



Quality Measures in Higher Education: A Review and Conceptual Model

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ABSTRACT:- Among the entire services sector, the education sector particularly the higher education sector has direct bearing on society for its' growth and socio-economic growth of the country. The proliferation of higher education institutions, though around phase in the economic regeneration of the country brought in its trial innumerable traits. The government at the centre and state level, through, various regulatory bodies, monitors the functions of the higher education institutions with a view to ensure higher caliber is delivered. Yet the quality of higher education falls short of attaining the global level excellence. This paper focuses on body of literature concerned with the factors which influence service quality in higher education. The objective of the paper is to present a holistic view of the factors that affect service quality in higher education.

Keywords:- SERVQUAL, Higher Education, SERVPERF, Service Quality

I. INTRODUCTION

No country can achieve sustainable development without sustainable investment in human capital. During the twentieth century, education, skill and the acquisition of knowledge have become crucial determinants of people and nations' productivity (Basheer 2007). Today's the education have become the primary determinants of standard of living, employment status and further the economic and industrial development. As the education is turning in to a commodity, the education providers are competing in an open market. Now the emphasis has been made on quality of education which is regarded as a key and invisible factor and competition among nations socio-economic development (Feigenbaum1994).

Higher education is facing pressure to improve the value in its activities. The present tenet for enhancing educational value is to expand the effort on continuous improvement, to focus the shareholders interests, and to increase students' satisfaction. The students' satisfaction is often used to assess the educational quality, where the ability to address strategic needs is of prime importance (Cheng1990).

The limited number of state funded institutions and diminishing funds in higher education from government caused the mushrooming of private institution in the country. Therefore students have a wide range of options to choose from which of the institution to pursue their interest. As the students bear the expenditure of education they deserve to get the best quality education so that could make their own ways in life and career. Therefore, quality has become a competitive weapon for institution to serve and attract their primary stakeholders.

II. SERVICE QUALITY AND ITS RAMIFICATIONS

Service industries are playing immensely important role in developing economies in the world. In today's world of global competition, rendering quality services is a key for success and many experts concern that the most powerful competition trend currently shaping marketing and business strategy is the service quality. Because of the diversity of service industry, service and the service sector economy have been defined in many different ways. Stanton (1981) defined the services as "those separately identifiable, essentially intangible activities which provide want satisfaction and that are not necessarily tied to the sale of a product or another services". Services are the crucial force for today's change towards a global economy. These services have certain special characteristics like intangibility, inseparability, heterogeneity and perishability which make it difficult to measure service quality and customer satisfaction by the service organization. Another important

concern for the service provider is to understand the process of customer assessment of service and its linkages to behavioral outcomes like loyalty and positive word of mouth. This is important, as studies have consistently shown the positive impact of customer satisfaction and perceived quality on profits and market shares. Service quality and satisfaction are considered to be the determinants of purchase intentions (Parasuraman, Zeithaml and Berry, 1988).

Service quality is a combination of two words- service and quality where we find emphasis on the availability of quality service to the ultimate users and focus on the standard or specification that a service provider promises. There is no universal, all encompassing definition of service quality (Reeves and Bednar1994). Some prominent definition includes Conformance to requirement (Crosby 1984), fitness for use (Juran1988), customers judgment for an entities overall excellence and superiority (Zeithaml, 1988).

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. 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. 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.

III. RESEARCH METHODOLOGY

The biggest challenge that any researcher faces working in the area of service quality is the vastness of literature on the subject. A systematic review of literature was done by using hand search, electronic search and library search. The online databases like Elsevier science, emerald database, ABI inform global (Pro Quest Direct), inderscience etc were used to identify the articles and research papers published in various journals, periodicals, magazines and newspapers relevant to the objectives of this paper. Because formal search techniques (e.g. Entering index terms or key words in electronic databases drew a poor yield; we relied mainly on snowball methods (pursuing references and using citations tracking software) and sought advice on sources from experts in this field. Our search strategy was designed to concentrate on the service sector, particularly education services. The databases were searched using different keywords relevant to service quality measurement in higher education. All the database searches yielded hundreds of articles. Each of the articles was examined to ensure that their contents were relevant to service quality measurement in higher education.

The first part of the analysis involved the identification of those articles that focused on the investigation of critical factors of service quality using various techniques. This was done to classify the extracted service quality factors in the literature and also use it as framework for model building. The literature

review yielded more than 100 factors influencing an organization's ability to manage service quality. To rationalize the factors, groupings of factors was done to establish clusters of sub factors as follows

1. **Physical aspects:** This pertains to the university/institution's physical facilities, equipment, support services and attraction of campus. Since students do not receive only education service, but also a large component of support service, they undoubtedly depend on other cues in the absence of physical aspects evidence by which to assess service quality.
2. **Reliability:** This refers to the university/institution's ability to perform the promised service dependably and accurately with trust and confidence.
3. **Competence:** It refers to the faculties' intrinsic characters which are formed by the accumulation in long teaching and training experience, regular learning and construct base to a good teacher.
4. **Personal Interaction:** This means to the faculties' willingness or go-ahead's to response to students' troubles and other problems.
5. **Course structure:** It mainly refers to what will be taught to the students and the detailed requirements of it according to the industry and career needs.
6. **Policy:** Policy mainly refers to the elements that help to complete the programme, relieve financial burden, executive/expert interaction, training and placement, delivery of knowledge in a more effective way.

This stage of research shows that there are 6 factors (and relating sub factors) that influence an organization ability to offer service quality which satisfies customers. The identified factors have interrelationship with each other and customer satisfaction. To provide a more complete view of how these factors and relationships impact service quality a conceptual model is developed to provide holistic view.

IV. SERVICE QUALITY DIMENSIONS

The service attributes contributing more towards customer satisfaction may vary from service to service depending on its nature and scope. Different dimensions of service quality are used for different industries. However, there are some similarities on the chosen dimensions. Many authors have developed service quality dimensions according to their customers' preferences in various service industries. Researchers agree that there is no single dimension which can be applicable for all the service sectors (Carman, 1990, Cronin and Taylor, 1994). They also agree that customers must be the determinant of service quality dimensions rather than the management (Parasuraman, 1985; Cronin and Taylor, 1994; Carman, 1990; Lee et al, 2000).

