



Students perceptions of service quality. A comparative study of public and private sector universities in Pakistan

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Abstract

In recent times, efforts to measure the quality of higher education institutions in Pakistan have surged. Several studies have shown that the quality of services comes up short on a quality appraisal device. This comparative study of public and private universities' service quality provides insight based on students' perceptions and expectations. The study collected data through a well-structured three-part SERVQUAL instrument, administered to a sample of 218 students from 50 universities in Pakistan. The data was analyzed using descriptive statistics, *t*-Tests and one-way ANOVA. The results showed a gap between students' expectations and perceptions. Students' satisfaction levels declined during their stay at universities. Public-sector universities reported more decline as compared to the private sector. Consistent with previous studies, students gave high priority to tangible assets such as classrooms, labs, and other infrastructure. Students were mostly dissatisfied with service quality aspects that involved relationships with teachers and administrative staff. Universities need to improve their response mechanisms to sympathetic behavior and work on improving the student-teacher relationship. We collected data during the COVID-19 pandemic. Therefore, the study provides new information on the service quality gap in the context of the COVID-19 crisis. The changing educational context due to COVID-19 demands universities and policymakers revisit students' needs and prioritization to provide them with personalized support based on social, emotional, and academic well-being.

Keywords: Service quality, SERVQUAL, expectations, perceptions, students' satisfaction, service quality gap, Quality education, Higher education institutions

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Introduction

Quality education empowers youth to build up the entirety of their characteristics and abilities to accomplish their probability as exemplified individuals and citizens. Opportunely, Pakistan boasts the world's largest youth population, with 64 percent of the population under the age of 30 (Ahmad, 2018). Pakistan can greatly surge ahead both economically and socially by providing quality education and professional skills to the massive youth labor force that would futuristically raise the level of output and the rate of growth (Husain, 2005). In this regard, the role of the country's higher education institutions (HEIs) is considered crucial. The HEIs efforts to integrate Pakistan's legions of youngsters into the education system and the labor market seems plausible. However, the quality of educational services offered is widely criticized due to reasons such as inadequate infrastructure (Khurshid et al., 2021), teaching quality (Qureshi et al., 2012), reliable and responsive administrative support and policies (Hassan & Jafri, 2017).

There has been a substantial discussion about the meaning of Service Quality in higher education, which have definite excellence as the distinction in teaching. Rendering to Hossain and Abdullah (2006), quality is the conformance of teaching production to the deliberate aims. They explained service quality in education is the valuation of pupils' facilities in educational institutions. The facilities include both tangibles such as infrastructure to intangibles such as teaching quality. Researchers used several models to investigate service quality. Among these, the five-dimensional SERVQUAL model (Service Quality Model) presented by Parasuraman et al. (1985) has been widely used and accepted (Aboubakr & Bayoumy, 2022; Hassan & Jafri, 2017; Sukardi et al., 2022). The five dimensions are reliability, responsiveness, tangibility, assurance and empathy. These dimensions are widely accepted and used in various sectors and contexts.

The SERVQUAL model intended to amount provision excellence as professed by customers. It gives the chance to an organization to evaluate its service quality execution based on five dimensions measurements. Customers can be mandated into various segments depending on their individual SERVQUAL scores. SERVQUAL gap investigation approach appears to be an intelligent and direct idea and the survey is additionally pre-portrayed and can be adjusted as required. Essentially, SERVQUAL is an effective measurably valid benchmarking instrument because of all the field testing and refinement (Amelia et al., 2011).

Pakistan is a developing country that places a high value on human capital developed through a higher education system that includes both public (government-funded) and private (student tuition fees-funded) institutions. Most degree-awarding higher education institutions are chartered (recognized) universities chartered by the federal or provincial governments based on the recommendations of the Higher Education Commission (HEC), but they also include research institutes or military academies. According to the HEC Pakistan, there are more than 233 chartered HEIs in the public and private sector that compete for students and funding. Sixty per cent (140) of the 233 accredited universities are public, while the rest are private. Altogether, around two million students are enrolled in these HEIs (UNESCO, 2021). Many private providers are smaller, specialized, market-oriented institutions that primarily offer programs in fields like business management and information technology. Public universities, on the other hand, are large, multi-faculty research institutions that provide a full range of academic programs in fields such as science, engineering, and medicine. Pakistan's HEIs compete based on quality assurance, teaching



quality, research, finance, facilities, social integration, and community development (Akhtar et al., 2015).

