or statements) and create a pull in the market. Interestingly, many institutions find that despite doing all these they are unable to get a sufficient number of students onto their campuses, implying that there is a gap in their perceptions and the students' perceptions of service quality. It is difficult to measure quality in comparison to goods as the specific standards cannot be determined due to involvement of human behaviour. The basis of the measurement was to evaluate the service

quality by comparing customer expectation with their perception. The business of education demands new concepts and approaches in order to survive in an increasingly competitive and professional environment. Due to increasing complexity, specialization, competitive nature of the business, the requirement of service marketing has emerged. In the view of the changing needs of customers, a changing world, changing life styles, knowledge explosion, population explosion and technology innovations there is a need for improvement in quality of services in the educational sector.

Traditionally this sector (education) avoided using even the word-of-mouth marketing; however, they are now seeking better ways to understand the segment and their customer, to ensure the delivery of quality services and to strengthen their positions amid a growing number of competitors. Education is a service industry. It needs to adopt techniques that help to measure the quality of services and customer satisfaction. Service quality has become a predominant focus of an advanced organization's strategic plan. Increasing attention paid to the service quality has resulted in more progress and profit in organizations. Higher education possesses all the characteristics of the service industry, i.e., intangible, heterogeneous, inseparability, variability, perishable, and the customer (student) participates in the process.

Review of Related Literature:
There are a number of studies that have successfully applied SERVQUAL to public sector service institutions such as in healthcare (Youseff et al. 1996); information systems (Dyke 1999); local authority (Brysland and Curry, 2000); education (Broadnurst, 2006; Brown, 2006; Markovic, 2006; Grammil, 2004; LaBay, 2003; Ham, 2003; Wever, 2002; Avdjieva, 2002; Hadikoemoro, 2001; Greiner, 2000; Kerlin, 2000; Lampley, 1999; Long, 1999). SERVQUAL has been used successfully in higher education research. Ham (2003) observed that SE RVQUAL has been administered by researchers investigating service quality in various industries including higher education by assessing expectations and perceptions with various determinants of service quality. Vaz & Mansori (2013) studied the impact of five factors of service quality (responsiveness, reliability, empathy, assurance, tangibility) on students' satisfaction at private universities and colleges and concluded that tangibility has an influence on satisfaction followed by empathy; responsiveness and assurance have a direct and positive effect on students' satisfaction.

Annamdevula & Bellamkonda (2012) identified the determinants to evaluate the service quality in the higher education sector and developed a new instrument called HiEdQUAL covering various service dimensions from the stand point of students as primary customers. Khan and Nawaz (2011) found that there was a significant relationship between the dimensions of service quality i.e. Reliability, Assurance Responsiveness and Empathy, with satisfaction; however the fifth factor, Tangibility, had an insignificant relationship with student satisfaction. It was also observed that higher the level of students' satisfaction greater was their willingness to put more efforts towards their studies. Shekarchizadeh et al., (2011) assessed the service quality perceptions and expectations of international postgraduate students studying in selected Malaysian universities through a gap analysis based on a modified SERVQUAL instrument and five factors in the form of professionalism, reliability, hospitality, tangibles, and commitment were identified. A similar kind of study was conducted by Barnes, (2010) using a modified SERVQUAL instrument to investigate expectations and perceptions of service quality among a sample of post-graduate Chinese students at a leading business and management school in the UK. The research findings suggest that the instrument was suitable for use in a Chinese and post-graduate context.

Katarne and Sharma, (2010) in their study titled, "Measurement of Service Quality of an Automobile Service Centre" examined and measured the current service quality level of an automobile service center. Service quality level depends on satisfaction /dissatisfaction of the customers. Dissatisfaction may be caused by various reasons. The reason(s) may be on all dimensions of the SERVQUAL model. They have tried to focus on two-fold objectives; first, to find out the most influencing factor of dissatisfaction, and second, to suggest the best possible solution for the root cause of dissatisfaction. In this study, satisfaction/dissatisfaction of the customer was measured by using the standard statistical tools, and an attempt was made to find out the reason(s) of dissatisfaction by applying root cause analysis. Current performance of the service center was not found to be up to the mark. Necessary suggestions were made and the service center started to execute them to improve the current service quality level. In another study, Ilhaamie, (2010) tried to identify the most important dimension and to examine the level of service quality, expectation and perception of the external customers towards the Malaysian public services. It was found that the factor of tangibility was the most important dimension. It also had the lowest scores in the factor of perception. On the other hand, service quality gap was neither the lowest nor the highest. Finally, these external customers had the highest expectation on the reliability of the Malaysian public service.