Developing a service quality model to measure the student's perception is a very complex and tedious task because the service quality dimensions cover many aspects and therefore it is not possible to cover all (Hadikoemoro 2002). Due to this reason, the researchers have included only those important dimensions in the survey which matters most. A summary of various studies conducted for development of measurement scale for service quality with list of dimensions considered is presented below in table 1.1;

Table: 1.1

S.No.	Author	Dimensions
1.	Gronroos (1988)	<ul style="list-style-type: none"> • Professionalism and skill • Attitudes and behaviour • Access and flexibility • Reliability and trustworthiness • Recovery • Reputation and credibility
2.	Gronroos (1990)	<ul style="list-style-type: none"> • Technical Quality • Functional Quality • Corporate Image
3.	Lehtinen and Lehtinen (1991)	<ul style="list-style-type: none"> • Physical Quality • Interactive Quality • Corporate Quality
4.	Parasuraman et. al. 1991 Service Quality Model (SERVQUAL)	<ul style="list-style-type: none"> • Reliability • Responsiveness • Competence • Access • Courtesy

		<ul style="list-style-type: none"> • Communication • Credibility • Security • Understanding the customer • Tangibles
5.	Parasuraman and Berry, 1991; Zeithaml et al, 1990 Service Quality Model (SERVQUAL)	<ul style="list-style-type: none"> • Tangibles • Reliability • Responsiveness • Assurance • Empathy
6.	Cronin and Taylor, 1992 Performance Only; Service Quality Performance Model (SERVPERF)	<ul style="list-style-type: none"> • Tangibles • Reliability • Responsiveness • Assurance • Empathy
7.	R. K. Teas, 1993; Normed Quality Model (NQ)	<ul style="list-style-type: none"> • Revised Expectation and Performance of PZB SERVQUAL model
8.	Carney (1994)	<ul style="list-style-type: none"> • Student Qualification (Academic) • Student Qualities (Personal) • Faculty-Student Interaction • Quality Instruction (Faculty) • Variety of Courses • Academic Reputation • Class Size • Career Preparation • Athletic Programs • Student Activities (Social Life) • Community Service • Facilities and Equipment • Location • Physical Appearance (Campus) • On Campus Residence • Friendly and Caring Atmosphere • Religious Atmosphere • Safe Campus • Cost/Financial Aid
9.	Owlia and Aspinwall (1996)	<ul style="list-style-type: none"> • Tangibles: Sufficient equipment/facilities, modern equipment/facilities, ease of access, visually appealing environment, support services (accommodation, sports) • Competence: Sufficient (academic) staff, theoretical knowledge, qualifications; practical knowledge, up to date, teaching expertise, communication. • Attitude: Understanding student's need, willingness to help, availability for guidance and advisory, giving personal attention, emotion, courtesy. • Content: Relevance of curriculum to the future jobs of students, effectiveness, containing primary knowledge skills, completeness, use of computer, communication skills and team working, flexibility of knowledge, being cross-disciplinary • Delivery: Effective presentation, sequencing, timeliness, consistency, fairness of examinations; feedback from students, encouraging students

		<ul style="list-style-type: none"> • Reliability: Trustworthiness, giving valid award, keeping promises, match to the goals, handling complaints and solving problems.
10.	Ho and Wearn, 1996, Higher education TQM model of excellence; (HETQMEX)	<ul style="list-style-type: none"> • Leadership • Commitment • Total customer satisfaction • Total involvement • Training education • Ownership of problem • Reward and recognition • Error prevention and • Teamwork
11.	Athiyaman (1997)	<ul style="list-style-type: none"> • Teaching Students Well • Availability of Staff for Student Consultation • Library Services • Computing Facilities • Recreational Facilities • Class Size • Level and Difficulty of Subject Content • Student Workload
12.	Lee et al (2000)	<ul style="list-style-type: none"> • Overall impression of the university/institute • Overall impression of the education quality
13.	Hadikoemoro (2002)	<ul style="list-style-type: none"> • Academic Services • Readiness and Attentiveness • Fair and Impartial • Tangible • General Attitudes
14.	Sangeeta et al. (2004)	<ul style="list-style-type: none"> • Competence: Appropriate physical facilities/infrastructure, faculty's expertise, faculty's teaching ability and skills, sufficient faculty/support staff • Attitude: Effective problem solving, orientation towards achievement, healthy competitive and collegial environment • Content: Learn to apply, clarity of course objectives, relevance of curriculum to future needs, flexibility of knowledge being cross disciplinary • Delivery: Ease of contract/access to teachers and administrative staff, effective classroom management, adequate and appropriate classroom • Reliability: Clearly specified values and aims, consistency of practice, clearly specified policies/guidelines, fairly and firmly-enforced rules and regulations, adherence to course objectives.
15.	Brooks (2005)	<ul style="list-style-type: none"> • Reputation, • Faculty Research Productivity • Student Educational Experiences and Outcomes • Program Characteristics: Counts of degree issued, financial support, fellowship grant support, teaching assistantship • Program Effectiveness: Timeline of their programme, proportion of students, completing their intended degree

		programme,
		<ul style="list-style-type: none"> • Student Satisfaction: Classroom, co-curricular activities, interaction with faculty and peers, instructions, campus life and • Student Outcome: Assessment of learning and career outcomes of educational programs
16.	Firdaus Abdullah (2006); Higher education performance model; (HEdPERF)	<ul style="list-style-type: none"> • Academic aspect • Non academic aspect • Reputation • Access • Programme issue • Understanding
17.	Voon (2006); Service driven market orientation model; (SERVMO)	<ul style="list-style-type: none"> • Customer Orientation • Competitor Orientation • Inter-Functional Orientation • Performance Orientation • Employee Orientation • Long term Orientation
18.	Landrum et. al. (2008); Service quality and information system success model (SERVCESS)	<ul style="list-style-type: none"> • Service Quality • Information Quality • System Quality • Users Involvement
19.	Sangeeta Sahney (2010) Application of QFD on SERVQUAL	<ul style="list-style-type: none"> • Customer focus/need based • Channels of communication • Instructional competence • Specific policies and procedures • Evaluation and control system • Curriculum design • Effective leadership • Periodic review • Resource allocation (as in contingencies) • Operational planning

