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A STUDY ON SERVQUAL DIMENSIONS IN SELF FINANCING ENGINEERING INSTITUTES WITH REFERENCE TO TAMILNADU

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Abstract— *The intensified competition among higher education mirrors that found within the service sector in general. The response of many firms to the heightened call for enhanced quality was to implement continuous improvement programs such as total quality management and/or Six Sigma. A key tenet to these philosophies is that organizations should continually assess customer perceptions of service quality. Over the last three decades, higher education institutions have experienced dramatic shifts in both their funding formulas and student populations. The paper studies the students' and faculty perceptions of service quality in the current scenario, using the service quality (SERVQUAL) instrument to measure five constructs: tangibles, reliability, responsiveness, assurance, and empathy. The study has been done on 250 students and faculty members of self-financing engineering institute in Tamilnadu. A significantly negative gap is observed in the expectations and perceptions of the service quality of higher education, indicating a sense of dissatisfaction among the students and faculty.*

Keywords— *SERVQUAL, Gap Analysis, Students, Faculty, Engineering Institute.*

INTRODUCTION

Over the last three decades, higher education institutions have experienced dramatic shifts in both their funding formulas and student populations. Creating a competitive advantage, once a concept largely foreign to higher education, has become a driving force (Oldfield & Baron, 2000). The myriad of stakeholders involved in or influenced by higher education are now seeking evidence of institutions' effectiveness in achieving educational goals. Although consensus among these stakeholders as to the definition of quality education may vary by segment, the stakeholders are of the same mindset in calling for indicators that capture performance of all those involved in executing and improving the delivery of higher education (Nedwek & Neal, 1994). The intensified competition among higher education mirrors that found within the service sector in general. The response of many firms to the heightened call for enhanced quality was to implement continuous improvement programs such as total quality management and/or Six Sigma. A key tenet to these philosophies is that organizations should continually assess customer perceptions of service quality. Only when data are collected and analyzed can real improvements be made (Jensen & Artz, 2005). Universities are giving serious consideration to the issue of service quality assessment for a multitude of reasons, arguably the two most important of which are: students report that word-of-mouth recommendations play a large role in their decision to choose a university and both university quality assurance and independent assessment evaluators place heavy emphasis on the student experience as one of their assessment criteria (Cuthbert, 1996). The underlying theory is that institutions that continually improve service quality and delivery are more likely to generate high levels of customer satisfaction, resulting in both increased customer loyalty (namely, a higher retention of the current student population), and decreased costs of attracting new students (through positive word of mouth from the students and higher independent ratings).

Recently, this customer-centric approach of service quality has gained momentum in educational literature as the increasing cost of education has created a new generation of students with greater customer awareness than ever before. As Oldfield and Baron (2000) pointed out, the "interaction between customer and service organization lies at the heart of the service delivery." Employees who deliver the service, in this case the instructor, are of key importance to both the customers they serve, the students, and the employer they represent, the university. In some regards, the employee (instructor) may be the most visible route by which the employer (the university) can distinguish itself.

SERVQUAL scale. However, even as higher education continues to strive toward customer-oriented strategies, very little work has been done to combine education literature with service management and marketing research. This research bridges this gap by applying the SERVQUAL scale within a classroom setting. Can SERVQUAL, a valid and reliable customer-centric scale used to measure the quality of service delivery in environments as diverse as retail and business consulting, be used to measure and thus ultimately improve the quality of service delivery in higher education? In other words, can this well-validated scale be innovatively applied to measure student perceptions of classroom delivery? This question is of paramount importance to all stakeholders in higher education. Better measures of the customers' voices through their assessment of service quality may ultimately lead to improved educational experience (student), increased professional development (instructor), higher university ranking (university itself), better-qualified graduates (community), and so on.

The Challenging road ahead for Education sector

It is imperative to understand how the student perceives the performance of quality service and also the factors which influences service quality especially in management education institutes in Indian context. Students are considered to be a customer and also a product of their own. So, quality of education has to be monitored regularly because students (customers) are directly involved in the education process, which is not an easy task as we discuss. The "Quality is what customers perceives" sticking on the notion, the likes and dislikes of the students are different according to the demographic profile and the developing trend in the field of education. It becomes a great challenge to manage the students right from the school level till they reach the college and higher education cadre.

