


## Measuring Student Satisfaction through Overall Quality at Business Schools: A Structural Equation Modeling

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### ABSTRACT

In the higher education sector, academic and service quality are the main factors that need to be focused on. Academic quality is mainly focused on learning abilities and knowledge outcomes, while service quality is focused on administrative services. The research bases its theoretical background on the service quality model (SQM) and expectancy disconfirmation model (EDM). The research follows a quantitative approach where the data was collected using a survey questionnaire based on semi-structured questions. The research reviewed female student satisfaction at business schools based on several factors derived from two underpinning theories. The variables derived from the theories and literature were Information quality, the efficiency of service, teaching quality, overall quality, student satisfaction, disconfirmation and word of mouth. The findings suggested that the university should focus more on teachers' satisfaction which would result in a positive attitude towards their students and that would result in better satisfaction. In addition, the course syllabus and quality deliverance can be better regulated by providing teachers training and workshops to help them improve their teaching style and course syllabus if needed.

**Keywords:** Satisfaction, PLS study, Karachi, Business School, SmartPLS, Word of Mouth

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## **Measuring Student Satisfaction through Overall Quality at Business Schools: A Structural Equation Modeling**

### **1. Introduction**

The Quality of Service is one of the essential attributes that can capture and satisfy the valuable customer for extended periods. Several organizations emphasize service quality because of their strategic contribution to improving competitiveness, mainly in attracting new customers and improving relationships with existing customers. Addressing good quality in higher academic institutions is a complicated phenomenon. In the higher education sector, academic and service quality are the main factors that must be focused on. Academic quality is mainly focused on learning abilities and knowledge outcomes, while service quality is focused on administrative services. Services can be both tangible and intangible. Service quality is achieved when it meets or surpasses the Expectation of customers (Parasuraman et al., 1988). When an entity shows the ability to deal with some particular needs of customers, they try to satisfy customers (American Council on Education, 2015). Service quality has become crucial while finding an organization's current position, sustaining a competitive edge, or achieving pre-eminence. In this modernized era where competition has become so high, the company that fails to achieve high service quality struggles more in the industry (Alnsour et al., 2014). Customer satisfaction is an important performance measure for regulators and providers of services in a firm. As high customer satisfaction makes customers more loyal, they act less subtle about prices, and they have very few complaints against the company's service delivery (Olatokun & Ojo, 2016). Service quality is vital to success in the current competitive higher educational environment (Sandhu & Bala, 2011).

Service quality is an initiator to achieving satisfaction. So the proper understanding of the related determinant and variables of achieving service quality will be seen as having an extraordinarily high monetary cost for service-oriented organizations in the competitive setting. Many views about the meaning of quality vary from person to person. From the view of the quality dimension (input, process and output) and the view of the stakeholder, there are several views of quality. Education at the higher or tertiary level has been mainly linked to commercial service. The university's administration must consider that students are the primary customers of any academic institute in terms of providing services. In Pakistan, tertiary education refers to the higher level of education above grade 12, which generally corresponds to the age of 17-23 years. The tertiary education system in Pakistan is divided into two sectors: the incorporated college sector and the affiliated university sector. The higher education commission (HEC) is an apex autonomous body responsible for allocating general public funds to universities in Pakistan and recognizing their degree programs. Student satisfaction mainly relies on the service elements that higher educational institutes provide. For achieving success in the academic sector, student satisfaction is an important measure and institutes still reimburse attention to service quality elements. The academic sector needs to improve the academic service quality and always pay attention to find out the gap between the services provided by the institutes and the services obtained by customers, i.e. students (Qomariah, 2012; Mulyawan & Sidharta, 2014).

Despite the dearth of accord over the conception of quality, service quality has become one of the central elements of reform and policy instruments to adapt in educational institutions to increase the Expectation from each internal and external stakeholder everywhere around the globe. To create the institution's progressive and practical clients' expectations, their preferences and quality perception regarding the overall surroundings of the establishment ought to be unbroken by the upper authorities of the institute. Service quality is an evaluation in which one can quickly identify how magnificent a service approves student's/client Expectations. Service quality significantly impacts student satisfaction along with the physical facilities provided by the institutes, which are mainly considered the most dominant tangible element (Mansori et al., 2014). Service quality and student satisfaction are interlinked, as service quality affects the satisfaction of students the most.

Perceived quality is an antecedent to customer satisfaction. Therefore, the proper study of

determinants and forerunners of customer satisfaction might be seen to have extraordinarily excessive monetary estimates for service-providing organizations in a highly competitive environment. Khan et al. (2014) developed that tangibility and assurance are the two main significant factors for improving the quality of service in a higher educational institute. Researchers also found a practical and valid relationship between student satisfaction and these dimensions. Students feel satisfied with RATER service, i.e. reliability, assurance, tangibility, empathy, and responsiveness (Afridi et al., 2016; Arambewela & Hall, 2006; Calvo-Porrall et al., 2013; Kanakana, 2014; Yousapronpaiboon, 2014). The organizations that provide better service quality would result in profitability and get more benefits in the overall market (Anderson et al., 1994). In the commercial sector, the study on service quality is considered new. Hence, service quality has become a national priority. Clients/students prefer those educational institutes that give better satisfaction levels and service quality, which gradually influences student loyalty. The more the students feel satisfied, the more they will be loyal to the selected institution (Alves & Raposo, 2009).

It was observed and noted that females in the country are treated differently, for better or worse. This behavior was also noted in universities hence the motivation to conduct this research. The research aims to identify the factors that affect female students' satisfaction in a business university in Karachi, Pakistan. Word of mouth is considered the most effective marketing strategy in higher educational institutions, which mainly relies on student satisfaction and service quality. Service quality has five dimensions widely applied to measure and evaluate service quality in higher education (Afridi et al., 2016; Arambewela & Hall, 2006; Calvo-Porrall et al., 2013; Kanakana, 2014; Yousapronpaiboon, 2014). Senthilkumar and Arulraj (2011) offered another model named SQM-HEI (service quality measurement in higher education in India), which consists of three dimensions mainly including methodology and teaching, environmental changes in education, and disciplinary action as a mediator in service quality. Student satisfaction varies continually to reiterated experiences in the institute. Recent research studies revealed that satisfied students might fascinate new students by capturing positive word-of-mouth interaction.

Several variables were identified that impacted satisfaction after several research papers the expectancy disconfirmation model (EDM) and the service quality model (SQM). The research objectives were not just to identify the factors that affect students' satisfaction but also if the satisfaction differed based on the university's education duration and age. The primary purpose of this study is to evaluate the satisfaction level of female students studying in business universities. In Pakistan, HEI higher educational institutions have been immensely pressurized since the higher education commission HEC established. The proportion and number of female students are comparatively low in business universities in Karachi, Pakistan. The factors affecting female students' academic performance and competency are interconnected to the female students' university, background, environment, family, behavioral and socio-cultural settings, and commitment. In Karachi, these factors influence female students the most. Mersha et al. (2013) stated that factors off and within the university and its facility's related issues such as administrative and academic rules, lack of role model female teachers, peer pressure, and lack of several pieces of training and seminars and workshops are the mains among all others.

