Higher Education Service Quality Based on Students' Satisfaction in Pakistan

Abdul Ghaffar Mastoi
Lu XinHai
College of Public Administration,
Huazhong University of Science and Technology, Wuhan, Hubei, China
Wimonsiri Saengkrod
College of Local Administration (COLA),
Khon Kaen University, Khon Kaen, Thailand

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Abstract

Universities in the modern world are expected to seek and cultivate new knowledge, provide the right kind of leadership and strive to promote equality and social justice. The quality of education is an important factor considered for attracting and retaining students as it is a substantial investment made by their parents. Hence, delivering quality service has become an important goal for most higher education institutions (HEIs) and for distinguishing the institutions among other competitors. The general objective of the study is to investigate the satisfaction level of students enrolled in undergraduate and/or graduate programs from different universities in Pakistan and understand: the level of service quality with respect to administrative services, core educational quality, support facilities, physical environmental quality and transformative quality, and overall level of students' satisfaction all university services. A cross-sectional study design was conducted on students of the university's selected using a stratified random sampling technique. Data was collected from 500 questionnaires and analyzed through SPSS. By using multiple linear regression analysis, it revealed which factor was playing how much role in the prediction of students' satisfaction. It was also found that apart from administrative quality of the university all of abovementioned services contributed significantly towards satisfaction level of university students. As student's satisfaction has been positively associated with their performance in university as well as later in their workplaces, it would appear to be detrimental that this aspect of university student's dependence on the service quality provided by higher education institutions should be ignored. It eventually affects the productivity of the workforce of a society and eventually economy of a nation.

Keywords: Student Satisfaction, Service Quality, Higher Education. Pakistan

1. Introduction

Higher education has become a competitive enterprise among all higher education institutions (HEIs). This increasing competition in higher education industry has led to various public and private colleges and universities facing the challenge of declining student enrollment, poor strategic marketing planning, intense competition between other college or universities which offer the same courses and better service quality more desirable. Quality of education becomes more important in order to attract and retain students as it is a substantial investment made by their parents. Most of the recent studies of service quality in education have focused on higher education as more universities and colleges are clamoring and competing for ranking and accreditation in their programs and institution (Sultan and Ho, 2012). Therefore, assurance of service quality becomes an important need and eventually takes center stage for internationalization of quality in education. Service quality is supposed to enhance any university's image. Hence, delivering quality service has become an important goal for most higher education institutions (HEIs) and for distinguishing it among other common competitors. Lack of quality assurance measures is evident in many higher education institutions as it influences the perception of the students towards their knowledge development and their ability for building the student trust. This lack of quality assurance has turned out to be the biggest hurdle for the higher institutions to compete with other institutions. This study was conducted in five different higher eductation institutions in five different cities of Pakistan for evaluating the service quality of higher education institutions based on students' satisfaction; these universities included Governmnet College University Lahore, Karachi University, Quaid e Azam university in Islamabad, Agriculture University Faisalabad and Balochistan University of Information Technology, Engineering and Managemnet Sciences in Quetta.

1.1 Higher Education in Pakistan and Higher Education Commission (HEC)

In Pakistan, higher education refers to education above grade 12, which generally corresponds to the age bracket of 17 to 23 years. The higher education system in Pakistan comprises of two main sectors: the university/Degree Awarding Institutes (DAI) sector and the affiliated Colleges sector. The Higher Education Commission (HEC - a reincarnation of the erstwhile University Grants Commission), is an autonomous apex body that is responsible to allocate public funds from the federal government to universities and DAIs and accredits their degree programs. Colleges are

funded and regulated by provincial governments, but have to follow the curriculum of the HEC funded universities/DAIs with which they have affiliations. While the HEC primarily is funding public universities, it has also opened a limited number of avenues to make funds available to private sector universities for research and infrastructure development recently. Predominantly, Pakistan's higher education sector can be considered public in nature in which public Higher Education Institutions (HEIs) dominate both the university/DAI and College sectors. There is also an availability of large distance learning programs. Wide range of programs and courses are offered by Public HEIs while a narrow range of vocational oriented courses for example business and information technology are offerred by private HEIs. Public universities conduct bulk of the research in the higher education sector. However, the private sector also playing an important role for example private sector representing some 23 percent of HEI enrolments and 9 percent of Degree College enrolments in 2006/07 (Pakistan Bureau of Statistics). Presently, the Government of Pakistan (GOP) is intends to increase the Gross Enrollment Ratio (GER) to 15 percent till 2020. This percent is still comparatively lower as compared to the GER in various other South Asian countries along with improving the number and qualification of the academic staff. Although the number of faculty has risen by 26 percent in last 10 years still, Pakistan's higher education sector lags behind most of the countries in terms of basic academic requirements as compared to others in the Efficiency Enhancers and Innovation/Sophistication factors in higher education and training, Pakistan‘s rank is 129th out of 133 (GOP, 2013). It is envisaged that there is a dire need to GER be increased to 40 percent and that quality must be improved to an even greater extent in the coming years. For this, The Government of Pakistan (GOP) sets a clear vision for the future of the country's system of higher education as an important tool for developing human resources for improving economic growth in a rapidly changing world. Vision 2025 aims at modernizing the existing program contents of higher education towards better meeting labor market needs and building the country's capacity. In order to meet the requirements of the Vision 2025, major improvements are a dire need in the country's higher education system which is rapidly expanding. HEC made significant efforts for addressing the three key challenges of (a) quality assurance (b) increased access and (c) relevance of the higher education sector to national needs. However, to make the right strategic move towards this goal, it is imperative having a candid analysis of the higher education sector especially students‘ satisfaction (Higher Education Commision of Pakistan). This study presents an overview of quality assurance in higher education institutions of Pakistan with the help of students‘ satisfaction. It is well known that the social and economic development of a society mainly rests upon the extent and the quality of the