Moreover, the recent invasion of the foreign universities, in India is also considered as the greatest challenge and at the same time the opportunity to prove the potential of the skilled faculty and the dedicated management team to showcase their efforts to nourish the tree of academics. The government is also encouraging the start-up of international universities in the various parts of India and that could lead to the flow of foreign nationals to our nation on educational and cultural exchange a program that strengthens the economic and political roots in India.

Current scenario of Indian Higher Education Sector

A comparison of the Indian engineering colleges with some of the leading institutions of the world shows that it is possible for institutions to have student to faculty ratio of 15:1 or more and yet maintain a significant research output. In the report peer reviewed journal publications per faculty and UG engineering degrees per faculty are used as indicators of the research and teaching output of institutions. Most Indian institutions are improving their research output but are below the norms attained by some of the best international institutions like MIT, Stanford etc. The challenge for our engineering education system is to make the transition from primarily teaching institutions to teaching and research institutions. We developed a normative scenario that increases the output of quality engineering graduates from Tier 1 (IITs, IISc) and Tier 2 (NITs, IIITMs) institutions and increases the engineering Ph.D output to 10,000 per year. This would involve the launch of a National Ph.D initiative. A series of initiatives are required to attract our brightest students to pursue research. This would need partnerships and commitment from industries, strengthening existing Ph.D programmes and research facilities and facilitating quality jobs for the doctoral students. One of the biggest constraints for the development of engineering education in the country is the shortage of quality faculty. This is linked to the issue of less number of Ph.Ds, salaries and incentives for engineering educators. Steps to address this must consider incentivising performance, enhanced societal and industry linkages and a periodic review mechanism. There is a need for the industry, government and academia to formulate a strategy for engineering and science education in India. We need to have a mechanism to identify important areas and disciplines that should grow and develop policies and institutions that facilitate this.

There needs to be a high-level think tank that reviews the higher engineering and science education system in India and provides direction for future growth. It is important to understand the actual trends in numbers, placements, salaries, employability, research output and compare and benchmark performance with other institutions. An understanding of the reality should form the basis of policy changes that ensure that the engineering education system meets the changing needs of the industry and society.

Recent Statistics in the Academia

There were just about 20 Universities and 500 Colleges at the time of independence, today these numbers have grown exponentially. The current higher education sector in India: Have a total of 574 universities. 44 central universities, 286 state universities, 111state private universities, 129 deemed universities and 4 institutions established through state legislation, 30 Institutions of National Importance, 45 technical institutes, 13 management institutes, 4 information technology institutes, 6 science and research institutes and 3 planning and architecture institutes. Currently, the Government spends around 3.8% of its GDP on education. According to the 2011 census, the total literacy rate in India is 74.04% compared to the world average of 83.4% (2008), The female literacy rate is 65.46% and male literacy rate is 82.14%.

REVIEW OF LITERATURE

Gronroos (1983) distinguished between "technical quality" (what is delivered) and "functional quality" (how it is delivered). He believes the latter is critical to perceptions of service quality. There are various classification schemes available to view service quality as an integration of various components of it.

Lehtinen (1983) views service quality in terms of "process quality" and "output quality". Process quality is judged by the customer during service. Output quality is judged by the customer after the service is performed. With all forms of classification and sub-classification to service process, the ultimate aim is to satisfy customer for long term association.

Haywood-Farmer (1988) developed a conceptual model for service quality after studying a diversified number of organizations, such as utilities, transport, teaching, stock broking, repair services wholesaling, retailing, fast foods, and hospitals in Canada. The discussion pointed out that organizations in the service sector are highly diverse and there are at least three important dimensions which can be segregated for better measurement of quality. Their research proposed a new three-dimensional classification scheme based on this idea. Service quality was described by comprising three elements: physical facilities, process and procedures; personal behavior on the part of serving staff; and professional judgment on the part of serving staff. In a multiphase study of service quality, Zeithaml et al. (1990) developed a conceptual model of service quality and a methodology for measuring customer perceptions of service quality. The model was referred as "gaps model" because it features discrepancies or gaps that need to be closed to offer excellent service. Cronin and Taylor (1992) were the first to offer a theoretical justification for discarding the expectation portion of SERVQUAL in the favor of just the performance measure. They developed the other instrument of measuring service quality on different scale popularly called SERVPERF which consist 22 items on likert scale. Higher Education TQM Model of Excellence (HETQMEX) Ho and Wearn (1996) developed a quality measurement model especially for the Higher education institutions (HEI). According to Ho and Wearn, quality is equally required in higher education institutions as in other organization/businesses. Ho and Wearn explained that TQM (Total Quality Management) is essential for the maintenance of Quality in HEI. They stated that it should be used to formulate the mission statement for the services provided by Higher Education Institutions; a generic mission statement could be “To provide quality education, research and related services to continuously satisfy stakeholders needs and achieve excellence through TQM”. Application of Quality improvement model with respect to TQM is the main theme of the researchers. As stated by Samat, et al. (2006) TQM has been explained by many scholars as “the most global advanced approach in the area of quality”. TQM provides consumer loyalty and profitability to the organization.