The paper is based on five main sections. In the first section, we have discussed the introduction, the aim of this research paper, and dependent and independent variables. Section b is based on the literature review in which each independent and dependent variable will be discussed in detail. Section c is based on this study's theoretical underpinning, methodology, and conceptual framework. Section d is based on the detailed analysis of the results and the conclusion, implication and future recommendations in the final section. There are many studies on student satisfaction and service quality, but this study is significantly different from them as it follows a holistic approach and examines twenty-one hypotheses.

## **2. Literature Review**

A person's happiness that he or she has gained by comparing perceived performance to their

Expectation is defined as satisfaction. In the case of higher education, student satisfaction is what they all have thought to gain from their institution to become productive. Some of the essential characteristics of what job givers ask from university graduates are Knowledge, Intellectual abilities, communication skills, interpersonal skills and the ability to work in modern organizations. In the documentation, debates exist between the student expectations before enlisting in a college or university and the experience they get after enrolling in colleges or universities). The satisfaction of the service quality of the institutions covers the stress levels between customers' perceived expectations about their institutions and the reality they get. To prove that students' satisfaction and intention to stay at college or university depends on the student's experience after enrollment. Moreover, a student's practical college experience depends on faculty, advising staff and classroom facilities and should be considered as the paramount satisfaction and retention components. Many firms and organizations now focus on increasing the quality of their service because they think it is crucial for gaining new customers and making existing customers more loyal. An advanced guard of satisfaction is considered to be the quality of the service. To get a more detailed explanation of the factors affecting a customer's satisfaction, it is more likely to look at the fantastic increased monetary value for a service organization in a healthy competitive market. Quality seems different to different people; hence quality is found to be multilateral. Figure 1 illustrates the conceptual model.

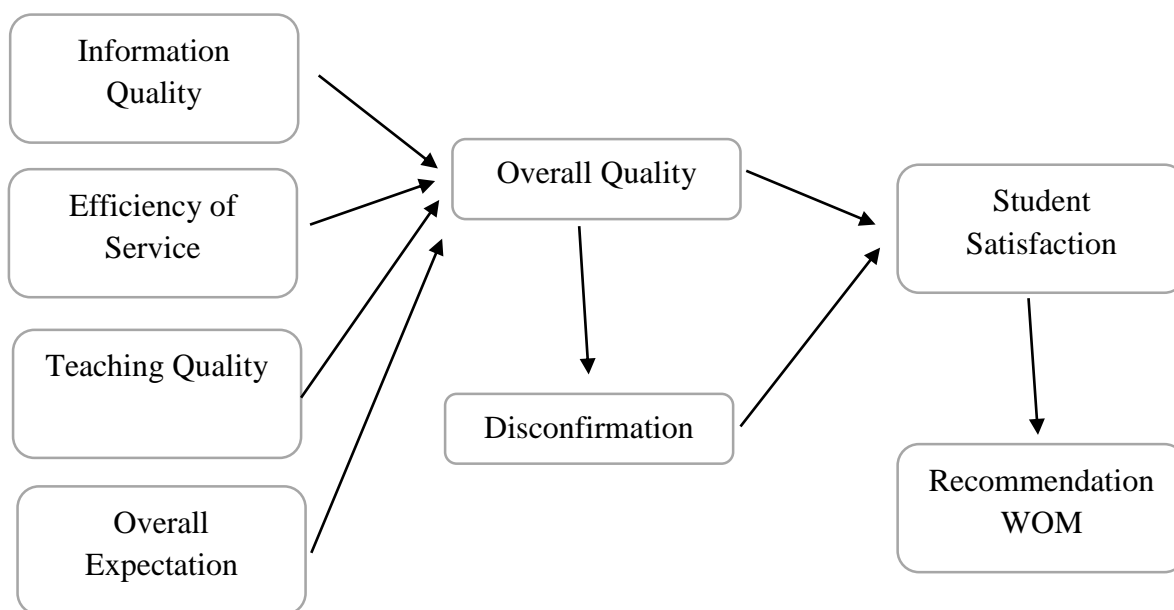


Figure 1: Conceptual framework

## 2.1. Hypothesis Development

The study has ten direct, eight indirect, and three Specific effect hypotheses. The literature discussed below supports the premises of the research.

Service quality is now becoming the central element of policy reformations to be adapted in the higher institutions that will facilitate the expectations of both internal and external stakeholders. Universities have started realizing that the service quality of universities should also be like any other service business, and they should also focus more on fulfilling students, staff and other external stakeholders' expectations in mind while delivering quality of their service. The critical component of perceived value is how customers perceive our service quality, which is the primary key to a firm's success. Many universities and organizations have realized this component, and now they have begun to track their customer satisfaction by measuring how their customer perceive their service quality. SERVQUAL was the most common method developed for measuring perceived service quality. According to this model, service quality has five dimensions Tangibles, Reliability, Responsiveness, Assurance and Empathy (Parasuraman et al. 1985, 1988).

Nowadays, the constructed idea of service quality and the degree of satisfaction got attention in the private sector as in the public sector. Quality service is one of the most contributing elements in educational institutions that capture and retain customers, particularly students and other stakeholders. The fundamental requirement to achieve service quality in an educational institution doesn't solely associate with its importance. Instead, achieving the best possible excellence at the higher education level is essential. It also had been examined that the universities begin to realize that the service they provide ought to be taken as a business like other service firms, and the universities should consider students, faculty members and other stakeholders' perceived demands while providing service.

### **2.1.1. Student satisfaction**

For the last 30 years, customer satisfaction has been discussed intensively in marketing and consumer research. In this paper, customer satisfaction refers to student satisfaction since students are observed as a consumer of higher academic institutions. In an academic context, student satisfaction is defined as a short-term perspective based on students' educational experiences of students Elliott and Healy (2001). In the higher education system, student satisfaction plays a vital role in evaluating the authenticity and accuracy of the current education system because the more significant the student satisfaction experienced, the better the ability of students to polish their course knowledge, mentality and skill development (Malik et al., 2010). Appleton-Knapp and Krentler (2006) evaluated two components that influence student satisfaction as personal and institutional factors. There is a clear relationship between the level of student satisfaction and the lecturer's quality, the availability of expedients and better use of automation and technology (Wilkins & Balakrishnan, 2013).

An institution can achieve success solely by understanding and fulfilling the needs and wants of the customer. From the total quality management point of view, all strategic decisions should be customer oriented and driven by satisfying customer needs and wants. In other words, institutions need to be constantly sensitive to emerging customer and market needs. One of the essential contributing variables of success is how the customer perceives the resulting services by the firm, as this is often the key driver of perceived success. The perceived value determines the satisfaction of the customer. Many firms, including universities, have started to trace the satisfaction of their customers by measuring their perceived level of service quality. Parasuraman et al. (1985, 1988), known as SERVQUAL, developed the most widely used model for measuring perceived service quality. According to this model, the five determinants of service quality are Tangible, Reliable, Responsive, Assurance and Empathy.