V. MEASURES OF SERVICE QUALITY

There are a notable numbers of approaches to measure service quality but four main approaches have become most popular for measuring service quality. The most popular one is SERVQUAL model which was developed by Parasuraman et al. This measurement compares the level of perception against expectation. Another one is simpler and straight forward which just measure on the current level of performance, known as SERPERF developed by Cronin and Taylor, Evaluated Performance Model (EP) developed by Teas have its importance as E-P = service quality and the fourth, HEdPERF become successful in measuring the service quality of higher education, developed by Firdaus Abudullah.

Parasuraman, et al. (1988) developed “SERVQUAL” model to measure quality in service sector. Parasuraman, et al. (1988) defined service quality as, difference between perception of experience and expectation. SERVQUAL basically configures the gap where the quality improvement is required (Ho and Wearn, 1996; Parasuraman, et al., 1988; Abdullah 2005, 2006). The major dimensions considered for measuring service quality gap in SERVQUAL scale was

- (a) Tangibles: Physical facilities, equipment and appearance of personnel
- (b) Reliability: Ability to perform the promised service dependably and accurately
- (c) Responsiveness: Willingness to help customers and provide prompt service
- (d) Assurance: Knowledge and courtesy of employees and their ability to convey trust and confidence
- (e) Empathy: Caring, individualized attention the organization provides to its customers

Cronin and Taylor (1992) proposed an improved version of service quality measurement model known as Service Performance (SERVPERF). The main factors that create satisfaction with service quality are the customer liking and buying power. The customer can tolerate the variation in the performance of an organization to some extent but after a limit customer feel dissatisfied. This tolerance band is known as 'Zone of Tolerance'.

Evaluated Performance model developed by Teas (1993) shows a positive relationship between the consumer's perception of quality and the likelihood that the actual performance will be able to fulfill the consumers' expectation. Teas explored the customer expectation concept and revised expectation has led to the creation of a new concept of ideal point and standards set in the mind of the consumer. Later Teas, highlighted the after purchase experience as well as the change in the perspective of the customer.

The revised expectation (the expectations created after the experience of the consumer) led to the creation of *Normed Quality Model* by Teas (1993). He addressed it as the excellence norm leading to the positive experience of the consumer. The excellence norm is compared with the ideal standard set in the mind of the consumer (revised in comparison with the expectation). The difference in the two expectations are referred as "Normed Quality Gap", if there is no difference in the excellence norm and the expectation then the normed quality is equal to the perception of the consumer.

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. 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.

Higher Education Performance Model (HEdPERF): For further development of the Service Quality Measurement Models for HEI, in 2006, Abdullah developed model to measure specifically the quality in higher education institutions. The researcher has determined specific factors to measure service quality relying on the

fact that students are the main customers of the service. It is an empirical study; reliability and validity test have been conducted to develop the model (Abdullah 2005, 2006). According to the Abdullah the previous research on the perception of consumers is not covering all aspects. As stated by Abdullah (2006) the findings of previous researchers relied on six dimensions i.e. 'non-academic aspects, academic aspects, reputation, access, programme issues and understanding'. By consulting the previous literature, it is very important for the institution to differentiate among the important dimensions which directly affect the service quality. Even the adoption of specific dimension may attract the student, since direct contact of the student to the institution does make a difference.

The research conducted by Abdullah concluded that Customer-orientation is the important factor considered for service quality maintenance. Thus designing an instrument that is catering to a specific variable is more feasible. Abdullah developed HEdPERF (Higher education performance) model. He adopted a methodology where he verified factors relating to service quality from consumers' i.e. students perspective. After the proper review of available literature, focused groups were included with constructed questionnaire and the survey was conducted through personal contact. Out of 6 institutions, 680 students were a part of the research (Abdullah, 2006). Test of normality was conducted to avoid misrepresentation of data. Then factor analysis was conducted to derive correlation among the dimensions. Conformity factor analysis was conducted to verify the level of relatedness of the dimensions to the service quality. To check the reliability of the model, the reliability analysis was performed. Once no errors were discovered and the dimensions were properly related, then the Validity test was conducted, which shows that the all the dimensions clearly define the purpose of study. Lastly the Multiple regression analysis was applied to check the impact of the six dimensions on the quality of services (Abdullah, 2006).

The findings were positive and it showed that the six dimensions do have an impact on the service quality management. However the limitations of the study is that the model is referring to only one industry, as well as the situations will always lead to positive result as the students might neglect it and misunderstand the concept.

Service driven Market Orientation (SERVMO): Voon (2006) developed the model. It is the art of the service provider to represent their organization in the market in a way to attract more customers by institutions activities, structure or programmes offered. However, the service oriented organization tries to keep an eye on their customers and process according to their expectations and perceptions. In 2006, Voon integrated the idea of applying Market orientation in the service industry, by creating a SERVMO (Service Market Orientation) model. Since market orientation is all about the customer wants and needs, customers are the reason of the existence of the organization. Understanding what is in the heart of customers is the key to success. Customer's perception and expectations of the company makes the business. They are the true judges of any business and their feedback is the parameter of knowing where a company stands in the market. Market orientation has been defined as the essential requirement of an organization. Since every employee in the organization must realize the sensitivity of the consumer wants that is the reason that Voom in 2006 developed a Service Driven Market Orientation Model (SERVMO). According to Voom, SERVMO is 'the set of beliefs, behaviors and cross functional process that seriously focus on comprehensive understanding, disseminating as well as satisfying the current and future need of the target customers, for service excellence'. Market oriented methods have proven to be essential for many businesses.