The efforts to measure Pakistan higher education system have surged in recent times. Several studies show the quality of services comes up short on a quality appraisal device. Studies found gaps in expected and perceived services with a low level of students' satisfaction (Hassan & Jafri, 2017; Khurshid et al., 2021; Palupi & Ramadhani, 2020). Students are the most important customers in the educational sector. They are the primary recipients of the services provided. The satisfaction of other important stakeholders, such as parents, is dependent on student satisfaction. Given this, institutional efforts to improve services and quality should be centered on ensuring that these students are satisfied (Gruber et al., 2010). However, according to a prior study related to this research, student satisfaction in the majority of HEIs in Pakistan is not among the highest (Hassan & Jafri, 2017). On the other hand, the number of higher educational institutions is increasing day by day, with little attention paid to the quality of services they provide. Consequently, the institution's image and students both are suffering. Though, several HEIs (public/private) are making efforts to improve their services as per the Higher Education Commission of Pakistan (HEC) guidelines. Still, HEIs need regular measurement of service quality gaps (Barnes, 2007). The service quality gap or satisfaction gap is defined as the difference between Expectations (E) (student's belief that something will happen or be the case) and Perception (P) (students get aware of something through the experience) that need to be analyzed (Lee, 2006). The gap model is represented by the following simple yet complex equation for this study;

$$\text{Satisfaction } (S) = \text{Perception } (P) - \text{Expectations } (E)$$

Subsequently, the measurement of service quality becomes a continuous function that facilitates maintaining an acceptable quality level to accomplish the scholastic objectives (Khan & Nawaz, 2011) and improve satisfaction (Lee, 2006). This study measured the service quality gap of both private and public universities in Pakistan using a SERVQUAL model. The results of the study may facilitate HEIs in Pakistan to understand what students require or where they are lacking in providing quality services.

Based on the above problem discussion this study first investigates the most prioritized service quality dimensions and then the service quality gap (SERVQUAL model) using the following research questions;

- What are the most important service quality dimensions for students at Pakistan's public and private universities?
- What is the service quality gap of Pakistani public and private universities?

However, the objectives set are as follows;

- Determine the relative importance of each of the service dimensions when students' assess the service quality of an educational institution;
- Determine students' expectations and perception of the current level of service; To find out better quality measure



- Identify problems faced by students and suggest measures for the improvement of educational institutions

Literature review

Service Quality

The SERVQUAL model is widely used to measure the quality of services offered by institutions (Aboubakr & Bayoumy, 2022). Parasuraman et al. (1988) first defined and measured service quality using SERVQUAL. They argued services are intangible, assorted, perishable, thus require a distinct framework for the explanation and measurement of quality. Consumers of products judge quality based on tangible indicators. However, the quality of services is generally determined by experience, which is difficult to quantify and analyze (Parasuraman et al., 1988; Parasuraman, et al., 1991). They described service quality as the difference between what customers want (expectations) and what they experience (Perception). They developed a service quality measuring scale ‘SERVQUAL’ based on this notion. According to Parasuraman et al. (1991), if the “experienced service is less than the expected service”, the service quality is unsatisfactory (p. 39). They identified service quality as a set of 22 elements constituting five distinct dimensions as tangibility, reliability, responsiveness, assurance and empathy (see *Table 1*). According to Parasuraman et al. (1991), reliability is largely concerned with service outcome. Whereas the remaining four dimensions tangibility, responsiveness, assurance and empathy are more concerned with the service process. Parasurman et al. measured customers' expectations and perceptions on a 7-point Likert scale to determine perception minus expectations gap scores. They concluded, to achieve a higher degree of service quality the difference should be higher.

Table 1: Definitions of five service quality dimensions adopted from Parasuraman et al. (1991)

Dimensions	Definition
Tangibility	Appearance of physical facilities, equipment, personnel and written materials
Reliability	Ability to perform the promised service dependably and accurately
Responsiveness	Willingness to help customers and provide prompt service
Assurance	Employees' knowledge and courtesy and their ability to inspire trust and confidence
Empathy	Caring, easy access, good communication customer understanding and individualized attention given to customers

The initial use of the SERVQUAL model by other researchers found criticism. The critics (see Babakus & Mangold, 1992; Carman, 1990) found SERVQUAL a poor fit to measure service quality. Any researcher can use this gap model to find distinct scores based on different mental filters (Brown et al., 1993). Noteworthily, Parasuraman, Berry, and Zeithaml (1991) re-examined



the SERVQUAL instrument's scale dependability by re-applying it to three distinct service sectors, including telecommunication, insurance firms, and banks. The reexamination helped to enhance the dimensions and validated the SERVQUAL model's reliability and validity. Cronin and Taylor (1992) used four surveys (SERVQUAL, importance-weighted SERVQUAL, SERVPERF and importance-weighted SERVPERF) in four different service industries. Subsequently, they found the SERVPERF more appropriate to define the service quality. Later, Teas (1993) also agreed with Cronin and Taylor (1992) that un-weighted perceived performance scales such as SERVPERF establish better concurrent and construct validity. However, further advances in research found SERVQUAL a useful tool to measure the relationship among dimensions of service quality and customer satisfaction (Al-Alak & Alnaser, 2012; Khan & Nawaz, 2011; Malik et al., 2010). Particularly, Hill (1995) applied SERVQUAL in tertiary education, Anderson (1995) used the SERVQUAL instrument to measure the quality of services of University Health Center, Hassan and Jafri (2017) used SERVQUAL to understand the differences in services of various HEIs. Whereas Khurshid et al. (2021) used the SERVQUAL model to measure the competitive dimension of the physical infrastructure of Pakistani universities.