Siadat, (2008) stated that service quality is a concept that has aroused considerable interest and debate in the research literature because of the difficulties in both defining and measuring it with no overall consensus emerging on either. Customer satisfaction and service quality are often treated together as a function of the customer's perceptions and expectations, and research has shown that high service quality contributes significantly to profitability. This study also examined the service quality gap by comparing customers' expectations and their actual perceptions. Tahir and Bakar, (2007) in their study titled "Service Quality Gap and Customers' Satisfactions of commercial Banks in Malaysia" identified that commercial banks play a significant role in the economy, making up one of the biggest providers of services in the Malaysian economy. Hence, providing better service quality is vital as banks have to compete for customers. A descriptive statistical analysis (mean and paired t-test) was used to evaluate the level of service quality of Malaysia's commercial banks from the customers' perspective. This study examined the service quality gap by comparing customers' expectations and their actual perceptions. In addition, this study focused on their satisfaction towards the service provided by commercial banks. The results of the study indicated that the overall service quality provided by the commercial banks was below customers' expectations. Responsiveness was rated as the most important dimension followed by reliability, tangibility, assurance, and empathy. Further, the findings concluded that customers were slightly satisfied with the overall service quality of the banks. There have been similar kinds of studies conducted by various researchers for assessing the service quality of the education sector. Some of these studies have been done by Yan (2009), Aghamolaei et al. (2008), Sunanto et al. (2007), Harris (2001), Sarafidou (1994), etc. However, there are very few studies conducted in the higher education service sector in India from the service quality components' point of view. The present study analyses the customers' (students') perceptions and satisfaction regarding the service quality of the colleges of education and management institutes of North Haryana (India).

The studies collected for the present Investigation had covered the different aspects of all dependent and independent variables such as 'total quality management' was considered as one of the related dependent variables for which Sangeeta Sahney (2003), Shahida P., H. Rajashekhar, and R. Nargundkar (2007), Sanjaya Mishra, NAAC, (2006-07), W.B. Yeasts (2008), Hossein Nadali Najafabadi, Sanaz Sadeghi and Pouya Habibzadeh (2008), Rajni Bhalla (2012), T. Sudha, (2013), Amalia Venera Todorut (2013), S P Thyagarajan (2013), Ajeenkya D. Y. Patil, Dr. Gagandeep Nagra and Dr. R. Gopal (2014), and Mohammed Hasan. In'airat and Amer Hani Al-Kassem (2014),

conducted the studies to evaluate the nature, scope and application of total quality management in the higher education at national and international level. These studies had covered the factors affecting the total quality management and its causal effects. Few studies focussed on the rural area's higher education such as K.M. Joshi, Kinjal Vijay Ahir (2013) and Nitu Konwar, (2013), concluded that in spite of quantitative surge in the rural India the quality maintenance still has the long roadmap due to most of uncontrollable factors. Some studies are related to manage the quality among minority higher education institutions in the country such as W.B. Yeasts (2008), which conclude the status of quality in Kerala and also correlated with the minority institutions in the state. Molishree (2006), has critically analyzed the minority education institutions in the country.

The careful and thorough review of published literature on research problem revealed that the total quality management was studied by a large number of researchers at international and national level. Since this research problem is at national level, therefore the studies at national level were more in numbers than the International level. Almost all the studies were time bound, region specific and variable specific. Thus the research gap and area-specific reasons inspired the investigator to conduct this study.

OBJECTIVES OF THE STUDY:
The main objectives of the study were:

1. To compare the quantitative surge of higher education institutions owned by the public and private bodies.
2. To compare the total quality management of higher education institutions owned by the public and private bodies.
3. To compare the steps for the quality assurance of higher education taken by the Minorities & General higher education institutions.
4. To compare the total quality management of higher education followed by the Rural and Urban higher education institutions.

HYPOTHESES OF THE STUDY
The main Hypotheses of the study will be-

1. There is no significant quantitative surge between public and private higher education institutions
2. There is no significant difference in the total quality management between public and private higher education institutions.
3. There is no significant step for the quality assurance of higher education taken by the Minorities & General higher education institutions.