Starting with a brief reconsideration of the older two conceptual models, i.e. expectancy - disconfirmation model (EDM). The EDM implies that citizen satisfaction and its judgment, along with the consequences of satisfaction, are being developed through a person's psychological views concerning past expectations (i.e. the previous experience anticipation), views and opinions about performance or quality (i.e. what an individual experienced), and the Expectation's approval or disconfirmation related to the occurred performance and quality experience (Morgeson, 2013). The EDM was first developed in the early 20th century and has been amended over so many years, relying on the empirical research method in the field of organizational psychology and consumer behavior. Recently, this model has been used by researchers in public administration and political sciences by those who are interested in evaluating the cognitive methods responsible for the formation of satisfaction with government facilities and services in the public sector. These researches have largely approved the value of EDM in explaining the satisfaction level of the public with the government (Van Ryzin, 2004, 2006, 2007; Roch & Poister, 2006; James, 2009; Poister & Thomas, 2011; Morgeson, 2013).

The above expectations are desired to influence the other variable (i.e. a huge range of developing consumer perceptions) directly and indirectly. Initially, the post-experience based on perceived quality judgment should be influenced by the earlier expectations and perceptions of an individual's experience. While the expectations are founded on previous experience, word of mouth, social media, advertising and elders' opinion, and because individuals are so dynamic and usually rely on experience with services and products, there must be a comparatively tiny gap between the estimated

perceived and actual experienced performance.

### **2.1.2. Expectation confirmation theory (ECT)**

The theory of expectation confirmation (ECT) comes from Oliver (1977) and Oliver (1980), in his consumer satisfaction research, in the marketing field (Tao et al., 2009; Jin et al., 2013). ECT demonstrates that happiness is reached when the expectations are met, pessimistic disconfirmation of expectations leads to unrest, and constructive disconfirmation leads to improved satisfaction (Ndubisi, 2012). Likewise, according to Al-Maghrabi et al. (2011), ECT also assists in forecasting purchasing behaviour regarding goods and services before, after and after transactions. In the same way, if international students are happy with services in HEIs, their level of satisfaction will increase, but if they are poor, their level of satisfaction will decrease over time. ECT consists of four constructions: anticipation, results, affirmation and satisfaction (Chou et al., 2012). The primary definition of ECT is satisfaction since satisfaction is a locking theory in consumers (Jung, 2011). The relationship between confirmation and disconfirmation, experience and Expectation positively influence satisfaction. The prior Expectation from a positive starting view for judgment and satisfaction usually relies on the perceived past performance. As the expectation increases, the level of satisfaction is also predicted to increase, so there is a direct relationship between these factors. In the EDM, the satisfaction is taken by both the disconfirmation and confirmation through Expectation which is far from the baseline. Thus, expectations' disconfirmation is intentionally predicted to be positively influenced by satisfaction. There are two aspects: the positive and the negative disconfirmation of expectations. The positive one drives satisfaction from the above baseline level through previous expectations, and the negative one drives satisfaction from the below baseline level. Finally, performance positively (strongly) influences an individual's satisfaction level, along with the previous experience of actual performance.

*H<sub>1</sub> = disconfirmation has a significant impact on Student Satisfaction.*

Comparatively to the EDM stated above, the service quality models are the latest and imply more widely in conceptualization, empirical specification, and the overall theoretical foundation. However, these models are structured from the naive "performance satisfaction trust" idea and the "SERVQUAL" model in the early 1980s (Parasuraman, 1985). With the revolutionized internet era, the electronic commerce context was introduced through the SERVQUAL model (Loiacono et al., 2002). Afterwards, the same context was implemented in the e-government (Barnes & Vidgen, 2004; Papadomichelaki & Mentzas, 2012; Kaisara & Pather, 2011). Information quality is considered the latent factor that provides ease of accessing relevant information. Once the clarity is accessed, the chances of getting a more positive response have been increased, and, potentially, it will significantly impact overall quality perception and build satisfaction and trust. The relationship between the variables is clear, and it has been theoretically grounded that a primary purpose of E-government is to grant extensive access to consumers' information. The efficiency and accuracy of the service delivered through E-government are hypothesised to significantly and positively impact satisfaction and service quality. E-government was marketed and pursued first as an instrument for making efficient and more accessible government services, and the mentioned hypothesis described it well-supportedly. Finally, the website quality is measured for the usefulness and ease of the E-government website. It is also anticipated to positively and robustly impact quality, trust and satisfaction.

### **2.1.3. Overall quality**

Quality is not just a single thing. It is an atmosphere, a suppressed feeling and an aura that the academic institution tries to perform everything efficiently and excellently. Currently, in the higher education system, quality has already become a standard or a benchmark for the betterment of the nation. The countries which have realized the importance of overall quality and are still taking sufficient measures to intensify the standard of tertiary education are included in the top most ranking education systems. The overall quality of higher education mainly relies on Research and Development (R&D) culture. Arokiasamy and Abdullah (2012) focused on the need to pay attention to service quality to improve the learning environment for targeted students, demonstrate academic effectiveness, meet the

supposition of stakeholders and get a competitive advantage.

*H<sub>2</sub> = Overall quality has a significant impact on disconfirmation.*

As mentioned earlier, the service quality modeling methods can be gathered into the general quality service paradigm vary more widely and efficiently than what is mentioned regarding the expectancy – disconfirmation model. Papadomichelaki and Mentzas (2012) identified in their study that almost two to three dozen diverse researches and many conceptual models failed under the given general umbrella before focusing on and advancing the single parsimonious form of the service quality model (SQM). The researchers and their assistants continually lack practical and more explicit comparative guidance based on the relevant merits of the modeling mentioned above.

#### **2.1.4. Recommendation through WOM**

Word-of-mouth WOM marketing is the process in which the knowledge is shared between the person who experienced the product or service and the individual who acts as a potential customer. WOM has attracted the attention of marketers and researchers since the late 1950s (De Bruyn & Lilien, 2008; Lang & Hyde, 2013; Martin & Lueg, 2013) and is widely accepted as the most effective strategy in the concerned marketplace (Bansal & Voyer, 2000). Word-of-mouth messages are conveyed when individuals share feelings and experiences concerning products and services with their friends and family (Chattopadhyay et al., 2010). People first look for word-of-mouth recommendations when they want to buy any product or decide on any academic service. The strength of WOM communication cannot be neglected or underestimated, whether face-to-face or online. People emphasize more on WOM communication rather than relying on other marketing sources because it has more authenticity. WOM communication significantly impacts consumer behavior, especially when selecting an academic institute. According to Lehmann (2015), traditional WOM has a more significant impact on selecting a tertiary institute than electronic WOM.

#### **2.1.5. Information quality**

Information is currently becoming an explanatory resource in societies and organizations. For individual and academic purposes, they rely on information, and the quality of information (IQ) is the critical element of their decision and action quality. An individual cannot even manage information quality without meaningfully focusing on IQ measurement (Eppler, 2003; Wang & Strong, 1996).