However according to Voon (2006), due to lack of empirical research on this issue, he has developed a relationship between the 'service market orientation and the customer perceived service quality in the Higher Education Institutions'. Education industry has been selected, to highlight the importance of customer satisfaction in this area. Since students are the main customers in the Higher Education Industry, so students are the stakeholders of the HEI. Stakeholders are the main users of the services and they are aware of all the loopholes in the organization and they are the main source of information. The main theory behind Market orientation is the customer loyalty. Fulfilling the needs of the customers is the focus of companies. However from the marketing and management perspective previous studies reveal that the main target of market orientation is about gathering the true market information and then assembling it to find the requirement of the customer.

By referring to the literature, Voom (2006) defined the service driven market orientation on the basis of six components namely 'Customer Orientation (CUS), Competitor Orientation (COM), Inter-Functional Orientation (IO), Performance Orientation (PO), Long-Term Orientation (LO) and Employee Orientation

(EMO)'. The questionnaire was administered to the customers i.e. students, a total of 126 students were questioned for further improvement in the development of the model. To test the correlation among the components a reliability analysis was conducted by using the Cronbach coefficient alpha. Total of 32 dimensions were considered for testifying the reliability of SERVMO. For the validity analysis the construct validity was applied since the pattern of correlation among the components turned out to be as predicted. In the construct validity the convergent validity was applied which points the level of correlation among the components.

Thus for SERVMO all the components were tested on their degree of association with one another. Cross tabulation was applied to check the bond between the SERVMO and Service Quality. Simple regressions analysis was performed to check relation of SERVMO and Service Quality and the results were positive (Voon, 2006). From the study it was concluded that as the service driven market orientation increase, the customer perceived service quality also increases. Thus from these findings it is clear that SERVMO is a reliable model to measure the service quality. The main idea behind this model is to make the employees realize the impact of perception of customers on the organization. Thus fulfilling their need and want should be the main goal of the organization. The implication faced by the researcher was in terms of the changing environment of the education industry. However the development of SERVMO has shown extensive measures of service quality in the Higher education Industry as SERVMO is the path of discovery from the administration to the customer's perceptions. The research was only limited to the Higher Education Institutions and all the measurement were done on the base of the student's perceptions. However SERVMO scale should be applied to other service oriented industries, to find out the relevance of this model (Voon, 2006).

Service Quality and Information System Success (SERVCESS): Landrum, et al. (2008), when referring to the previous literature, there has not enough research done on the relation of Service Quality (SQ) and the Information System Success (ISS). Therefore the need to develop a new service quality measurement model with information system success was requirement of the time. Recently in 2008, Landrum, et al. developed a success model SERVCESS in order to measure the association of Service Quality with Information System Success. SERVCESS basically not only covers the main components of service quality in fact it also caters to the other variables that have an impact on the ISS. The researcher basically combined the legendary SERVQUAL and other important variables that have an impact on the Information System Success.

According to Landrum, et al. (2008) the important variable related to ISS are 'System Quality (SyQ), Information Quality (IQ), Use, User Satisfaction, Individual Impact and Organizational Impact'. Usually Service Quality is a dependent variable and the six variables are independent on SQ. However these variables depict the performance, the attitude and behavior of the consumers. Later on Landrum, et al. (2008) developed a User Information Satisfaction (UIS) model relying on three variables namely 'staff service quality, quality of user developed applications and user self sufficiency'. Basically Landrum, et al. (2008) replaced the term 'users' by users' involvement' in the research on ISS variable and 'usefulness' was also included in the list of variables. Eventually for development of SERVCESS, Landrum, et al. considered the following variables namely 'Service Quality (SQ), Information Quality (IQ), User Involvement and System Quality (SyQ)'. The methodology adopted by Landrum, et al. to develop SERVCESS, is that questions were prepared considering the 22 items of SERVQUAL and the six components of ISS. The questionnaire forms were given to Army Corps of Engineers information research centers.

The customers replied in terms of the importance of Service Quality and their perceptions and expectations on the height of service provided to them. The response rate was very low and the majority of consumers were not even frequent visitors of the research library. The SERVQUAL model was evaluated using the Cronbach's alpha and once again the performance was considered more over the expectation. Exploratory factor analysis was applied to the 66 item scale created for testing the five dimensions of the model. The variable with low Average variance extracted (AVE) were discarded, eventually 30 items scale was left. Thus SERVCESS is the most reliable source since its connection with the ISS and SQ leads to the configuration of customer satisfaction. However the implication could be that the entire result is drawn based on just one sample survey and it could draw other implication when applied to any different industry. Thus SERVCESS provides cost effective method to evaluate the service quality measurement in the organization (Landrum, et al., 2008).

Service Quality in Higher Education

"The application of service quality Gap model to evaluate the quality of blended learning" by Patryk Babiarz, Maciej Poitrowski, Malgoezata Wawrzynkiewicz (2003), University of information technology and

management, Poland IADIS International Conference e-Society (2003) explains as the SERVQUAL applied to measure the service quality of the teaching process slightly changes the gaps defined in the traditional model. The new set of quality gaps, which will determine the overall service quality, would be as follows:

Gap 1: Difference between student expectations (customer expectations in the traditional model) and university authority level perceptions of student expectations (management level perception in the traditional model).

Gap 2: Difference between authority level perceptions of student's expectations and service (teaching) quality specifications.

Gap 3: Difference between service quality specifications and the service actually delivered.

Gap 4: Difference between service delivery and what is promised about the service (teaching outcomes) to students.

Gap 5: Difference between student's expectation and perception.

Aligning the model to the universities' needs also changes the meaning of the service quality perceptual dimensions. These dimensions are-

- a) **Assurance** – to earn the student's confidence by performing services in a knowledgeable and professional manner.
- b) **Empathy** – the ability to communicate care and understanding through the interpersonal skills of the teaching staff and student-friendly policies and procedures (mainly those affecting the teaching process).
- c) **Reliability** – the accuracy and dependability with which the teaching service is provided
Responsiveness – the demonstration of an eagerness to provide quality service and a commitment to act in the best interest of students.
- d) **Tangibles** – the more physical aspects affecting the teaching process such as technology availability, etc.