5. There is no significant difference in the total quality management of higher education followed by the Rural and Urban higher education institutions.

DELIMITATIONS:

1. The word TQM (Total Quality Management) is a very vast concept so this study is limited to certain necessary and minimal parameters of TQM especially in higher education.
2. The investigator has targeted to Aligarh district only. Though the Higher Education scenario in other regions of the nation may be different in nature so the outcome of the study may be considered as a referral rather than generalizing the problems and the TQM solutions of Higher Education.

Methodology:

Sampling Frame:
Primary and secondary information was collected to test the various parameters inherent in the objectives. The sampling frame consisted of 500 [200 students, 160 teachers, 100 parents and 40 heads] which were selected through stratified random sampling method. Frame was selected by using a multistage stratified sampling method along with the convenience sampling.

While selecting the colleges/institutions of higher education of Aligarh District the criteria was convenience sampling within the specified strata according to the objectives and research questions of the study which would be easy and economical to investigate the target population. To specify the research problems and objectives following table expressed the different strata for the study:

SN	STRATA	Students	Teachers	Parents	Heads	Total
1	**Govt. Institutions**	**100**	**80**	**50**	**20**	**250**
1.1	General	25	20	15	5	65
1.2	Minority	25	20	15	5	65
1.3	Rural	25	20	10	5	60
1.4	Urban	25	20	10	5	60
2	**Private Institutions**	**100**	**80**	**50**	**20**	**250**
2.1	General	25	20	15	5	65
2.2	Minority	25	20	15	5	65
2.3	Rural	25	20	10	5	60
2.4	Urban	25	20	10	5	60
	TOTAL	**200**	**160**	**100**	**40**	**500**

Research Tools Development:
Since the present study is a comparative study based on the data collected from both primary and secondary sources, interviews and observations. The data from the secondary sources related to TQM was collected from the colleges' records viz-a-viz marks registers, attendance registers, and admission registers etc.

All the processes of questionnaire development were carefully adhered during the development of questionnaire for students, teachers, parents and head of public and private institutions. Finally, the data collection tools were developed with 5 point Likert Scale.

To study the theoretical background of TQM in higher education in particular secondary sources were consulted. Those sources were comprised of:

1. The Guidelines on TQM from UGC, AIECT, NAAC, MCI and Bar Council.
2. Annual Reports on Higher Education,
3. Various Monitoring Reports on TQM in higher education,

4. Office orders and notifications related to TQM,
5. Letters and information relating to the quality maintenance program from NAAC, AIECT, MCI and Bar Council.

Data Collection:

For the purpose of complete and successful investigation following two types of data were collected:
1. Primary data collected through direct investigation from students, teachers, parents, and head of the institutions.
2. Secondary data collected from the school records for the purpose of comparative details as an evidence of TQM implementation reports from the office records.

Data Analysis:

Data analysis is the process of evaluating the data by using analytical and logical reasoning to examine each component of the data provided. Data from various sources was gathered, reviewed, and then analyzed to form some sort of findings or conclusions. There is a variety of specific data analysis methods some of which include data mining, text analytics, business intelligence, and data visualizations.

Statistical Techniques Employed:

The obtained data was analyzed by employing both Descriptive as well as Inferential Statistics. A brief description of it is given below:

Descriptive Statistics-

Descriptive Statistics are the statistical methods used to organize and summarize the data through the measures of Central Tendency and measures of Variability. In the present study Percentage was used to serve the purpose.

 - **Percentage:**
In the process of classification and tabulation the size of data might be fairly large in quantity and the figures may be very big so it may not be easy to draw inferences from them. To remove this difficulty percentages are calculated so that big figures are reduced to small ones and a relative study of the data is possible because absolute figures are unfit for the relative study. Percentage is obtained by a combination of two or more figures. They are derived from the absolute figures collected for the purpose of investigation. In percentage one figure is taken as base and is represented by 100 and the other figure is expressed as a ratio of this base.

- Inferential Statistics

In the present study the Inferential Statistics used were –ANOVA, Post-Hoc Scheffe's test, Paired sample t-test and One-sample t-test. For the sake of investigation of the established comparative variation of TQM between government & private colleges, Rural and Urban based colleges in the sampled schools the researcher employed suitable statistical techniques for analysing the quantitative data in accordance to the nature of variables involved and the objectives of the study.