knowledge that is produced, disseminated and made available to use for its members. Recent experts‘ analysis makes it clear that a gap in output or resources does not necessarily separates developed countries from the less or under-developed countries rather a gap in knowledge makes the true difference. In fact the pace at which developing countries grows largely depends on the pace at which they close that gap (Stiglitz and Greenwald, 2014b). Therefore, it is imperative that students‘ perception of quality of educational environment in Pakistan be assessed and their satisfaction must be regarded as important in order to lessen the gap in educational quality and knowledge delivered in Pakistan's higher education institutions eventually meet the international standards of quality assurance in higher education sector in Pakistan.

1.2 Statement of the Problem

Pakistan's development since its inception on 14 August, 1947 is an indirect result of its prompt attention towards higher education. Pakistan seems to be doing well in the education industry today but still lacks various instruments of quality in its higher education and is behind major other developed countries like USA, Australia, UK, Australia, China and Canada in terms of quality of education provided to its students. This study is an attempt to give an overview of quality of higher education in Pakistan based on students' satisfaction and the few sectors it needs to cater its full attention towards for improving quality of higher education.

1.3 Objective of the Study

The main objective of this study was to explore the overall quality of higher education through students' satisfaction in a cross-sectional study in Pakistan.

Specific objectives included assessing the satisfaction level of university students w.r.t:

- Administrative quality of the university.
- Physical environmental quality of the university
- Core educational quality of the university.
- Support facilities quality of the university.
- Transformative quality of the university.
- Overall satisfaction level of Pakistani students in universities.

2. Literature Review

1.1 Introduction

Research is being conducted continuously on satisfaction in academic areas. Data that has been collected from academic environment benefits

colleges and universities for making educational programs more successful corresponding to the needs of the dynamic market (Eyck, Tews and Ballester, 2009 and Witowski, 2008). Many researchers have conducted studies about the students' satisfaction issues (Astin, 1977; Bryant, 2009; DeShields, Kara and Kaynak, 2005 and Pascarella and Terenzini, 2005) and most of them agreed that satisfied students would be the example of successful students. Satisfaction has been considered one of the significant institutive actions as numerous researches have shown that those students who are satisfied have proven to be more productive than unsatisfied ones (Bryant, 2006; Özgüngör, 2010). Different researchers visualized student satisfaction differently, for instance, satisfaction with college experience (Elliot and Healy, 2001; Peters, 1988; Billups, 2008) satisfaction with quality of instruction (Aman, 2009) satisfaction with advising (Corts, Lounsbury, Saudargas and Tatum, 2000; Elliott, 2003; Olson, 2008; Peterson, 2001) satisfaction with online courses (Banks and Faul, 2007; Heiman, 2008 and Beqiri, Chase and Bishka, 2010) satisfaction with assessment, satisfaction with campus environment (Benjamin and Hollings, 1997) and satisfaction with an academic department (Corts et al., 2000). These studies have shown that there a wide range of literature about student satisfaction presenting various suggestions about higher educational institution and insisting on a need for observations about the performance of academic policies and their applications to evaluate the quality and condition of academic services (Tan and Kek, 2004). To upgrade the service quality was noted as an important need, and the most valuable step for a service institution for making a distinction from others institutions (Kotler and ve Armstrong, 2005). The extent to which students feel satisfied from the requirements and anticipation of an academic environment, eventually decide the quality of education in that particular institution. Educational value, status and quality are often evaluated by student satisfaction where the key weight is mostly attributed to the qualification of how well they address the vital demands of students (Cheng, 1990).

Students' satisfaction has been measured in different ways more like an evaluation of educational plans that fit students,‟ requirements, the staff, supplies, arrangements of the whole system. It will not be inappropriate to use service quality measures in higher education institutions (HEIs) as most of these institutions try to provide some kind of service. Many researchers have used this technique in their studies about service quality in higher education institutions (Cuthbert, 1996b; Soutar and McNeil, 1996; Saaditul Ibrahim, Shamsinar Md Sidin and Wong Chee Meng , 2000). Different studies have presented different outcomes of the various dimensions of service quality in different settings. This study focuses on some elements of service quality in higher education institutions in Pakistan including administrative quality, physical environment quality, core educational quality, support facilities

quality and transformative quality of an educational institution. This work aims at giving a description of quality from the students' point of view. It explores the satisfaction level of students regarding the quality of an educational institution of Pakistani Higher Education Institutions (HEIs). In this research, student satisfaction has been taken as dependent variable affected by various other factors directly affecting educational environment in universities in Pakistan. If we want to thoroughly assess the quality of an institution, we need to know what is service quality first as it becomes much complex when a set of quality elements which are being measured and their respective value is not sustained but deviates in the opinion of different participants.