On every Gap the authors have given the results of their research study with explanations.

“Brewing service quality in higher education”- Characteristic of ingredients that makes up recipe in the Journal-Quality Assurance in Education by Roland K. Yeo (2008), explains that one of the challenges for today's higher institutions is to identify and implement appropriate measurement tools that will determine the sustainability of service quality. The intangibility of services has made it difficult for performance standards to be set, monitored and measured. As revealed in this study, the fear, as reflected by most academics, is to have people reluctantly conform to the required practices just so that they can save themselves from unpleasant and problematic professional outcomes.

Although the study provides an in-depth exploration of what it takes for an academic institution to embark on a service-quality strategy, it has not determined the enduring success of its implementation. A longitudinal approach would be required to monitor the changes and potential resistance that are likely to occur. Perhaps an action research would give rise to more accurate firsthand information on the intervention and developmental process (Athiyaman, 1997). The study is also limited by the inability to capitalize on the student survey results, teaching evaluation reports and other service performance indicators due to reasons of confidentiality. Such secondary data would provide a wider empirical dimension to the issues investigated. Still, the study provides opportunity for further research. For instance, an explanatory dimension could be pursued through quantitative means using a more cross-sectional sample. The use of questionnaire surveys would serve to capture a much wider data set to evaluate both perception and performance in terms of the specific aspects of service quality (Cronin and Taylor, 1992; Lawson). One the conceptual front, it was discovered that appropriate systems should be implemented to facilitate a community of teaching practice across all course levels.

“Exploring the dimension of service quality in higher education research” by Ariyalan Ramaiyah, Ahmad N. Zain and H. Bin Ahmad expressed their ideas that the comparisons of different service quality dimensions conducted by other many researchers. The following findings were made after making the comparisons between different dimensions of service quality in their own study:-

- There are significant similarities and also differences in the dimensions of service quality developed and used by various researchers.
- Each of the developed dimensions are unique, therefore it support the hypothesis that there are no single set of dimension of service quality which are applicable and suitable for all types of service quality research.
- Service quality dimension varies according to customers, research objectives, institution, situation, environment and time.

- All the chosen dimensions for each of the studies are tailor made to meet different customers' perceptions and expectations
- Items used to explain each dimensions varies according to research objective and customer group.
- Each dimension used is acceptable and correct with qualitative and quantitative justifications.
- None of the dimensions are applicable for all type of service quality research without making necessary modifications.
- The best way to identify the dimensions of service quality is by asking the customers.
- It is not possible to study all the dimensions of service quality under one survey.

The authors conclude that Service quality in higher education is important for success of an institution. Therefore, the dimensions of service quality should reflect the customers' expectations and perceptions in total. Students as a customer should be the determinant of the dimension of service quality rather than the staff or the academics. Service quality dimensions cover broad spectrum of area and items. Students' perceptions and expectations on the service quality are complex, different and subjective. Therefore, the authors tested the validity and reliability.

"Service Quality in Higher Education Using an Enhanced SERVQUAL Approach" (2004), Kay C. Tan & Sei W. Kek ends with as attention to service quality in higher education, there needs to be a correspondent increase in the use of its assessment tools. This research began with the basic SERVQUAL survey instrument. The authors gathered literature about student perceptions and expectations. From survey method they collected data, developed and validated scale over the last decade, a modest amount of further customization was done to fit the survey instrument to Singapore context. From this they formed a broad-ranging survey covering service quality in 76 different variables. The use of the internet for sending out and receiving returns provided an efficient means of administering the survey. The main purpose of the survey was to provide information on service quality gaps. A range of demographic profiling was done; for example, compare first- to final-year students, local versus foreign students, undergraduates versus graduate students. The results from such survey were used to identify areas of priority. The use of stepwise regression provides a second level of analysis in identifying the significance of individual attributes to overall student satisfaction. The use of satisfaction grid tells where to put one's efforts based on what students deem to be of high importance. The above analyses provide information useful for university administrators in decision making. The focus of this research had been on both the acculturated survey as well as the derived methodology.

"Service quality in postgraduate education" Robert J. Angell, Troy W. Heffernan and Phil Megicks (2008), in *Journal of Quality Assurance in Education*, provides insights into the service quality factors of postgraduates based upon an empirical analysis of a sample of UK students. Unlike previous studies, which have focused predominantly on the student segment, this research was designed to specifically target postgraduate students in which the questions regarding appropriateness of disconfirmation-based measures such as SERVQUAL, and equivalent performance-only measures, such as SERVPERF, has been proved most suitable. Through qualitative methods 20 service attributes were identified as important in the evaluation of service. Using quantitative analysis, these were reduced into four service quality factors: "academic", "leisure", "industry links", and "cost". These present a framework that other universities can adapt to their own needs when measuring service quality. Each of the four service factors were then tested using "performance-importance" measure of service quality. The findings indicate that postgraduate students find "academic" and "industry link" aspects of the service to be more important than issues of "cost" and, particularly "leisure".

This may ultimately enhance their performance in this area of endeavor. It is only through such research that universities can wisely allocate resource, and improve significantly enough, to attract the best students to study at a particular institution. It is suggested that service providers perform these studies periodically to better track their own progress and improvement. It should be noted that this study was confined to postgraduate students in social science and business faculty within UK institution.

T. Vaniarajan, J. Vijayadurai (2010) *Service Quality in Higher Management Education: A Comparative Study on Three Group of Institutions*, *International Journal of Management & Strategy* (2010) study conducted in the state of Tamil Nadu (India), explains the quality dimensions in three types of institution. The authors classified the institutions into three groups. The Group I consists of the arts and science colleges which are conducting M.B.A. programmes. The engineering colleges which conduct the M.B.A. programmes are clustered into Group II. The institutions which are conducting only M.B.A. and other management programmes at their premises are named as Group III. Data was collected by means of structured questionnaires comprising of three sections namely A, B and C section. Section A contained questions pertaining to

respondents profile. While section B required respondents to evaluate the service components of their tertiary institution, in which only perceptions data were collected and analyzed. Especially, Section B consisted of 34 perception-items extracted from the original SERVPERF scale (Cronin and Taylor, 1992), and modified to fit into higher education context. Section C on the other hand is composed of 5 items extracted from the original customer satisfaction. As the items generated and validated within higher education context, no modification was required. All the items in Section B and C were presented as statements on the questionnaire, with the same rating scale used throughout, and measured on a 5 point, Likert type scale.