One-Sample t-test:
 One-sample *t* -test is used only for testing the sample mean. Thus our hypothesis tests whether the average of our sample (M) suggests that our students come from a population with a known mean (m) or whether it comes from a different population. In the present study Observation Schedule was analysed with the help of One - Sample t-test. The formula used for computing the test was:

$$t = \frac{\bar{X} - \mu}{\frac{SD}{\sqrt{n-1}}}$$

Where, $\bar{X}$ = Real Mean

             μ = Assumed mean

Mean Value:

Mean is the simplest but most accurate measures of Central Tendency. It is computed by dividing the sum of all the scores by the number of scores popularly known as averages is technically called the 'Arithmetic Mean. The calculation procedure of Mean is hereunder:

$$\bar{X} = \frac{\Sigma X}{N}$$

(Best & Kahn)

Where:

$\bar{X}$ (Sometimes called the X-bar) is the symbol for the Mean.

Σ (The Greek letter *sigma*) is the symbol for summation (sum of).

X is the symbol for the scores in a distribution.

N is the symbol for the number of scores.

In mathematics, Mean has several different definitions depending on the context. In probability and statistics, mean and expected value are used synonymously to refer to one measure of the central tendency either of a probability distribution or of the random variable characterized by that distribution. Almost all used tools were analyzed on the same pattern

Conclusions:

Increased access to the institutions of higher learning combined with a larger number of such institutions has given more options to the students which results in evaluating these institutions minutely before taking admission. Students are well-informed and ambitious and they expect their educational institutions to provide them education service of outstanding quality. However, institutes providing higher education in India have not kept pace in terms of total quality and in all parameters the actual service delivered by them falls short of the expectations of the students. Management students are more ambitious and better informed than those studying in the education colleges and hence, have higher expectations from their institutions and accordingly the gap between their expectations and perceived service quality is greater than their counterparts in the education colleges. Of the dimensions of service quality most of the students perceive that their institutions lack in terms of empathy and reliability of service. There is a gap in the form of emotional connect between the students and their institutions as has been the tradition in the Indian education sector. A similar gap of high magnitude exists in reliability of service, primarily because of the high turnover of the faculty in these institutions. The direction of this gap between the perceptions and expectations of all the dimensions of service quality is negative, implying a sense of dissatisfaction among the students. Higher education institutions need a well-developed, comprehensive marketing strategy that is carefully communicated throughout the institution and the target market also.

The service marketing mix and service quality components will help higher education institutions to shape their service offerings according to the needs of their students.

The study has implications for entrepreneurs in the education industry who need to understand that the institutions are built by the infrastructure, faculty and the systems that integrate the resource and derive value out of them. The present focus on infrastructure needs to shift to other components of service quality and if these institutions have to survive, they cannot continue to give precedence to economic gain over students' satisfaction from their services. The transition from the traditional mindset towards education to a market-led approach for delivering education needs a second generation approach; otherwise the forthcoming globalization of education can become challenging for these institutes. For the regulators, the study suggests that their evaluation and accreditation of the institutions of higher education must not be confined to the physical infrastructure. They must help and regulate the private sector to build the systems that can deliver better services to the aspirants of higher learning.

Suggestions:
The study suggested to all the stakeholders separately to maintain the quality in higher education. All the stakeholders have something to contribute for the sake of improvement.

(1) For the students it has been suggested to keep their eyes open while choosing the institutions and the courses. They should

be sensitive about their abilities, aims, needs and job orientation factors. They should choose the institution on the basis of TQM adherence by the institutions.

(2) For parents, it is suggested that they should be conscious to choose the institutions by observing the financial as well as output factors. They should be more concerned about the quality service providers rather than providing the degrees in the easy manner.

(3) Teachers have vital accountability to maintain the quality. They should be conscious about adhering the TQM parameter and its follow-up according to the guidelines provided by the competent authorities.

(4) The Head of the Institutes should be asked to provide the conducive environment to maintain the quality in higher education. The heads should be accountable to prefer the qualitative growth rather than the quantitative surge related to the admission of the students.

Further Research
A researcher aspiring to work in this area can look for possible market positioning strategies on the basis of total quality of the institutions of higher education. Behavioural prediction studies, modelling students' perceptions and the consequent behavioural outcomes could be another interesting extension of the study.

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