Information quality is not a new concept for any business community or higher institution, but the concept has obtained increasing consideration throughout the last few years. Insufficient data and information quality is expected and plays a vital role for organizations whose activities are based on information and communication. Poor quality of data and information often generates several adverse effects, which may disrupt different business activities, interfere with the decision, or compromise understanding and communication among people. DeLone & Mclean (2003), referred by (Gorla et al., 2010), stated in their study that Information quality is the performance of outputs produced by the information system, which may be in the format of online screens or reports. There are four elements of information quality: completeness, currency, accuracy, and consistency (Keller et al., 1990). Accuracy is a value saved in the database, an agreement with a specific attribute about reality, or the output of an arithmetic operation. Completeness refers to the specified application with useful, relevant data. While consistency is defined as the absence of conflict between datasets, the currency is related to up-to-date information. Researchers used several elements of information quality. Nelson et al. (2005) have implemented the construct of completeness, currency, and accuracy for information quality; these three authors also used some additional constructs referring to the information outputs.

*H<sub>3</sub> = Information Quality has a significant impact on Overall Quality.*

In addition, it must be considered that there is a fundamental difference between data quality and information quality. Data quality pertains to the quality based on bare facts that reflect an entity's

or event's attributes. In contrast, information quality refers to the quality of significant data where data is converted into valuable and meaningful context (Detlor et al., 2010). Most information quality measures are derived from the user perspective and the information system. Information quality is a factor that does lead to simplicity of use and results in student satisfaction overall. Data and information measures for desired elements are similar to system output quality attributes, including reliability, completeness, accessibility, precision, meaningfulness, accuracy, adaptability, understandability, relevance and format (DeLone & Mclean, 2003).

*H<sub>4</sub> = There is a significant mediated effect of Information Quality on Overall Quality affecting Student Satisfaction that results in Recommendation*

#### **2.1.6. efficiency of service**

Efficiency is how brilliantly an operation or activity is performed. In the educational sector, productivity enhancement usually means an enhancement in workload, a more excellent student and staff ratio, and reduced wages of employees. Achieving brilliant strategic results is unpredictable and crucial (De Vit & Mayer, 1999). Efficiency refers to the relation between input and output or how effectively the input data have been converted into output data. There are seven dimensions to measure service efficiency: Organizational strategy, motivation of personnel commitment, business and management system building, corporate structure model, personnel skills development, goals and objectives of subordinates, and corporate and employee development style.

*H<sub>5</sub> = Efficiency of Service has a significant impact on Overall Quality.*

The quality and efficiency of service in higher education are not particularly important, but educational excellence is also essential. The study found that the positive perception of efficiency and service quality influence student satisfaction; therefore, with the help of word-of-mouth communication, satisfied students would attract other students as well (Alves & Raposo, 2010). Students' motivation and inspiration can be achieved by both administrative efficiency and academic performance of the institute. In academic excellence, service efficiency is considered the primary performance measure and is a critical strategic variable for maintaining a strong consumer (student) perception (Ahmad & Iqbal, 2010).

*H<sub>6</sub> = There is a significant mediated effect of Efficiency of Service on Overall Quality affecting Student Satisfaction that results in Recommendation*

#### **2.1.7. Teaching quality**

Practical teaching skills may be defined as the instruction that follows effective learning. The primary motive turns into the lasting and thorough acquisition of skills, values and knowledge the academic instructor or institution set before (Campbell & Smith, 1997). Teachers are also considered the academic managers who control and direct their students, whether in or out of the classroom (Sitra & Sasidhar, 2005). Harris and Rutledge (2007) evaluated that the forecasters of teacher effectiveness and quality are intertwined cognitive skills, educational background, and personality attributes. Teaching includes scientific and practical knowledge surrounding professional awareness that needs cognitive ability and solid expertise.

*H<sub>7</sub> = Teaching Quality has a significant impact on Overall Quality.*

Higher education should generate a continuous and comprehensive culture of service quality. Thus, improving quality in the learning and teaching process should be integrated into the context of quality. Lecturers' teaching quality varies based on their professional qualifications. The most crucial responsibility of lecturers and staff is to provide effective teaching and service. The priority of all higher educational institutes is to put effort into teaching and learning quality improvement. Learning and teaching quality defines by how well the academic lecturers and staff deliver teaching to students, how



well they interact with students, how well the academic staff entertain the students in classrooms, and how well the staff deliver information from the educational board to the students, how well they provide motivation and facilities to the students during the learning process (Marsh & Hocevar, 1991).

Higher education universities should have leadership effectiveness, professional and knowledgeable educators, outstanding teaching and learning facilities, relevant curriculum and quality students. These attributes would shape and gear the institute to be competitive worldwide. The primary learning institution's role is to produce adequate human capital for the future of its nation. Good quality education refers to the academic system's ability to fulfil the users' needs and expectations (students) through a continuous improvement process. Effective communication would be found when the lecturer manages to make a two-way communication between teacher and students through the lecturer's potential questioning techniques to the students and students' queries to the lecturer. The progress in teaching quality would increase the satisfaction level relatively among students in higher education institutes. Lecturers should maintain an effective relationship with students to enhance student satisfaction, as they are the main clients of the higher education university (Suarman, 2015).

*H<sub>8</sub> = There is a significant mediated effect of teacher quality on Overall Quality affecting Student Satisfaction that results in Recommendation*

### **2.1.8. Overall Expectation**

The overall Expectation refers to the composite constructions which involve the ideal Expectation (what customers want to happen), normative (evolving via previous experience) and prediction (what customers think to happen), which influence the satisfaction analysis of consumers (Stevenson & Sander, 1998). Research on the overall expectations of the students is relatively limited. More exploration is required to consider, understand and manage the outcomes (Abdullah, 2006; Jillapalli & Jillapalli, 2014). Overall Expectation depends on factors such as age, gender, type of university, culture, and study mode (Headar et al., 2013; Parahoo et al., 2013; Sander et al., 2000; Wardley et al., 2013).

*H<sub>9</sub> = Overall Expectation has a significant impact on Overall Quality.*

Academic institutes are already utilizing tools to measure the perceived quality and satisfaction based on student expectations (Martínez & Toledo, 2013; Mavondo et al., 2004). There would be a probability of student dissatisfaction if the higher institutions are not concerned about understanding, responding and knowing the students' expectations (Appleton-Knapp & Krentler, 2006). When a learner or student gets admission to higher education institute, he/she is highly motivated; the expectations are high as all the participants' understanding is required, especially the lecturers, who play a vital role in the expectations fulfilment of students (Borghi et al., 2016).

*H<sub>10</sub> = There is a significant mediated effect of Overall Expectation on Overall Quality affecting Student Satisfaction that results in Recommendation*

## **3. Methodology**

The research follows a quantitative approach where the data was collected using a survey questionnaire (Hashmi & Mohd, 2020; Hashmi et al., 2020a, b; Rashid et al., 2021). The questions were borrowed from established research papers published (Hashmi et al., 2021a, b). The items for the variables of Information quality, the efficiency of service, teaching quality, overall quality and student satisfaction were borrowed from a paper by Muhammad et al. (2018). Items for disconfirmation were borrowed from a paper by Pratyush et al. (2018), while the items for word of mouth were borrowed from Yoo et al. (2013).