Satisfaction is prerequisite leading to quality of life (Bryant, 2006; Özgüngör, 2010). According to Bryant (2006) and Özgüngör (2010), satisfied people are more productive as compared to the unsatisfied ones (Bryant, 2006; Özgüngör, 2010). Satisfaction is determined through various factors and different factors have been used by different scholars and have proven to be equally viable. Hayes (1987) studied that the progress of a nation relies not only upon the production of goods but also on their quality (Hayes, 1987). Based on the above discussion, we have proposed the following hypotheses to find out whether factors included in this study affect students' satisfaction significantly before assessing the overall satisfaction of students in higher education institutions in Pakistan.

H1. Bettering administrative quality based on better attitude and behavior of administrative staff and other administrative processes in higher education institutions in Pakistan tends to increase students' satisfaction.

H2. Bettering the quality of physical environment based on better support infrastructure, learning settings and general infrastructure in higher education institutions in Pakistan tends to increase students' satisfaction.

H3. Bettering the core educational quality based on better attitudes and behaviors of the lecturers, curriculum of university, pedagogy of university and competence of lecturers in higher education institutions in Pakistan tends to increase students' satisfaction.

H4. Bettering the support facilities in higher education institutions in Pakistan tends to increase students' satisfaction.

H5. Bettering transformative quality in higher education institutions in Pakistan tends to increase students' satisfaction.

2.2 Service Quality

Various definitions of quality in higher education represent a different view which includes exceptional, perfection, as fitness for purpose, value for money (Harvey and Green, 1993), the contributor perspective of quality (Middlehurst, 1992), the degree to which the previous set of objectives are met

(Vroeijenstijn, 1992). The center of attention for these definitions is consumer requirements (Lewis, Orledge and Mitchell, 1994). The Bologna Treaty (1999) aims at carrying out the objective to prepare students for life as a vital subject in a community, entitle them to uniqueness, produce and carry on comprehensive and modern knowledge foundation and fire them with the enthusiasm of research and innovation (Commission of the European Communities (CEC), 2000). Marsh and Roche (1997) regarded the students' evaluation of teaching as fail-safe (Marsh and Roche, 1997). Similarly, Wiklund and Wiklund (1999) regarded students as well as their satisfaction and learning more important (Wiklund and Wiklund, 1999). The main objective of this study is measuring the Higher Education Quality (HEQ) in Pakistan from the perspective of students' satisfaction. There is a great deal of ambiguity found in text on the subject of service quality definition. Tangible products can have evaluation through standards but service quality measurement is different and difficult to be measured through normal recognised standards according to different authors. Kotler and Keller, (2006), define service as the activities or benefits that are offered for sale, or that are offered for being related to a particular product. Furthermore service is also considered as a kind of performance that is offered by one party to another and in corporeality is a must part of it. Beer (2003) described service quality as a complete package consisting of all the activity that is important for customer satisfaction. However for Mohamed and Shirley (2009) they considered service quality as a source of competitive advantage for service oriented industry. According to Walfried Lasser, Manolis, Robert and Winsor (2000), service is a set of characteristics fulfilling customer's requirement as per expectation to build partnerships. Kotler, Wong, Saunders, Armstrong (2005) defined services being a product that consists of any activity, benefit or satisfaction that one party can offer to another for sale. Services are essentially intangible and do not result in the ownership of anything". According to Parasuraman, Zeithaml, and Berry, (1988) regarded service quality as the expectation of customers. For them customers having expectations from companies and they compared these expectations with perceived service quality. If perceived service quality met or exceeded expectations customers felt happy, but on the other hand if perceived service quality was less than expectation, the customer were disappointed. These results in the most common definition of service quality considered it as a measure of how well the service level delivery matches customer expectations (Gronroos, 1984; Parasuraman, Zeithaml and Berry, 1985).

Service Quality has been playing an important role in the existence of an organization (La and Kandampully, 2004). The better image in the mind of consumers, their trust whether they can rely on the organization and their future usage intentions are all dependent on service quality. Therefore,

previous studies have already discussed the significance of customer's opinion and service quality in detail (Carrillat, Jaramillo and Mulki, 2007; Samat, Ramayah and Saad, 2006; Awan, Azam and Asif, 2008). The continuous struggle to measure service quality has resulted in the creation of many service quality measurement models. Some models have been validated due to realization of certain conceptualized dimensions in the environment, while others have empirically shown the importance of these dimensions to the service quality (Abdullah 2005, 2006a).

2.3 Service Quality and Students' Satisfaction

The term quality is relative to the client and the circumstances in which it is included. It implies distinctive things to distinctive individuals; without a doubt the same individual may embrace distinctive conceptualizations at diverse times. This implication raises the issue of whose quality? (Harvey and Green, 1993). There is a variety of partners in higher education including students, managers, educating and non-teaching staff, government and its different kinds of funding agencies, accreditors, validators, evaluators, and assessors (also including proficient bodies) (Burrows and Harvey, 1992). Each of these partners tries to incorporate a distinctive view on quality, that impacts their own interests in higher education. The focus mostly rests on the participation rate or percentage growth of students from under-privileged backgrounds, including that of mature students, part-time students and disabled students when the higher education is being conceived as a matter of increasing life chances. As Rowley (1997) states: While the quest for service quality dimensions has an attractive simplicity, it is important to recognize that this is but a part of the complex jigsaw associated with managing and measuring service quality in higher education. Wiers-Jenssen, Stensaker and Grogard (2002), also highlighted the complexity of the concept in the higher education in recent studies. Although there is a dominant paradigm existing in terms of definition of quality focusing on the consumer within the service quality literature and this is not true in the literature about educational quality (Grapentine, 1999; Robinson, 1999). Harvey and Green (1993) stated that there is no single correct definition of quality, but rather quality should be seen as a 'stakeholder-relative' concept. Tam (2001) more recently has discussed the more contested views over quality and how it must be measured in higher education.