Parasuraman, Zeithaml and Berry (1990) proposed to subjectively measure service quality by finding out the extent of discrepancy between customers’ expectations or desires and their perceptions of the actual quality of performed service. Good service quality exists when customer expectations are met or exceeded and is studied in five dimensions as mentioned in the last section: tangible, reliability, responsiveness, assurance, empathy. The methodology of comparing customer’s expectation and perception in five dimensions is the popular SERVQUAL

Zeithaml, **Parasuraman and Berry (1990)** define service quality as the extent of discrepancy between customers' expectations or desires and their perceptions. Zeithaml (1981) made an attempt to understand consumer evaluation process of services and concluded that the service's unique characteristics of intangibility, non-standardization and inseparability lead them to possess high levels of experience and credence properties, which in turn, make them more difficult to evaluate than tangible goods. To overcome inherent difficulty to measure service, SERVQUAL scale was proposed as a multiple-item scale for measuring service quality (Parasuraman et al. 1988). SERVQUAL was broadly comprised of five major dimensions like reliability, assurance, tangibles, empathy, and responsiveness with 22 items measuring expectations and perceptions of the consumers separately, which were found to be useful in measuring customer satisfaction.

Brown, Churchill and Peter (1993) also the SERVQUAL is accepted instrument measuring of service quality, which involves the calculation of the difference between expectations and perceptions on a number of specified determinants. After an evaluation of four alternative service quality models Brady and Cronin (2001) state that the SERVQUAL instrument appears to be distinct from the others as it uses one or more determinants to measure the service quality.

Asubonteng (1996), moreover, claims that SERVQUAL is popular with managers because it combines ease of application and flexibility. Managers know that results obtained using the model are probably not objective truth but that they help identify the direction in which the firm should move.

Hill (1995) mentioned that as a primary customer of higher education services, the student should focus on expectations. Waugh (2002), however, suggested that viewing students as customers created some tensions in universities by making universities seem to be too aligned with businesses. Some researchers also view academic faculties as customers of university administration.

Griffin (1996) defined a customer as anyone who pays money to acquire an organization’s products or services. Stanton, Etzel, and Walker (1994) suggested that customer is the individual or organization that actually makes a purchase decision, while a consumer is the individual or organizational unit that uses or consumes a product. In education students are customers who come to contact with service providers of an educational institution for the purpose of acquiring goods or services.

Ho and Wearn (1996) basically applied the Quality management process on the UK Higher Education Industry and explained the factors and organizations associated with the maintenance of quality in it and concluded the presence of TQM in service quality is essential. According to Ho and Wearn (1996) the basic elements of TQM are "leadership, commitment, total customer satisfaction, continuous improvement, total involvement, training and education, ownership of problems, reward and recognition, error prevention, and teamwork". Quality maintenance in service requires change in the entire system shifting from traditional methods to the quick and innovative techniques. Ho and Wearn (1996) has stated the importance of adopting new teaching methods such as "modeling" is better than words, demonstration is better than explanation, minimize instructions, and positive reinforcement is more effective than punishment. The training of teachers and administration also plays an important role in maintaining quality in higher education institutions therefore developing a proper teaching plan is essential. Ho and Wearn (1996) adopted the methodology of developing 5 gaps in the Higher education industry stated "Gap1-Customers' expectations and management's perceptions of customers' expectations, Gap 2- management's perceptions of customers' expectations and service quality specifications, Gap3-Service quality specifications and service delivery, Gap4-Service delivery and external communications to customers, Gap5- Customers' expectations and perceived service". The importance of stakeholders is also highlighted since it is essential to keep in mind the internal stakeholders (students, staff, teachers, administration) informed and manage the external stakeholders (government bodies, other institutions). Ho and Wearn developed a new service quality measurement model by the name of Higher Education Total Quality Management Model of Excellence (HETQMEX). The main purpose of its development is to achieve a level of quality in the higher education institution. The satisfaction of customer is the most important factor which could be achieved by the TQM methods and proper implementation of model in Higher Education Institution. For the implementation of HETQMEX it is essential that the institution should train the faculties and also make sure that entire institution body act as one team.