Data was collected using google docs, making it easy to tabulate and screen the data (Rashid, 2016; Rashid & Amirah, 2017; Rashid et al., 2019; Rashid et al., 2020). Students in different classes

were given the link and asked to complete the questionnaire on their mobile phones. A convenient sampling method was followed as the entire university population could not be considered. Not only was the entire population of the students not available at any one time, but all departments were not willing to share names and exact details, not allowing for a proper representation of all the students and restricting the use of any probabilistic sampling method. As a result, a convenience sampling method was used. Even though non-probabilistic sampling methods are not as robust as the probabilistic sampling methods, it was a limitation that had to be dealt with, and the research had to be carried out. The sample size was set to 100 students from a prominent private all-female business university in Karachi, while the population framework was all female universities in the city. Karachi was selected as the population due to its diversity and representation of all the country's people. The research was done using a cross-section design that elicited cross-section data. Data were analyzed using an SEM (structural equation modeling) with the help of SMAR-PLS 3 software (Rashid et al., 2022; Rashid & Rasheed, 2022). The SEM was used to understand better the independent variables' interactive impact on the dependent variable. In addition, the software incorporates techniques that establish dynamic weights making it more practical for such analyses.

**3.1. Preliminary Analysis (Descriptive/Demographical)**

Most respondents (up to 69%) were between the ages of 21 – 25, while the second largest chunk was between the ages of 16 – 20, comprising 28.3%. About the current education of the respondents, 87.6% were doing their bachelors while only 12.4% were doing their master's. This is not an unproportioned response as the student ratio in the master's program was very low compared to the Bachelor's program. About the time (years) spent at the university. The respondents were very diverse. Even though most of the respondents (41.6%) had spent between 2-3 years at the university, approximately 34.5% had spent 3 – 5 years there. In addition, only 11.5% have spent less than a year at the university, while 10.6% have spent between 1 – 2 years. 1.8% of the respondents had spent more than five years at the university.

**4. Results and Discussion**

The measurement model results are mentioned in Table 1, in which Cronbach’s alpha values are higher than 0.7, which meets the criteria of Hair et al. (2011), who recommended that Cronbach’s alpha be more significant than 0.7. According to Hashmi et al. (2021b), composite reliability should be greater than 0.70. Thus, results show that the composite reliability of each construct is more than 0.7 which confirms the criteria. The results of Rho-A present that each construct values are more than 0.7 and meet the standards of Dijkstra and Henseler (2015). Convergent validity of the present study measured through "AVE (average variance extracted)", which is established by Fornell and Larcker (1981) as he is indicated that values of AVE must be higher than 0.5 because it has a threshold value of 0.5. However, results show that all values of AVE of each variable are more than 0.5, which approves the convergent validity of the measurement model. Table 1 shows the summarized results of the measurement model.

*Table 1: Measurement model assessment*

| Variables | Cronbach's alpha | rho-A | Composite reliability | Average variance extracted |
|-----------|------------------|-------|-----------------------|----------------------------|
| DC        | 0.71             | 0.70  | 0.73                  | 0.53                       |
| ES        | 0.81             | 0.82  | 0.89                  | 0.72                       |
| IQ        | 0.80             | 0.86  | 0.86                  | 0.61                       |
| OE        | 0.78             | 0.79  | 0.86                  | 0.60                       |
| OQ        | 0.70             | 0.72  | 0.84                  | 0.63                       |
| WOM       | 0.72             | 0.75  | 0.70                  | 0.55                       |
| SS        | 0.74             | 0.78  | 0.78                  | 0.70                       |
| TQ        | 0.75             | 0.78  | 0.73                  | 0.68                       |

*DC-disconfirmation, ES-efficiency of service, IQ-information quality, OE-overall Expectation, OQ, overall quality, WOM-recommendation WOM, SS-student satisfaction, TQ-teaching quality.*

Table 2 illustrates the Fornell-Larcker Criterion (FLC) results. According to Fornell and

Larcker (1981), the AVE values of individual constructs ought to be higher than construct correlation. As per the results of AVE, square root (diagonal) values approves and confirm the FLC criteria.

Table 2: Fornell-Larcker criterion

| Variables | DC   | ES   | IQ   | OE   | OQ   | WOM  | SS   | TQ   |
|-----------|------|------|------|------|------|------|------|------|
| DC        | 1.00 |      |      |      |      |      |      |      |
| ES        | 0.64 | 0.85 |      |      |      |      |      |      |
| IQ        | 0.63 | 0.51 | 0.78 |      |      |      |      |      |
| OE        | 0.65 | 0.77 | 0.76 | 0.88 |      |      |      |      |
| OQ        | 0.64 | 0.69 | 0.76 | 0.71 | 0.84 |      |      |      |
| WOM       | 0.34 | 0.4  | 0.43 | 0.42 | 0.42 | 0.67 |      |      |
| SS        | 0.69 | 0.75 | 0.63 | 0.75 | 0.79 | 0.38 | 0.85 |      |
| TQ        | 0.45 | 0.62 | 0.68 | 0.61 | 0.58 | 0.46 | 0.65 | 0.79 |

Note: The bold values of diagonal/aslope show AVE (average variance extracted) square root.

In order to check the standard method biases, The VIF values employed Harman's one-factor test (Harman, 1976). The values of VIF were less than 3, supporting the findings of Harman test assumptions. The results of CFA are mentioned in Table 3, in which the factor loadings of all indicator constructs are higher than 0.70, which asserts that they adequately describe the respective variables.

Table 3: Confirmatory factor analysis (CFA)

| Items | DC | ES   | IQ   | OE   | OQ   | SS   | TQ   | WOM  |
|-------|----|------|------|------|------|------|------|------|
| ES1   |    | 0.76 |      |      |      |      |      |      |
| ES2   |    | 0.88 |      |      |      |      |      |      |
| ES3   |    | 0.83 |      |      |      |      |      |      |
| IQ1   |    |      | 0.78 |      |      |      |      |      |
| IQ2   |    |      | 0.74 |      |      |      |      |      |
| IQ3   |    |      | 0.83 |      |      |      |      |      |
| IQ4   |    |      | 0.79 |      |      |      |      |      |
| OE1   |    |      |      | 0.85 |      |      |      |      |
| OE2   |    |      |      | 0.77 |      |      |      |      |
| OE3   |    |      |      | 0.85 |      |      |      |      |
| OE4   |    |      |      | 0.82 |      |      |      |      |
| OQ1   |    |      |      |      | 0.87 |      |      |      |
| OQ2   |    |      |      |      | 0.77 |      |      |      |
| OQ3   |    |      |      |      | 0.83 |      |      |      |
| SS1   |    |      |      |      |      |      | 0.81 |      |
| SS2   |    |      |      |      |      |      | 0.85 |      |
| SS3   |    |      |      |      |      |      | 0.75 |      |
| SS4   |    |      |      |      |      |      | 0.88 |      |
| TQ1   |    |      |      |      |      |      |      | 0.79 |
| TQ2   |    |      |      |      |      |      |      | 0.84 |
| TQ3   |    |      |      |      |      |      |      | 0.81 |
| WOM1  |    |      |      |      |      | 0.84 |      |      |
| WOM2  |    |      |      |      |      | 0.79 |      |      |
| WOM3  |    |      |      |      |      | 0.77 |      |      |

In order to measure the explanatory power of the conceptual model. This study examined the structural model by standardized paths. Hence, every path resembles the hypothesis which is tested. As per the results, the structural model presents the strength of the constructs and the effect of independent variables on dependent constructs through beta coefficient values. Higher beta represents a more substantial effect between independent and dependent variables. According to the model, IQ, TQ, and OE are positively correlated with OQ, but EOS shows a negative association with OQ, which has a lesser effect. However, OQ has a more substantial effect on the satisfaction of students and a lesser effect on DC as it is positively correlated with each other. According to beta values, DC presents a minor connection with SS, whereas Student satisfaction strongly affects recommendation WOM

through a positive correlation.