The descriptive statistics (mean, standard deviation, kurtosis and skewness) in the sample have been reviewed in three groups of samples and are satisfied with the data distribution. Next, focusing on the 528 student sample the authors have used factor analysis with item commonality estimated from squared multiple correlations, and maximum likelihood as the estimation method. The mean score of service quality factors in Group-I, II and III institutes have been computed separately to exhibit the level of perception on each service quality factor among the students in three different institutes separately. In order to analyze the significant difference among the three groups of students belonging three groups of institutes regarding their perception on service quality factors (SQFs), the one way analysis of variance has been administered. The SQFs were placement facility, learning outcome, responsiveness, personality development, physical facilities and academics.

The findings in this study indicate that the important service quality factors in higher management education are placement facilities, learning outcomes, responsiveness, personality development, physical facilities and academics. Regarding the perception on above said SQFs, there is a significant difference among the Arts & Science colleges, Engineering colleges and Specialized Management Institutes. The important discriminate SQF between the Arts and Science Colleges, and Engineering Colleges is 'Placement facilities' whereas between the Arts and Science Colleges and Specialized Management Institutes, it is learning outcomes, personality development and placement facilities. The most important discriminate SQF between the Engineering Colleges and Specialized Management Institutes is 'personality development'. The findings also indicate that the service quality is an important driver of customer satisfaction. Since the important drivers are placement facilities, learning outcomes, personality development, physical facilities and academics, the service providers need to develop a systematic assessment program to monitor service quality and customer satisfaction over time. Internal staffs should be kept informed of results and be encouraged to take part in figuring out an effective resolution strategy. Only when a service culture is created, then only service providers ensure the efficient delivery of services most desired by customers.

“Measuring and Evaluating Business Students Satisfaction Perception at Public and Private Universities in Jordan” A.M. Basheer Al. Alak, (2009), Asian Journal of Marketing highlights overall students satisfaction from the higher education institution in Jordan and investigated the difference in satisfaction level of the students from public and private universities. It is welcoming outcome that private universities are really competing well and even well ahead of government universities in the developing services and other related inputs. Students at private universities perceive high quality service than their counterpart at public university and are more satisfied with such services compared to students at public universities. It is quite evident that private universities are differentiating themselves by delivering consistently higher quality service than the public universities. It also interesting to note that the significant power exercised by the higher education council of Jordan over private universities, especially regarding the unprecedented and strict review procedure and accreditation criteria, has actually enabled private universities not only to settle merely good services but also to aim for 100% defect free service in order to be up to the challenge and provide superior services unmatched by public universities.

Public universities on the other hand are not subject to Council accreditation or Review procedure and seem to have escaped scrutiny in spite of certain amount of administrative and fiscal recklessness. Yet, this exemption seems to have worked against the interest of students at public universities, who are less satisfied with the received education services compared to their counterpart at private universities.

It can be easily deduced from the findings of this study that students at the surveyed private universities were by a far more satisfied with 21 out of 22 items contained in the questionnaire than their counterpart at the public universities. The only item which received the highest score by students at public universities was that related to credit facility and scholarship. Student respondents at public universities were more satisfied with the credit facilities offered by the university, compare to their counterpart at private

universities. Yet this finding does not necessarily imply that public universities were more superior in terms of education services than private universities. Neither private universities nor their students receive financial support from government. Besides, the ministry of higher education and scientific research encourage public universities to offer credit facilities/ scholarship to their students at the expense of their counterpart at private universities, under the pretext that private university student could easily support themselves as long as they were able to pay higher tuition fee charged by private university.

The noticeable difference in the satisfaction level between private and public universities, in favor of private universities, suggest that the quality of private higher education in Jordan has witnessed improved and consequent privatization that can be considered to be right move globally and particularly for Jordan.

Ahmadreaza Shekhrchizadeh, Amarn Ralai and Huam –Tat (2011), *SERVQUAL in Malaysian universities: perspectives of international students*, Business Process Management Journal (2011) access the service quality perception and expectations of international postgraduate students studying in Malaysian universities. A modified SERVQUAL questionnaire comprising 35 items was used as the survey instrument to collect data. A panel of four professors in the faculties of education and management in University Technology Malaysia conducted content validity on the instrument. The panel recommended several amendments which were incorporated into the finalized questionnaire. The instrument was administered to 30 postgraduate international students enrolled in University Technology Malaysia to test the instrument for face validity. The finalized instrument consists of an introduction and three sections. The cover letter provides information on the research. The second section consists of 35 items with two separate sub-sections to assess the respondents' expectations and perceptions. Each of the items in the first section is anchored on a five-point Likert scale to measure the respondent's agreement to the item posed. The third section contains demographic questions. The 35 items, modified SERVQUAL used in this study were distributed into five different factors: professionalism, reliability, hospitality, tangibles, and commitment.

The difference may perhaps be explained by the fact that university-related service is mainly measured by education and research standards. Reliability analysis indicates that the modified SERVQUAL scale developed to measure postgraduate students' perceptions of education service quality is statistically reliable. This study was able to show that international postgraduate students in five Malaysian universities have negative perceptions of education service quality in their universities, as students' expectations were not met in the performance of education services. Students were dissatisfied with the education service quality on all the five aforementioned quality factors. One of the most important causes for feeling this dissatisfaction could be explained by gap theory (Parasuraman et al., 1985). The gap theory suggests that the difference between consumers' expectations about the performance of a general class of service providers and their assessments of the actual performance of a specific provider within that class drive the perception of service quality. In the case of Malaysian universities, international students may consider Western universities in America and Europe as a general class for higher education, and benchmark Malaysian universities with these institutions which are very well established.