Pitman (2000) examined the extent to which university staff perceived students and academics as customers in Australia. Although the primary participant in the service of education is the student, there is also a strong underlying assumption that the "customer" of education includes industry, parents, Government, and even society as a whole. The link between satisfaction, payment, and repeat custom is much less direct in education industry, and the simple approach of only considering the bottom line is not available even if it were acceptable.

Ling (2003), The intention here is obvious and well-made but the problem is, comparing to the public higher education learning, it seems the perceptions of the people toward the private higher education tend to be biased in term of quality. It seems that the majority of students and parents especially Bumiputera place their hopes on public higher education institutions. If the students fail to be offered a place there, the perception is that he or she will have a bleak future. This is something that should not happen, as even the Prime Minister himself does not want these institutions to be the "last resort options" or a poorer alternative to public universities.

Mohd Feroz Abu Bakar (2004), This study attempts to explore the aspects of service quality and the level of satisfaction among the students of private higher education institutions. Problem Statement Particularly in Malaysia, National Accreditation Body (LAN) once had to reject accreditation applications of 40 programs by private higher learning institutions due to the weaknesses in core course structures. Among factors that contributed toward the problems were the lecturers' lack of skills to handle the task and failure to attain the required curriculum standard set up by LAN.

NEED FOR THE STUDY

The education service providers are facing with an increasing competition as more new programs offered, new delivery means of the existing program are introduced, and new institutions are established. With this, service quality perceived by students and faculty becomes one of the key success factors. In-order to cope up with the current student's expectations and potential entrants in the field of education, its very much mandatory to focus on the service quality that not only merely satisfies the academic fraternity rather include the society and the stake holders who employ the youth.

OBJECTIVES OF THE STUDY

- To identify the gaps between expected services and perceptions about actually received service quality in self-financing engineering institutions.
- To measure the relationship existing between socio-economical characteristics of students and their expectations towards self – financing engineering institutions.
- To measure the overall satisfaction level of the students and faculty members of the self-financing engineering institutions.
- To suggest suitable methods of service delivery for students (Customer) delight.

RESEARCH METHODOLOGY

The scope of the present study was limited to the Tamilnadu and an exploratory research design was used for the study. The universe of the study is the students of Tamilnadu, pursuing their higher education degrees in the disciplines of engineering. Sampling Out of 500 self-financing engineering institutions located in Tamilnadu, a sample of 50 colleges

from each of were selected on convenience in terms of willingness to participate in the survey. From each of the institutions, 5 students and 5 faculty members were chosen randomly, making the total sample size of 500.

RESEARCH HYPOTHESIS FOR THE STUDY

RH1: There is significant difference between the gap scores of the students and faculty members of engineering institutes

RH2: There is significant difference between the satisfaction scores of the students and faculty members of engineering institutes

DATA COLLECTION

With the purpose of measuring satisfaction with respect to different aspects of service quality, a questionnaire was prepared with the help of a standardized instrument developed by Parasuraman, Ziethaml and Berry in 1998. The instrument was called SERVQUAL. SERVQUAL is applicable to all service industries. The SERVQUAL scale includes five dimensions. They are Tangibles (appearance of physical elements), Reliability (dependable, accurate performance), Responsiveness (promptness and helpfulness), Assurance (competence, courtesy, credibility and security), and Empathy (easy access, good communication and customer understanding) Data Collection Self-administered questionnaires were distributed in the form of a survey and completed by the respondents of 50 engineering institutes in Tamilnadu. The Statistical Analysis of Descriptive analysis was done by computing the mean, standard deviation percentages and cross-tabulation of scores of the variables of the study. The differences between the variables of perceptions were found out with the help of t-test.

RESULTS AND DISCUSSIONS

Table 1: Dimension-wise Service Gap-Analysis

Sl.No.	*Dimensions*	*Expectation Average*	*Perception Average*	*Gaps*
1.	Tangibles	4.48	3.72	-0.76
2.	Assurance	4.51	3.82	-0.69
3.	Reliability	4.59	3.83	-0.76
4.	Responsiveness	4.48	3.72	-0.77
5.	Empathy	4.49	3.57	-0.92

The analysis started with descriptive analysis followed by cross tabulation analysis. After that, the 't-test' was employed to assess the significance of the gaps based on all of the 45 items of the modified SERVQUAL.The results showed (Table 1) that all of the items and constructs measuring the gaps are significantly negative with empathy representing the construct with the highest gap (- 0 . 92) , followed by responsiveness (-0.77), reliability (-0.76), tangibles (- 0.76) and assurance (-0.69).