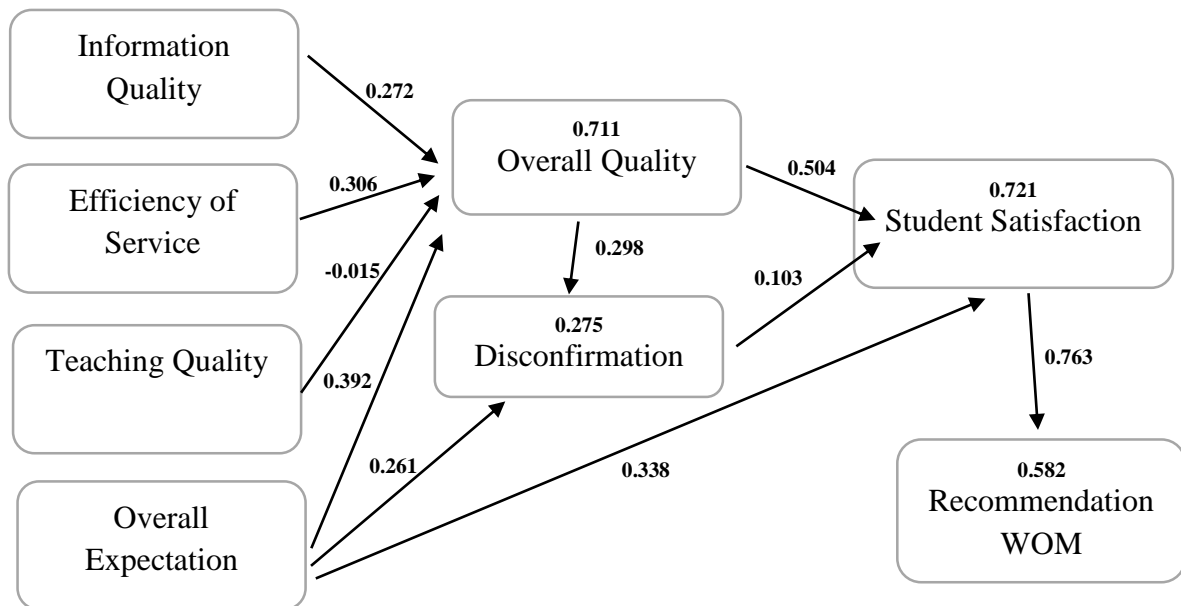


Figure 2: Graphics output of the research model

Figure 2 illustrates the graphics output of the research model showing the path analysis. The path diagram shows that the overall weightage of the items for each variable is sufficiently acceptable, having an average weightage of more than 0.6. This is because the items were borrowed from established research making the items reliable and consistent. The independent variable's path coefficient values affecting the students' overall quality show diversity. The path coefficient value for Information quality (policies and general support) is positive 0.27, while the path coefficient value for service efficiency (support services) is a positive 0.305. The path coefficient value for teaching quality is a negative 0.015, while the path coefficient value for overall Expectation was a positive 0.393. The individual path coefficient shows the weightage of the independent variables' impact on the overall quality. All the variables had a moderate positive impact on the overall quality except teaching quality. Teaching quality has a minor negative impact on the overall quality of the students. The moderate impact of the independent variables shows that the selected variables also needed to be improved as the management was not doing an excellent job of supporting the students. As per the theoretical understanding, the initial expectations are either confirmed or disconfirmed. This was checked via the path model, and it was noted that overall quality and Expectation had path coefficient values of 0.29 and 0.26, respectively, showing no significant contribution and hence no similarity.

The R square for the independent variables teaching quality, Information quality, service efficiency and overall Expectation with the overall satisfaction (as the focus variable) is 0.711. This shows that the variation in the independent variables explains the variation in the focus variable of overall quality of up to 71%. The path coefficient of overall quality towards students' overall satisfaction is 0.504 showing moderate satisfaction. Disconfirmation and overall Expectation have a path coefficient of 0.103 and 0.338, respectively, showing that disconfirmation has a minor contribution to student satisfaction while overall Expectation has a moderate contribution. The R square of student satisfaction is 0.721 showing a high explanation power. This shows that the variation in the independent variables can explain the variations in student satisfaction by up to 72% approximately. The path coefficient of student satisfaction to recommendation (WOM) is 0.763 showing a high contribution towards word of mouth. Keeping the data and results in mind, it can be said that satisfied students at the university will be more likely to recommend the university to their friends. The R square of WOM is 0.582 showing that the variation in student satisfaction explains (affects) WOM by 0.58%. Table 4 illustrates the significance of the path.

Table 4: Significant path contribution

| Path Diagram                              | T- Statistics | P Values | Significant |
|---|---------------|----------|-------------|
| Disconfirmation -> Student Satisfaction   | 1.567         | 0.118    | No          |
| Efficiency of Service-> Overall Quality   | 4.393         | 0.000    | Yes         |
| Information Quality-> Overall Quality     | 3.322         | 0.001    | Yes         |
| Overall Expectation-> Disconfirmation     | 1.792         | 0.074    | No          |
| Overall Expectation ->Overall Quality     | 4.874         | 0.000    | Yes         |
| Overall Expectation->Student Satisfaction | 4.270         | 0.000    | Yes         |
| Overall Quality -> Disconfirmation        | 2.213         | 0.027    | Yes         |
| Overall Quality -> Student Satisfaction   | 6.343         | 0.000    | Yes         |
| Student Satisfaction-> Recommendation     | 17.713        | 0.000    | Yes         |
| Teaching Quality-> Overall Quality        | 0.248         | 0.804    | No          |

Bootstrapping was done in SmartPLS to identify the significance of the variables' contribution to the path diagram. This was done to identify if the path coefficient were significant or not. Table 5 indicates the path coefficient for disconfirmation -> Student Satisfaction does not have a significant contribution as the sig value is greater than 0.05 and the T-value is less than 2. The path coefficient for Efficiency of Service-> Overall Quality has a significant contribution as the sig value is less than 0.05 and the T-value is more than 2. The path coefficient for Information Quality-> Overall Quality has a significant contribution as the sig value is less than 0.05 and the T-value is more than 2. The path coefficient for Overall Expectation-> Disconfirmation does not have a significant contribution as the sig value is greater than 0.05 and the T-value is less than 2. The path coefficient for Overall Expectation->Overall Quality has a significant contribution as the sig value is less than 0.05 and the T-value is more than 2. The path coefficient for Overall Expectation->Student Satisfaction has a significant contribution as the sig value is less than 0.05 and the T-value is more than 2. The path coefficient for Overall Quality -> Disconfirmation has a significant contribution as the sig value is less than 0.05 and the T-value is more than 2. The path coefficient for Overall Quality -> Student Satisfaction has a significant contribution as the sig value is less than 0.05 and the T-value is more than 2. The path coefficient for Student Satisfaction-> Recommendation has a significant contribution as the sig value is less than 0.05 and the T-value is more than 2. The path coefficient for teaching Quality-> Overall Quality does not have a significant contribution as the sig value is greater than 0.05 and the T-value is less than 2.