Three contrasting approaches to the measurement of quality in education can be identified. The first approach adapts the servqual instrument (Rigotti and Pitt, 1992; Donaldson and Runciman, 1995; Cuthbert, 1996a, 1996b; Owlia and Aspinwall, 1996; Oldfield and Baron, 2000; O'Neill and Palmer, 2001). The second uses methods for assessing the quality of teaching and learning (Entwistle and Tait, 1990; Ramsden, 1991; Marsh and Roche,

1993). The third uses methods for assessing the quality of the total student experience (Harvey, Burrows and Green, 1992b; Roberts and Higgins, 1992; Hill, 1995; Aldridge and Rowley, 1998; Gaell, 2000; Watson, Saldana and Harvey, 2002; Wiers-Jenssen et al., 2002). In the studies which applied SERVQUAL there is a need in the amendment of the questionnaire, and currently there is no consensus on the dimensions of service quality or the significance of each of the dimension in the context of higher education. Tan (1986) differentiated three types of studies: reputational (subject evaluations from 'experts'), objective indicator and quantitative correlating studies after conducting a thorough review of the assessment methods which are normally used for assessing teaching quality in US higher education. He concluded that: the best way to measure quality is by using multiple variables. It seems he gained little success as the biggest problem seemed to lie in the fact there is very little theory available for guiding the researchers in their selection of the best combination of variables for measure quality (Tan, 1986).

This issue has been still the case even today as the majority of universities tend to use different variables, questions and evaluation methods. Many of these different variables, questions and evaluation methods are developed internally without considering the reliability or validity of variables and evaluation methods at hand (Ramsden, 1991; Cuthbert, 1996a; Rowley, 1996, 1997; Oldfield and Baron, 2000). The available literature on student learning exposes various well-validated questionnaires that try to highlight the important dimensions of service quality in higher education (Hattie and Watkins, 1988; Entwistle and Tait, 1990; Ramsden, 1991; Marsh and Roche, 1993; Pike, 1993; Cuthbert, 1996a; Rowley, 1996). Ramsden's (1991) Course Experience Questionnaire, and Marsh and Roche's (1993) Students Evaluation of Educational Quality instruments are the most widely reported, accepted and applied methods focusing on the assessment of teaching and learning. Both above methods are also widely criticized for only focusing on the teaching and learning experience to assess quality and so neglecting the wider other student experiences as these models do not incorporate other important aspects of student experience such as the accommodation situation and on campus social life. Various higher education institutions evaluated other aspects of the student life beyond the quality of teaching and learning (Roberts and Higgins, 1992; Hill, 1995; Harvey, Plimmer, Moon and Gaell, 1997; Aldridge and Rowley, 1998). So we can accept the fact that the service quality literature does not signal towards a general agreement in terms of the dimensions or measurement approach to assess quality in higher education.

In summary, recent studies (Oldfield and Baron, 2000; O'Neill and Palmer, 2001) have started exploring the value of applying service marketing concepts and models for assessing the quality in higher education sector. Some other studies tried to apply various concepts from the educational literature

and considered the quality of teaching and learning or the quality of total student experience as valid. As Wiers-Jenssen et al. (2000) state: student satisfaction concepts and approaches might be tools for building a bridge between more traditional and academic views for improving higher education, and more market-orientated perspectives. Most of the questions still remain unanswered. Which of the quality dimensions tend to be most important for postgraduate, part-time students? Whether researchers should measure expectations or performance alone? Whether researchers must be focusing on the teaching and learning experience or quality of total student experience? What kind of effects the highly interactive and longitudinal nature of the service experience in higher education has on all the earlier questions? Major opportunity still exists for deepening our understanding, and eventually informing improvements in practice, with the help of application of both service quality and educational concepts.

2.4 Service Quality or Students' Satisfaction

According to Bateson and Hoffman (1999) stated that most of the experts agreed and considered the customer satisfaction as a short-term transaction specific measure while they considered service quality as an attitude that has formed over a long-term evaluation of performance. Elliott and Healy (2001) defined student satisfaction as short-term attitude resulting from evaluating the student's educational experience. Two terms are almost same because the student can be considered just another type of customer consuming education service and therefore we can apply almost all of the literature on service marketing. Experts generally agree that on a relationship between service quality and customer satisfaction but the disagreement is on the unclear nature and direction of this relationship as some researchers like Parasuraman et al. (1985) and Cronin and Taylor, (1992) regarded service quality before customer satisfaction. On the other hand according to Bitner (1990) service quality normally follows customer satisfaction. Some new studies in this area also agreed upon the view of service quality leading before customer satisfaction. A study done by Sulieman, (2013) on Jordanian banks exhibits that the five dimensions of service quality under study have a direct effect on customer satisfaction level.