Perves S. and Tarafdar T. conducted study entitled "*Critical Factors in Service Quality Measurement for Private Universities: A Case of Bangladesh*". In this study the authors have taken ten private universities using convenient sampling technique. Information with regard to each university has been manipulated by providing subject with some formatted information. One page of information relevant to the attribute of the university has been attached to each questionnaire. Fifty two items have been developed under twelve dimensions. These dimensions have served as the basic structure of perceived quality domain and the factors have served as the instrument for measuring the quality and data gathering instruments. The dimensions were- Reliability, communication, Courtesy, Access Competence, Responsiveness, Credibility, Security, understanding, Tangible, Association image and price.

First, the dimensions of service quality have been identified through empirical study. These dimension served as basic structure of perceived value domain and the following steps have been followed to measure the construct and generate the items

1. Conceptualizing the construct,
2. Item generation and content validity,
3. Internal scale reliability,
4. Empirical analysis of the facts.

Sixty students from each university have been identified to response the questionnaire and each questionnaire having fifty two items. Factor analyses were done to arrive at conclusion.

“Assessing service quality in the Higher Education (HE) sector of Mauritius-academics’ perceptions of the University of Mauritius” Undertaken by *Thanika Devi Juwaheer(2005)* focused on an exercise to measure perceived quality with academic staff within the context of the five faculties of the University of Mauritius using a questionnaire developed and adapted from the SERVQUAL instrument. A total of 56 academics have completed the survey during the period September 2004 to March 2005. Several service quality dimensions were identified and as expected, academics’ experiences of service delivery fell short of their expectations across all the dimensions of service quality. Service quality dimensions that emerged as good predictors of service quality at the University of Mauritius have been attributed to dimensions related to ‘General Policies’, ‘Top Management’, ‘Academic Nature of work’ and ‘Compensation / Benefit Programs for Academics’. The most important service quality predictor for academics pertained to the “Academic Nature of Work” Dimension. The sample consisted of the academics that usually interact with the faculty offices/classrooms/library with sufficient frequency and numbers to permit and justify measurements with the faculty.

In this study the author has focused on an exercise to measure perceived quality of higher education in the context of five faculties of University of Mauritius. SERVQUAL developed by *Parasuraman et al., (1985, 1988)* is an established framework for the measurement of general service quality. This framework has been extensively used and tested across a wide range of public and private sector services, and therefore is chosen as the framework for the research. The instrument has been adapted after focus-group discussions with academics of the University of Mauritius. Data collection was done in the five faculties of the University of Mauritius namely: Faculty of Law and Management, Faculty of Social Studies and Humanities, Faculty of Science, Faculty of Agriculture.

Service Quality in Management Education

“Delighting Customer of Management Education in India: a Student perspective, part I TQM Journal (2010) the Author *Sangeeta Sahaney* concludes as the Education is becoming much more of a “product” with students expecting a “quality experience.” Concerns about assessment, accreditation, ratings and rankings are gaining tremendous attention. There are huge pressures upon the educational system to become more customer-centric by providing quality services; and they, have been forced to move towards attempts at not only “consumer satisfaction”, but “customer delight”. Starting with a theoretical background, the paper presents the results of an empirical study conducted to propose an integrated framework of quality management with a students’ perspective. Based on the literature review followed by a pilot study, the variables conceptualized, and a study was conducted on selected management institutes in India.

The paper is an attempt towards the integration of multiple methodologies so as to be able to identify customer requirements and evaluate service quality with the application of SERVQUAL; prioritize improvement of service through the Kano model; and, guide and develop educational services by incorporating the Voice of the Customer through the QFD. This paper reports the findings of the first phase of the study, namely, the application of the SERVQUAL, that enabled gain a deeper understanding of how customers evaluate products and services.

The correlation analysis conducted on the importance levels of the customer requirement constructs revealed that for most of the constructs, the correlation was significant and it could be used as scale to measure service quality. Items in each construct/dimension were subjected to reliability assessment and findings indicated that the scale was internally consistent. The differences in the Gap scores were studied so as to identify the Gap scores. Negative scores were obtained for all the items; this indicated the need for improvement across various customer requirements. The item-to-total correlation for individual performance items for customer requirement constructs was calculated and it was proved that the items formed a single construct; the correlation between the item and the rest of the scale got proven. The alpha values confirmed the dimension reliability of the scale. The exploratory factor analysis conducted to assess the dimensionality of the scale proved that one factor accounted for most of the variation in item scores, leading to the conclusion that the scale could be treated as uni-dimensional with the items being considered as a single composite set of individual measures. The predictive validity for the Perception, Expectation and Gap scores was found to be statistically significant. The relevance of the Perception minus Expectation gap as a predictor of Service quality was also confirmed.

“Delighting Customer of Management Education in India: a Student perspective, part II TQM Journal (2010) the Author Sangeeta Sahaney concludes as Quality management in education has assumed importance as an area of research; a number of studies are being conducted with a view to identification of the customers of the education system; the identification of the components that lead to quality; as well as the understanding of the very conceptualization, assessment and measurement of quality in education. Starting with a theoretical background, the paper presents the results of an empirical study conducted to propose an integrated framework of quality management with a students’ perspective. Based on the literature review followed by a pilot study, the variables conceptualized, and a study was conducted on selected management institutes in India. The paper is an attempt towards the integration of multiple methodologies so as to be able to identify customer requirements and evaluate service quality with the application of SERVQUAL; prioritize improvement of service through the Kano model; and, guide and develop educational services by incorporating the voice of the customer through the QFD. The tools helped:

- gain a deeper understanding of how customers evaluate products and services;
- prioritize customer requirements and/service quality attributes;
- direct efforts towards improvement of product/service delivery.