Table 5: Indirect effect

| Path Diagram                                     | T- Statistics | P Values | Significant |
|--|---------------|----------|-------------|
| The efficiency of Service-> Student Satisfaction | 3.714         | 0.000    | Significant |
| Teaching Quality -> Student Satisfaction         | 0.240         | 0.810    | No          |
| Information Quality -> Student Satisfaction      | 2.606         | 0.009    | Significant |
| Overall Expectation -> Student Satisfaction      | 4.623         | 0.000    | Significant |
| The efficiency of Service-> Recommendation       | 3.578         | 0.000    | Significant |
| Teaching Quality -> Recommendation               | 0.240         | 0.810    | No          |
| Information Quality -> Recommendation            | 2.584         | 0.010    | Significant |
| Overall Expectation-> Recommendation             | 7.219         | 0.000    | Significant |

Table 6 presents specific indirect effect results where other than Teaching Quality -> Student Satisfaction and Teaching Quality -> Recommendation, all indirect effect paths have a significant contribution to the respective variable. The path coefficient shows that teaching does not significantly impact students' satisfaction or lead to further recommendations.

Table 6: Specific indirect effect

| Path Diagram  | T- Statistics | P Values | Significant |
|---|---------------|----------|-------------|
| Information Quality -> Overall Quality-> Student Satisfaction-> Recommendation  | 2.588         | 0.010    | Significant |
| Overall Expectation -> Overall Quality-> Student Satisfaction-> Recommendation  | 3.844         | 0.000    | Significant |
| Efficiency of Service-> Overall Quality-> Student Satisfaction-> Recommendation | 3.481         | 0.001    | Significant |
| Efficiency of Service-> Overall Quality-> Student Satisfaction-> Recommendation | 0.330         | 0.899    | No          |

The specific indirect effect was tested on the path analysis using the SMART PLS, which identified all relations that were significant and not significant. The research is reporting those complete path flows that have a significant impact. The results showed that Information Quality -> Overall

Quality-> Student Satisfaction-> Recommendation path had a significant impact as its P value was less than 0.05. This shows that information quality contributes to the overall quality of the university, which results in overall student satisfaction, which leads to recommendations (WOM). The validity of the research was checked and was found acceptable. Discriminant validity was acceptable as HTMT (Heterotrait Monotrait Ratio) were under .09.

## **5. Conclusion**

The research reviews the satisfaction female students experience at an all-female university based on several different factors derived from two theoretical underpinnings. The variables derived from the theories and literature were Information quality, the efficiency of service, teaching quality, Overall quality, Student satisfaction, disconfirmation and word of mouth. Unlike other studies in a similar domain that showed other factors having a significant impact on causing dissatisfaction, the research being conducted showed that teaching quality had the most significant impact on reducing student satisfaction. In line with other researchers, the study validates that other factors like Efficiency of Service, Information Quality and Overall Expectation as having a significant impact (direct) on student satisfaction. Keeping in mind that teaching quality had an inverse impact on student satisfaction, it is worth noting that the teaching quality variable is reflected as a broader domain that includes the teaching quality, course, the attitude of the teacher and much more. The university can focus more on ensuring that the teachers are happy and have a positive attitude towards their students, which may result in better satisfaction. In addition, the course syllabus and delivery quality can be better regulated by providing teachers training and workshops to help them improve their teaching style and course syllabus if needed.

### **5.1. Limitations and Future Research**

The research shows the different variables which significantly contribute to the satisfaction of students considering the evidence from the research. The research shows that information quality and efficiency of service; in addition to the overall Expectation, are half-relevant contributions towards the word equality. In addition, the most crucial understanding here is that student satisfaction is vital through word of mouth. Keeping this in mind, we are unable to understand the importance of student satisfaction and its role in future recommendations made by the students. Evidence from the research makes it clear that encouraging positive word of mouth is essential to satisfy the students in an academic institution. This simple goal can be achieved by understanding the critical factors' role in this research. Academicians should keep in mind the results of this research and understand that efficiency of service and information quality has a significant role in the overall education quality. In addition to this, a student is for the signs relating to the scum formation. Additionally, Expectation also contributes significantly to the overall satisfaction and quality of the student.

### **5.2. Limitations and Recommendations**

One of the limitations of the study was that the research was conducted in one of the female universities in Pakistan. Even though there is more than one university that caters to only the female student population, it was difficult to approach other institutions considering the Covid Crisis. In addition to this, the research followed a quantitative Research Design which focused on the empirical data it was utterly objective. It is recommended that qualitative research design be used to understand further and explore the different factors which may also be necessary for female University students. Considering the broader academic contribution, a comparative study in the future could bring decent results, which may be better revealed. Taking into account a number of Institutions is not possible because pure female universities are not very common.

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**Appendix: Questionnaire**

- 1. Gender a) Male b) Female
- 2. Age a) 16-20, b) 21-25, c)26-30, d)30-35, e)36+
- 3. University a) Public b) Private
- 4. Type of Education a) Bachelor b) Master c) MS/M.Phil. d) PhD
- 5. Years in the university a) Less than a year b) 1-2 Year c) 3-4 Year d) 4-5

**Directions:** The following set of statements relate to your feeling and opinions about university. For each statement, please show the extent to which you believe that the university has the features described by the statement. Once again, ticking a 5 means that you consider that university has features you strongly agree, and ticking a 1 means that you consider the features strongly disagree. There is no right or wrong answers- all we are interested in a number that best shows your expectations and perceptions about the university offering services.