According to Maria Tsinidou, Gerogiannis and Fitsilis (2010), there are six factors by which we can measure the higher education quality (Tsinidou et al., 2010) consisting of academic staff, administration services, library services, curriculum structure, career prospects, location, and infrastructure. On the other hand and according to Mai (2005), there are many indicators of service quality in higher education e.g. quality of education, teacher skills and knowledge and quality of IT services. etc. (Mai, 2005). The environment of students has a direct impact on their behavior and their

learning. The environment which has students centered learning, cooperative learning, sharing ideas, group discussion, learning from mistakes, open communication etc. makes students active doers rather than the passive listeners. There is a positive relationship between the quality of the environment and service quality and eventually its impacts on students' satisfaction. As the expectations seem to determine the outcome of satisfaction, some emphasis placed to understand the formation of expectations was studied by Zeithaml, Parasuraman and Berry (1985) who suggested that word-of-mouth, personal needs, communications, past experience of the service, price and external communications can have an influence on the consumer's expectations. The main objective of this kind of study is to help in establishing the realistic expectations so that consumers do not feel dissatisfied from the service quality (Zeithaml, Parasuraman and Berry, 1985; King 1985). However, levels of student satisfaction vary with nationalities and programs. The researchers explain that this difference could be due to difference in cultures and backgrounds that different sudents come from. Therefore they recommend further research in other parts of the world as generalization of their conclusions could not be the right step in this case. In view of the cultural and environmental differences that exist between Pakistan as compared to the other countries where these studies were carried out it was this researcher's view that this current study being carried out to find out if service quality offered by universities in Pakistan has an effect on student satisfaction and whether there are some comparative differences among university students of Pakistani universities with other world renowned universities.

3 Methodology

SERVQUAL is widely used service quality measurement model developed by Parasuraman et al. (1985) which illustrates the direction of gap between customer expectation and perception as measured by SERVQUAL affecting service quality. Service quality is defined as a function of gap between customers' expectations of a service and their perceptions of the actual service delivery by organization. The ultimate measure of quality is whether or not the service lives up to expectations of the customers (Parasuraman et al., 1988). Gronroos (1984) introduced another concept of perceived service quality in the development of his widely cited model of service quality. This model suggests that the quality of a given service is a final product of an evaluation process where the consumer compares what they expected to receive with what they perceive they actually received. Gronroos also suggests previous experience with the service will influence expectations. Although the model is useful in highlighting that quality evaluations involve outcomes and processes, it can be criticized for over-simplification. Neither

the role of other consumers in the process nor any longitudinal aspects of the service experience are included.

There are various studies which attempted identifying higher educational service quality (HESQUAL) dimensions by using an exploratory phase consisting of qualitative research methods instead of just building on the generic SERVQUAL framework. An important issue which must be considered is that most of the models including and based on SERVQUAL model only take into account the functional quality and tend to neglect the technical quality aspect in service quality (Kang, 2006). The extant literature suggests that this is the prevalent case in higher education context too apart from few research exceptions such as Holdford and Reinders (2001), Chong and Ahmed (2012) and Clemes, Cohen and Wang (2013). A holistic approach is adopted in this research where five primary dimensions of HESQUAL have been identified from the extensive literature review conducted and qualitative data collection in the form of interviews and focus groups with students and academics. These five determinants included administrative quality, physical environment quality, core educational quality, support facilities quality and transformative quality along with overall satisfaction level of students. As mentioned earlier, this study used mixed model approach incorporating both qualitative and quantitative aspects of research. A pilot study was first conducted to evaluate the factors associated with or affecting service quality in an educational setting. For this, various semi-structured questionnaires were developed to be filled by university students, faculty and other administrative authorities. Responses from these questionnaires, personal interviews with students and other academic staff and group discussions enabled us to finalize upon the factors influencing the service quality of higher education institutions in Pakistan through a rigorous process in a cross sectional study.

3.1 Study Design

Five primary dimensions of HESQUAL have been identified from the extensive literature review conducted and qualitative data collection in the form of interviews and focus groups with students and academics. Thus administrative quality, physical environment quality, core educational quality, support facilities quality and transformative quality were considered as the independent determinants to evaluate our dependent variable of overall students' satisfaction in Pakistan. Quality of education in Pakistani universities was found on the basis of students' satisfaction on above five service factors in the universities along with sixth dependent factor of overall satisfaction of students apart from their overall satisfaction on the accumulated service quality of these factors in the universities. Harvey and Green (1993) considered education not only being an instrument of presenting a service for a customer but rather they regarded education as continuous process to

transform the participant (student). This view has also been strongly supported by empirical studies conducted by other scholars such as Lomas (2007), Watty (2005) and Zachariah (2007) who regarded this as the preferred view of educational leaders, employers, academics and students. Harvey and Knight (1996) recommended that quality education helps enabling transformation in the students and thus improving them. Thus this study seeks integrating this notion of quality for future measurement of service quality through developing and integrating a new determinant into the existing scale to measure the students' perception of transformative quality. The appropriateness of a hierarchical model was also further strengthened. The next phase of the research is to test for potential sub-dimensions through Exploratory Factor Analysis (EFA) and also tested for the validity and reliability of the measurement scales.