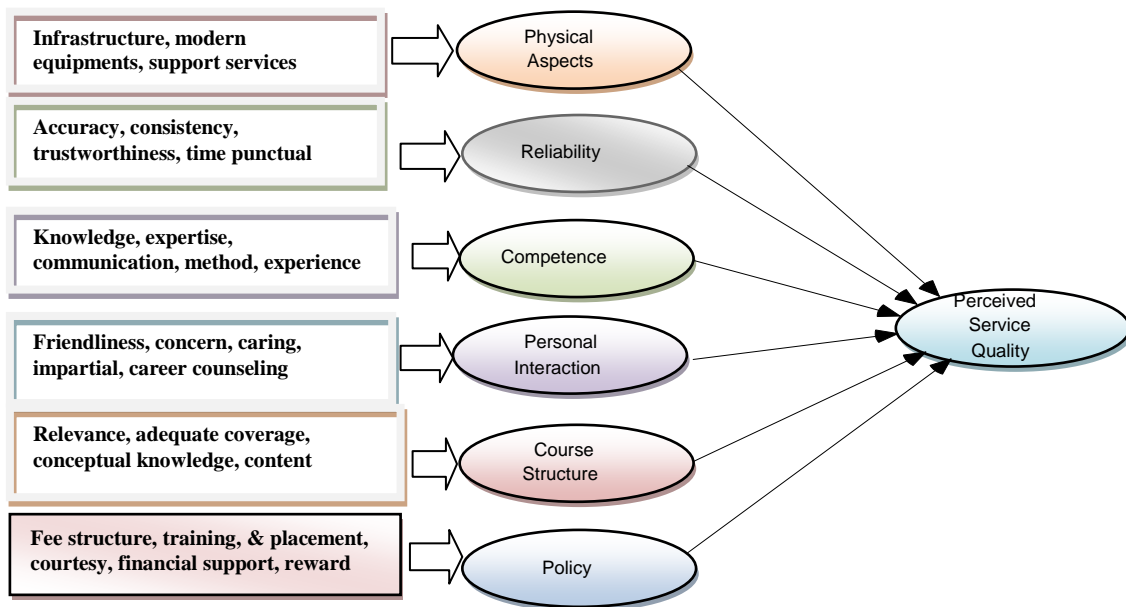
Relative rank Items

- a. Customer focus/need based
- b. Well defined channels of communication
- c. Instructional competence – expertise and adequacy
- d. Clear and specific policies and procedures
- e. Machinery for evaluation and control
- f. Well defined curriculum design
- g. Effective and efficient leadership
- h. Curriculum planning, design, periodic review
- i. Adaptive resource allocation (as in contingencies)
- j. Strategic and operational planning

This effort at the integration of the methodologies helped provide insights that could not be approach creates value out of the data that could not have been obtained through the use of the methods or techniques alone. In fact their conjunction and complementarity have provided the author with findings for design of a customer satisfaction programme. The findings from the Kano model were integrated into the QFD. The rankings obtained from the QFD suggested that the items that obtained the highest ranks are those items that comprise the minimum set of design characteristics that would help provide for the customer requirements. These prioritized design characteristics when adopted and implemented by an educational system would lead to customer satisfaction and delight. The study has helped to identify critical strategic issues and parameters which when implemented would result in the creation of a customer centric environment.

The Conceptual Model and Relevance

Integrating the previous research, underlying theories and existing models, we developed a conceptual model that provides understanding and explanation of factors that measures the service quality in higher education. Through the structured review process a number of relationships were captured between the factors which were most useful in conceptualizing our framework. The relationship (and direction of relationships) between the factors are denoted in the model by the arrows. This model would provide a basic understanding to the promoters of higher education institutions as which dimension to focus with all efforts that could deliver maximum satisfaction to the primary stake holders (students). The model would also provide guidelines to the educationist, leaders of education industry or even the students that which component of the dimension of the model value highest and lowest. The promoters could attract more students by offering quality educational services through focusing their core competencies on these dimensions of the model. The satisfaction level of student would be higher which would turn into positive word of mouth publicity of the institutions and remove gaps in service quality expectation and perception. Higher level of student satisfaction would lead to brand building of institution and the brand would create competitive advantage to the institution over its’ competitors. The conceptual model would provide a guideline to design the quality service offerings to both the higher and management education.



Delivering quality service has become an important goal for most of the institutions of higher education. This study represents an important starting point in the development of valid and reliable measures for institutions' service quality. This model may contribute to the marketing measures by introducing new and focused variables that would provide with more specific information concerning service quality and its contribution to students' satisfaction. The model would suggest that service quality of higher education as well as management education institutions can be measured with these six dimensions scale and these factors would be major issues to students as from which institutions to pursue the interest.

VI. CONCLUSION

The significance of this paper lies in its integration of the extant theories and the development of a conceptual model of service quality as a theory building effort. Extensive literature review was carried out to identify the key variables of service quality and its measurement techniques. Numerous research papers and researchers have attempted to define and measure the quality of services on sale but it is not possible to arrive at an unambiguous conclusion and still it is a debatable issue because of certain attributes of services. Out of many instruments designed and validated by different researchers and scholars, available to measure service quality, a few instruments achieved desirable validity and this research would be based on that instrument and scale.

Implications for Practice and Future Research

A literature review of service quality related articles was conducted to identify the theoretical background to the problem in discussion. Analysis of various service quality related theories and hypotheses could allow practitioners to see what really works for them so that they can prioritize their service processes accordingly. For instance, in studies examining the relationship between service quality and customer satisfaction, those factors that are found to have a positive impact could be recommended to the practitioners. Thus, they could allocate their institution's resources to improve these practices in order to get the best results. Researchers could also use the results of these studies as the guidance to explore various related hypotheses in more detail and improve the accuracy of future service quality measurement.

According to Lyham (2002), good theory and theory building should reflect relevance and validity. Marsick (1990) proposed that a good theory is one which stands on rigor and relevance. Besides relevance it is also important that any new theory or concept should have validity and utility (Van de Ven 1989). We believe that this theory building on service quality measurement in higher education can contribute to research and practice in terms of relevance or utility. However, in terms of rigor and validity, systematic literature review has a limitation in that there is no empirical data for statistical analysis. To confirm the conceptual model, we suggest there should be more rigorous empirical research in this area, to include more statistical analysis to reduce the occurrence of atheoretical practice (Lynham, 2002; Swanson, 1997).

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