Table 2: Mean Gaps Scores of Engineering Colleges

Types of Institute	*Students*			*Faculty*		
Component	Expectation	Perception	Gaps	Expectation	Perception	Gaps
Tangibles	4.54	3.66	-0.77	4.41	3.72	-0.69
Assurance	4.56	3.89	-0.67	4.45	3.79	-0.66
Reliability	4.65	3.95	-0.70	4.52	3.75	-0.77
Responsiveness	4.55	3.85	-0.70	4.43	3.65	-0.78
Empathy	4.59	3.64	-0.95	4.39	3.56	0.83
Total	4.58	3.82	-0.76	4.43	3.70	-0.73

These negative gaps indicate that the students' perceptions' scores are less than their expectation scores i.e. students are expecting more from their institutes' services than they are getting in reality; which implies those institutes (service providers) are lacking in their service quality standards. As observed from Table 1, all the means of expectations are greater than the means of perceptions implying that all the mean gaps for the 45items are negative. The biggest gap is for items: “Up- to-date of software’s used in computers” and “Access to the Internet/e-mails” with a score of -1.13 for the dimension of tangibles. In addition, the difference of means for the five dimensions’ ranges from -0.69 to -0.92, implying that there are gaps in all dimensions of service quality. However, the mean difference for the dimension of empathy is the biggest gap (-0.92).

Table 3: Difference between the gap scores of the students and faculty of self-financing engineering institute

RH1: Significant difference between the gap scores of the students and faculty members of engineering institutes

Types of Respondent	*Number*	*Mean (Gap Scores)*	*S.D*	*t-value*
Students	218	34.2	34.27	t=0.35*
Faculty	232	35.09	25.34	
Total	450			

As shown in Table 3 the mean gap scores of the faculty of engineering institute are 35.09 and students of engineering institute are 34.2, implying that the faculty of t6he engineering institute have larger mean-gap scores than students. The calculated values of t-test between the gap-mean scores of the two groups come out to be 0.35. The calculated t-value is less than the tabulated value at 5% (0.05) level of significance = 1.96 and 1% (0 .01) level of significance = 2.58. So, the value of critical ratio is insignificant at 5% and 1% level of significance. That means, there exists no significant difference between the gap scores of the students and faculty members of engineering institutes

Table 4: Difference between the satisfaction scores of the students of students and faculty members of engineering institutes

RH2: **Significant difference between the satisfaction scores of the students and faculty members of engineering institutes**

Types of Respondent	*Number*	*Mean (Satisfaction Scores)*	*S.D*	*t-value (Critical Ratio)*
Students	218	23.54	7.14	t=5.66*
Faculty	232	26.88	5.06	
Total	450			

It is observed from Table 4 that the mean scores of students and faculty members of engineering institutes on overall satisfaction are 26.88 and 23.54respectively. The calculated values of t-test between the mean scores of students from both institutes came out to be 5.66. The calculated t-value is greater than the tabulated value at both the levels of significance. It means that there exists a significant difference between students and faculty members of education institutes on overall satisfaction from the service quality provided by their institutes. This implies that the faculty of engineering institute is more satisfied as compared to students studying in engineering institute. The reason behind this may be that engineering institutes provides better service quality standards as per faculty' expectations than students' expectation.

CONCLUSIONS AND SUGGESTIONS

The study could be clearly concluded by stating that, there is an increase in the access to institutions of higher learning combined with a larger number of such institutions that has given students more options which results in them evaluating these institutions minutely before taking admission decision. 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 service quality and in all parameters, the actual service delivered by them falls short of the expectations of the students that leads to the Gaps in service quality. 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 faculty members in 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 who emerge from various socio economic backgrounds, which influence the choice of expectations towards the educational institutions, which if fulfilled leads to their satisfaction. The overall satisfaction of the faculty and the students based on the research and observation is normally satisfied, and that could be enhanced by developing the infrastructure and state of the art technology with qualified and efficient faculty who not only takes care the academics rather being a mentor for the student's development, who require care as well as results in academic growth.

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