3.2 Sampling Techniques

Since the focus of this study was to evaluate student satisfaction currently enrolled in Pakistani universities based on the quality of five factors, the sample population comprised of current undergraduate and graduate students in Pakistani universities. To ensure a proper sample size, Cochran's formula for sample size of an infinite population was used as given below (Cochran, 1977).

$$n_o = \frac{Z^2 pq}{e^2}$$

where e is the desired level of precision (i.e. the margin of error), p is the (estimated) proportion of the population which has the attribute in question, and q is 1 – p. The main reason behind using above formula for sample size was that we could not get the definite population of Pakistani students in Pakistani universities and this number is quite high so it was better to utilize Cochran's formula for indefinite population according to which the sample size for an indefinite population must be higher than 384 and to be on the safe side we used a sample of 500 students spread across five universities in five different cities of Pakistan namely Governmnet College University Lahore, Karachi University, Quaid e Azam university in Islamabad, Agriculture University Faisalabad and Balochistan University of Information Technology, Engineering and Managemnet Sciences in Quetta.

3.3 Variables for Satisfaction

Satisfaction has always been attached to service quality and is made of a behavioral dimension which develops due to experience and a mental dimension which develops due to a work up attitude (Oliver, 1999). In this article the Satisfaction construct is described as the Pakistani students' feelings about the quality of different facilities and the educational environment

provided in Pakistani universities evaluated through five kinds of quality determinants: Administrative Quality, Physical Environment Quality, Core Educational Quality, Support Facilities Quality and Transformative Quality of higher education institutions in Pakistan. These five are addressed next along with the accompanying hypothesis statement.

Administrative Quality

Administrative quality of a university was based on two major factors including Attitude and Behavior of administrative staff and administrative processes. Attitude and behavior of the administrative staff was evaluated through willingness of administrative staff members to help students, ability of administrative staff members to solve students' problems, politeness of administrative staff and behavior of administrative staff members imparting confidence in students. Administrative processes were evaluated through well standardized administrative processes due to which there is not much bureaucracy and useless difficulties, clear and well-structured administrative procedures so that service delivery time is at minimum and transparency of official procedures and regulations. On the basis of above constructs we tried to test following hypothesis;

H1. Bettering administrative quality based on better attitude and behavior of administrative staff and other administrative processes in higher education institutions in Pakistan tends to increase students' satisfaction.

Physical Environment Quality

The quality of the physical environment of a university primarily depended on three factors including support infrastructure, learning settings and general infrastructure. Support infrastructure of the universities in Pakistan was evaluated through availability of adequate cafeteria infrastructure, availability of adequate library infrastructure, availability of adequate recreational infrastructure and availability of adequate sports infrastructure. Learning settings were evaluated through having adequate lecture rooms, having quiet places to study within campus and availability of adequate teaching tools and equipment e.g. projector, white boards. General infrastructure was evaluated by having favorable ambient conditions (ventilation, noise, odor, etc.) prevailing within the campus, safety on campus and appearance of buildings and grounds.

H2. Bettering the quality of the physical environment based on better support infrastructure, learning settings and general infrastructure in higher education institutions in Pakistan tends to increase students' satisfaction.

Core Educational Quality

Core educational quality of a university had four constructs: attitude and behavior of the lecturers, curriculum of university, pedagogy of university and competence of lecturers. Attitude and behavior of the teaching staff was evaluated through their understanding of students' needs, their personal attention to students, their availability to guide and advise students, prevalence of a culture of sharing and collaboration among lecturers, their behavior of instilling confidence in students and lecturers appearing to have students' best interest at heart. Curriculum was evaluated through how much clearly defined course content and course objectives are, how much useful module content and design are to cater for the personal needs of students, how much challenging academic standards of programs are to ensure students' overall development and relevance of course content to the future/current job of students. Pedagogy was evaluated with students' views about use of multimedia in teaching (e.g. use of overhead projector, power-point presentations, active participation of students in their learning process, provision of regular feedback to students with respect to their academic performance and how much well-designed examinations and continuous assignment are to promote the enhancement of knowledge skills. Competence of lecturers was evaluated through the theoretical knowledge, qualifications and practical knowledge of lecturers, communication skills of lecturers and how much up-to-date lecturers are in their area of expertise.

H3. Bettering core educational quality based on better attitude and behavior of the lecturers, curriculum, pedagogy and competence of lecturers in higher education institutions in Pakistan tends to increase students' satisfaction.

Support Facilities Quality

Support facilities quality of the university was evaluated through students' opinions about reasonable pricing and quality of food and refreshments on campus, availability of adequate IT facilities, availability and adequacy of photocopy and printing facilities, availability of transport facilities, amount of opportunity for sports and recreational facilities, availability and adequacy of extracurricular and activities including those through clubs and societies

H4. Bettering support facilities in higher education institutions in Pakistan tends to increase students' satisfaction.

Transformative Quality

Transformative quality of higher education institutions in Pakistan was evaluated with the help of students' views about how much an institution was successful in enabling students to be emotionally stable, increasing the self-

confidence of students, development of students' critical thinking, increasing the self-awareness of students, development of problem-solving skills with respect to their field of study, enabling students to transcend their prejudices, acquiring adequate knowledge and skills to perform future job, and increasing the knowledge, abilities and skills of students.

H5. Bettering transformative quality in higher education institutions in Pakistan increases students' satisfaction.

3.4 Data Collection

Quantitative data was collected through questionnaires which were self-administered. As Cochran's formula of sample size for indefinite population was used which states that the sample size for an indefinite population must be higher than 384 and we used a sample of 500 students spread across five universities in five different cities of Pakistan: Government College University Lahore, Karachi University, Quaid e Azam university in Islamabad, Agriculture University Faisalabad and Balochistan University of Information Technology, Engineering and Management Sciences in Quetta.