**Section A: Service Quality**

| Strongly Disagree |   | Disagree  |  | Neutral |  | Agree    |   | Strongly Agree |   |   |                          |   |   |   |   |   |
|-------------------|---|---|--|---------|--|----------|---|----------------|---|---|--------------------------|---|---|---|---|---|
| 1                 |   | 2   |  | 3       |  | 4        |   | 5              |   |   |                          |   |   |   |   |   |
|                   |   |   |  |         |  | Expected |   |                |   |   | Experience/<br>Perceived |   |   |   |   |   |
| Tangibility       | 1 | University has state-of-the-art computer lab  |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 2 | University has modern library with sufficient collection                            |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 3 | Physical facilities of the university are visually appealing                        |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 4 | Employees of university appear smart and neat                                       |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
| Reliability       | 1 | University has qualified teaching staff   |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 2 | University provide their services at promises to do so                              |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 3 | Administrative services at university provide error-free record                     |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 4 | Employees competence and ability to solve students problems                         |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 5 | University staff show interest in solving students problems                         |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
| Responsiveness    | 1 | Employee of university provide quick and prompt services                            |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 2 | Employees of university ready to help the students                                  |  |         |  |          |   |                |   |   |                          |   |   |   |   |   |
|                   | 3 | Employees of university are never too busy to respond to requests                   |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 4 | University gives individual attention to students                                   |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
| Assurance         | 1 | University applies uniform discipline to everybody                                  |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 2 | University provides accurate and timely information                                 |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 3 | University creates harmonious relationship among staff and students                 |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 4 | University develops democratic campus regulation                                    |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
| Empathy           | 1 | University staff understand students' needs   |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 2 | University staff treats students equally and with respect                           |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 3 | University staff is polite, kind and professional in communication with students    |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 4 | University staff show positive attitude towards students                            |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |
|                   | 5 | University staff is available for consultations and is forthcoming towards students |  |         |  |          | 1 | 2              | 3 | 4 | 5                        | 1 | 2 | 3 | 4 | 5 |

**Section B: Assessment of Student Satisfaction**

Please indicate your degree of **SATISFACTION** with respect to each of the following items in relation to the overall services provided by your university, by placing a checkmark  $\checkmark$  or circling a number in the relevant box below.

| Highly Dissatisfied | Dissatisfied                                 | Neither Satisfied nor Dissatisfied | Satisfied | Highly Satisfied |
|---------------------|--|------------------------------------|-----------|------------------|
| 1                   | 2  | 3                                  | 4         | 5                |
| 1                   | Most students feel a sense of belonging here |                                    |           |                  |

|    |   |
|----|---|
| 2  | The campus staff are caring and helpful   |
| 3  | Faculty care about me as an individual  |
| 4  | Admissions staff are knowledgeable  |
| 5  | Financial aid counselors are helpful  |
| 6  | My academic advisor is approachable   |
| 7  | The campus is safe and secure for all students  |
| 8  | The contents of the courses within my major is valuable                                     |
| 9  | A variety of extra-curricular activities are offered  |
| 10 | Administrators are approachable to students   |
| 11 | Fee policies are reasonable   |
| 12 | Financial aid awards are announced to students in time to be helpful in university planning |

Section C: Competitiveness

|                               |   |   |
|-------------------------------|---|---|
| Service Quality               | 1 | The university has enlighten building   |
|                               | 2 | The university labs are equipped with the state of the art technology           |
|                               | 3 | The university library is rich in collection                                    |
|                               | 4 | University teachers are accessible off the class hours                          |
|                               | 5 | The university staff is responsive to questions                                 |
|                               | 6 | University provide excellent service quality                                    |
| Knowledge                     | 1 | Lecturers have extensive knowledge of their subjects                            |
|                               | 2 | The curriculum helped to developed my analytical and logical thinking           |
|                               | 3 | Developed by writing and speaking skills  |
|                               | 4 | Had an excellent learning experience at university                              |
| Image & Reputation            | 1 | The university has a good image in the mind of students                         |
|                               | 2 | Adequate number of students proper admission in university                      |
|                               | 3 | The university has a good reputation because of its past performance            |
|                               | 4 | Community ranks the university at reasonably good position amongst the other    |
| Cost/Fee                      | 1 | The tuition fee is reasonable, given the quality of education                   |
|                               | 2 | The university charging lower tuition fee                                       |
|                               | 3 | The university is offering grants and subsidies to attract students             |
|                               | 4 | The university charging reasonable hostel fee                                   |
|                               | 5 | The university charging reasonable examination fee                              |
| Location                      | 1 | The university is located as accessible through public transport                |
|                               | 2 | The university is close to civic centers of the city                            |
|                               | 3 | The university is close to other universities                                   |
| Marketing                     | 1 | University students often do mouth marketing                                    |
|                               | 2 | University is well known to the markets & potential students                    |
|                               | 3 | University news in often public through media mix                               |
|                               | 4 | University has mass media coverage of university events                         |
| Employability / Job Placement | 1 | My senior students have been employed within short time period                  |
|                               | 2 | The university facilitates job search and job hunt through its placement office |
|                               | 3 | The university educate about job application exercise                           |
|                               | 4 | I have gained some knowledge and skills to enter a particular career            |

(Thank you so much for your kindness and your help in filling out this questionnaire)

| Construct                     | Item                     | Question wording (abbreviated)                                     | Scale |
|-------------------------------|--------------------------|--|-------|
| Age                           | Age                      | What is your age, please?  | 18-99 |
| Education                     | Education                | What is the highest level of formal education you completed?       | 1-5   |
| Gender                        | Gender                   | [Gender measured by observation/interviewer recognition]           | 1-2   |
| Race                          | Race                     | Primary Race   | 1-6   |
| Political ideology            | Political Ideology       | Extremely Liberal...Extremely Conservative                         | 1-8   |
| Political identification      | Political Identification | Democrat...Republican  | 1-4   |
| Government agency experienced | Agency                   | SSA/IRS/Census(HHS)  |       |
| Overall quality               | Overall Quality          | How would you rate the overall quality of the (AGENCY/DEPARTMENT)? |       |

|                             |                     |  |      |
|-----------------------------|---------------------|--|------|
| Overall expectation         | Overall Expectation | How would you rate your expectations of the overall quality of services from the (AGENCY/ DEPARTMENT)?   | 1-10 |
| Information quality         | InformationQuality1 | How difficult or easy was it to get information about the (AGENCY/ DEPARTMENT)'s services?   | 1-10 |
|                             | InformationQuality2 | Was the information about (AGENCY/DEPARTMENT)'s services clear and understandable?   | 1-10 |
| Efficiency of service       | EfficientService1   | How timely and efficient was the (AGENCY/DEPARTMENT) in providing the services you wanted?   | 1-10 |
|                             | EfficientService2   | How difficult or easy was it to obtain services from the (AGENCY/ DEPARTMENT)?   | 1-10 |
| Website quality             | WebsiteQuality1     | How difficult or easy was it to use the (AGENCY/DEPARTMENT) website?   | 1-10 |
|                             | WebsiteQuality2     | How useful was the information on the (AGENCY/DEPARTMENT) website?   | 1-10 |
| Citizen satisfaction        | Satisfaction        | First, please consider all your experiences to date with the (AGENCY/ DEPARTMENT)'s services. How satisfied are you with the (AGENCY/DEPARTMENT)'s services?   | 1-10 |
| Disconfirmation             | Disconfirmation     | Considering all of your expectations, to what extent have the (AGENCY/ DEPARTMENT)'s services fallen short of your expectations or exceeded your expectations? | 1-10 |
| Citizen Trust in Government | Trust               | Generally speaking, how much of the time do you think you can trust the government in Washington?  | 1-10 |

*e-WOM participation*

EP1 I frequently write a customer review.

EP2 When I leaving a customer review, I elaborately write it.

EP3 I spend much effort in posting review.