3.5 Data Analysis

Before data feeding, questionnaires filled by students from five Pakistani universities were thoroughly reviewed. Data cleaning and data analysis was conducted by the researcher before feeding the data into IBM SPSS 21.0. Each of the variables was checked for coherence and consistence, along with checking the variables for missing values. We checked all the determinants first to find out the statistical validity and reliability using Cronbach's alpha and found out that all of them had a result of 0.85 and beyond. Each of the five independent variables including administrative quality, physical environment quality, core educational quality, support facilities quality and transformative quality was checked to see if all the variables are multi-collinear through correlations and result showed that all the independent variable were non-multicollinear to rest of the independent variables. Finally we analyzed the data mainly using descriptive statistics and students' overall satisfaction resulted through using Exploratory Factor Analysis first for validating all the determinants of our research and then through multiple regression analysis to check all hypotheses.

4 Results and Discussion

4.1 Data Analysis

Table 1 presents demographic characteristics of the students surveyed which was attained through descriptive analysis of the respondents which gives an idea of the age, gender, highest degree of the respondents, current

degree of the students and current year of study for the Pakistani students under observation.

Table 1: Demographic Data of Students

Demographic Objects	Valid Items	Percent %
	18-21	41.2
Age	22-24	32
	25-27	7.4
	28-31	10.6
	32-34	3
	>=35	5.8
Gender	Male	51.6
	Female	45.2
	Others	13.2
Highest Degree Completed	Higher Secondary Education (College)	38.4
	Undergraduate	47.2
	Master	10.6
	PhD	3.8
Current Degree	Diploma	6.8
	Undergraduate	81
	Master	8
	PhD	4.2
Current Year of Study	First Year (Freshman)	19.4
	Second Year (Sophomore)	30.2
	Third Year (Junior)	19.8
	Fourth Year (Senior)	30.6

All the six determinants were checked through Exploratory Factor Analysis using extraction method of principle component analysis and rotation method of Varimax rotation with Kaiser Normalization (Kaiser, 1958). Cronbach's alpha was calculated for all the determinants to find out their reliability along with running a test to check the multicollinearity among the independent variables and results showed that none of the independent variables were multicollinear. Then all the factors were loaded on to the specified determinants along with their variance percentage, eigenvalues, cumulative variance and Cronbach's alphas as given below in Table 2.

Table 2: Exploratory Factor Analysis

Measurement Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Administrative Quality						
• Willingness of administrative staff members to help students	0.739					
• Ability of administrative staff members to solve students' problems	0.736					
• Politeness of administrative staff	0.825					
• Behavior of administrative staff members in imparting confidence in students	0.816					
• Well standardized administrative processes due to which there is not much bureaucracy and useless difficulties	0.777					
• Clear and well-structured administrative procedures so that service delivery time is at minimum	0.794					
• Transparency of official procedures and regulations	0.827					
Physical Environment Quality						
• Availability of adequate cafeteria infrastructure		0.772				
• Availability of adequate library infrastructure		0.674				
• Availability of adequate sports infrastructure		0.775				
• Having adequate lecture rooms		0.645				
• Having adequate lecture rooms		0.696				
• Availability of adequate teaching tools and equipment (e.g. Projector, White boards)		0.57				
• Favorable ambient conditions (ventilation, noise, odor, etc.) prevailing within the campus		0.753				
• Safety on campus		0.806				
• Appearance of buildings and grounds		0.83				

Measurement Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Core Educational Quality						
• Lecturers understanding of students' needs			0.586			
• Lectures' personal attention to students			0.78			
• Availability of lecturers to guide and advise students			0.756			
• Prevalence of a culture of sharing and collaboration among lecturers			0.801			
• Behavior of lecturers instilling confidence in students			0.81			
• Lecturers appearing to have students' best interest at heart			0.814			
• Clearly defined course content and course objectives			0.753			
• Useful module content and design to cater for the personal needs of students			0.793			
• Challenging academic standards of programs to ensure students' overall development			0.687			
• Relevance of course content to the future/current job of students			0.636			
• Use of multimedia in teaching (e.g. use of overhead projector, power-point presentations)			0.761			
• Active participation of students in their learning process			0.621			
• Provision of regular feedback to students with respect to their academic performance			0.651			
• Well-designed examinations and continuous assignment to promote the enhancement of knowledge skills			0.563			
• Theoretical knowledge, qualifications and practical knowledge of lecturers			0.691			
• Communication skills of lecturers			0.62			
• Up-to-date lecturers in their area of expertise			0.624			

Measurement Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Support Facilities Quality						
• Reasonable pricing and quality of food and refreshments on campus				0.792		
• Availability of adequate IT facilities				0.557		
• Availability and adequacy of photocopy and printing facilities				0.723		
• Availability of transport facilities				0.863		
• Amount of opportunity for sports and recreational facilities				0.634		
• Availability and adequacy of extracurricular activities				0.773		
• Availability of other activities including clubs and societies.				0.823		
Transformative Quality						
• Enabling students to be emotionally stable					0.835	
• Increase in self-confidence of students					0.724	
• Development in students' critical thinking					0.819	
• Increase in self-awareness of students					0.619	
• Development of problem-solving skills with respect to their field of study					0.625	
• Enabling students to transcend their prejudices					0.727	
• Acquiring adequate knowledge and skills to perform future job					0.801	
• Increase in knowledge, abilities and skills of students					0.855	
Overall Satisfaction						
• How much satisfied are you with the attitude and behavior of the administrative staff of the university?						0.609
• How much satisfied are you with the administrative processes of the university?						0.715
• How much satisfied are you with the support infrastructure of the university?						0.58

Measurement Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Overall Satisfaction						
• How much satisfied are you with the learning settings of the university?						0.733
• How much satisfied are you with the general infrastructure of the university?						0.587
• How much satisfied are you with the attitude and behavior of the lecturers of the university?						0.752
• How much satisfied are you with the curriculum of the university?						0.696
• How much satisfied are you with the pedagogy of the university?						0.757
• How much satisfied are you with the competence of the lecturers of the university?						0.795
• How much satisfied are you with the support facilities quality of the university?						0.625
• How much satisfied are you with the transformative quality of the university?						0.735
Eigenvalues	4.74	4.91	10.358	4.176	5.801	5.49
Percentage of Variance	67.7	49.089	60.93	59.654	72.513	49.91
Cumulative Variance	76.5	60.278	66.949	70.069	78.761	57.852
Cronbach's alpha	0.92	0.883	0.959	0.884	0.946	0.885

4.2 Hypotheses H1-H5: Students' satisfaction vs. Determinants of Satisfaction

To test each hypothesis separately through multiple regression analysis; we used regression model separately for all the independent variables separately including administrative quality, physical environment quality, core educational quality, support facilities quality and transformative quality of the university with respect to overall students' satisfaction. Outcomes of multiple linear regressions for checking all the five hypotheses are given below in Table 3 along with standardized regression's coefficient of every predictor i.e. β along with R^2 and F of students' overall satisfaction (for all of the predictors in this linear regression analysis).

Table 3: Results of Multiple Regression Analysis

Independent	Dependent (Students' Satisfaction)
All Determinants	Overall Satisfaction
	R^2= .895
	F = 843.231
Administrative Quality	β = .208
	t = 9.207
Physical Environment Quality	β = .130
	t = 4.110
Core Educational Quality	β = .285
	t = 7.949
Support Facilities Quality	β = .271
	t = 10.404
Transformative Quality	β = .254
	t = 9.323

Results shown in the above table as a result of multiple regression analysis show that administrative quality, physical environment quality, core educational quality, support facilities quality and transformative quality of all the university students under observations are positively and significantly correlated with the overall satisfaction of students in Pakistani universities having $p<0.05$ eventually supporting H1-H5 and none of the above described qualities of a university setting under observation has a negative relationship with students satisfaction although the extent to which each of the independent variable was different. Administrative quality's coefficient of positive relationship with students' satisfaction was .208, physical environment quality .130, core educational quality .285, support facilities quality .271, and transformative quality as .254. Therefore, all the independent variables under study show that there is a strong and significant relationship between these determinants and students' overall satisfaction in higher education institutions in Pakistan.

5 Conclusion and Recommendations

Main objective of this research was to first identify certain parameters through literature review which are responsible to improve students overall satisfaction as a whole due to increased emphasis on students' performance in universities and at workplaces on their overall satisfaction of university setting all over the world nowadays and then test those parameters in Pakistani universities as cultural differences can change personal preferences and parametric conclusions on the satisfaction by Pakistani students. The key factors were explored and validated here along with their relation with overall satisfaction of Pakistani students were five that included Administrative

Quality of a university based on attitude and behavior of administrative staff and administrative processes, Physical Environment Quality based on support infrastructure, learning settings and general infrastructure, Core Educational Quality based on attitude and behavior of lecturers, curriculum, pedagogy and competence of lecturers, Support Facilities Quality and Transformative Quality. All five determinants were validated through exploratory factor analysis and then each of the determinants was separately tested for its contribution towards overall satisfactions of students in Pakistani higher institutions that exhibited that all the determinants including administrative quality, physical environment quality, core educational quality, support facilities quality and transformative quality of higher education institutions in Pakistan significantly and positively affect satisfaction level of students in Pakistani universities variably due to their effective contribution towards increasing the overall campus environmnet and learning settings resultantly better equipping them with acquiring education in such an environment. Thus future researchers, academicians and students can fully benefit from this research in terms of improving the research models, improving learning setting in Pakistan for students along with Pakistani students' preferences in terms of learning environment and quality they expect in a higher institution. As this research is limited in terms of its scope as only 5 universities in five different cities of Islamic Republic of Pakistan were examined so there is still need to investigate this further in terms of variables exploration, diversification and an upsurge in sample size to better understand the real determinants of all the Pakistani students studying in higher education institutions in Pakistan. In the light of above results, some suggestions and recommendations for the improvement of students' satisfaction determinants and hence level of satisfaction in higher education institutions in Pakistan are: Government and institutions must start paying special attention towards raising the learning opportunities and environment for both male and female students. Necessary steps must be taken for inducting, training and retaining qualified and expert teachers to promote the quality education. For meeting the contemporary challenges and needs of the market, courses must be designed accordingly. Classroom facilities must be upgraded by the use of the state of the art technology along with provision of conducive and favorable learning environment in the universities. There be a healthy and interactive communication between students and teachers/administration for provide all necessary information for them related to curriculum, offerings and opportunities.

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