Importance of Service Quality in the Education Sector

Understanding the complexities of the evaluation process in measuring the quality of education is a crucial first step in developing and implementing effective strategies (Sukardi et al., 2022). The SERVQUAL approach has been advocated for inclusion in the list of quality appraisal scales as an instrument that can effectively assess the quality of education services in higher education institutions (Aboubakr & Bayoumy, 2022). In the education sector, students are the customer (McElwee & Redman, 1993; Rigotti & Pitt, 1992). The lower perceived service quality by students may seriously impact the reputation of universities (Hossain, 2013). Hassan and Jafri (2017) asserted that students are more satisfied when their university makes efforts to understand the link between the service attributes and the educational accomplishments that students achieve. Table 2 outlines the wide range of educational services provided by most universities. The description covers both objective properties (function of service) and subjective attributes (opinions) of university services (Lee, 2006). Student needs are the focal point of each dimension's description, because students' needs, when fulfilled, significantly affect satisfaction.

Table 2: Aspects of five dimensions of service quality in HEIs

Dimension	Description in Educational Context
Tangibility	The appearance of actual classrooms, labs, library, cafeteria, equipment including teaching aids, teachers' qualification, and correspondence materials (M. C. Hill & Epps, 2010). It may also include the university's staff appearance and the state of the structure inside (seating arrangement), and outside, university signs, symbols, logos, and commercial materials (Lin Tan & Foo, 1999).



Reliability	Teachers and other academic support staff's ability to carry out the guaranteed services constantly and precisely, or follow through on their guarantees. This measurement is basic, as students desire to enroll in universities that stay loyal to their obligations. Universities need to keep students informed about their examination policies, cancellation of admission, fee structure, and any amendments that may be made (Ramsden, 1998).
Responsiveness	Willingness to help students and offer support whenever required. This measurement is concerned with managing the students' solicitations, questions and issues instantly and mindfully. A university is considered responsive when it imparts to its students what amount of time it would require to find solutions or have their issues managed (Cook & Leckey, 1999). To be effective, universities need to ponder responsiveness according to the perspective of the students instead of the universities' viewpoints.
Assurance	Assurance is dependability, civility, validity, and security. Information about the information and civility of university staff and their capacity to rouse trust and certainty. Assurance may also include parents' trust in university staff, i.e., parents feel that their children are in a safe and conducive environment (HamidUllah et al., 2011; Hassan & Jafri, 2017).
Empathy	The university's personalized and attentive treatment of students (combines unique elements of access, correspondence, and understanding of the students) (Al-Alak & Alnaser, 2012). Students ought to be treated as they are interesting and extraordinary. Sympathy can be shown in different ways such as knowing the student's name, his /her inclinations and requirements.

The higher education institutions (HEIs) need to look for models capable of assessing students' perceptions (Abdullah, 2006). They need to focus on how society values the skill and capacity of university graduates (Ginsburg, 1991; Lawton, 1992) along with how graduate students perceive their overall learning environment (Pimovski, 1991; cited in Abdullah, 2006). In Pakistan, the Higher Education Commission (HEC) assesses the quality of higher education institutions. However, HEC mainly monitors policies, general practices and the structure of courses. While universities are responsible for assessing the student satisfaction gap (P-E). Provision of service quality means attraction, satisfaction and retention of students, which directly impact job security, funding and capability of HEIs (Low, 2000). The teaching methods (responsiveness and reliability), the teaching staff (tangibles) and the good administration support (assurance and empathy) lead to student satisfaction (Marzo Navarro et al., 2005) and reflects higher perceived service quality (Gruber et al., 2010). In a recent study, Aboubakr and Bayoumy (2022) also found reliability, followed by tangibles, as the highest-rated dimension that contributes to students' satisfaction, whereas assurance was the lowest-rated dimension. Among The absence of any of the



five service quality dimensions either reliability, tangibility, responsiveness, assurance or empathy leads students to dissatisfaction (Douglas et al., 2008). Donaldson and Runciman (1995) identified service quality as a key strategic component for institutions seeking to increase market share and preserve a distinct image.

In a nutshell, students who have had a positive experience at their university are more likely to be satisfied with the institution than those students who have had a negative experience (DeShields et al., 2005). Institutions need to meet students' expectations as it affects students' level of satisfaction and their perceptions of institutional effectiveness (Juillerat & Schreiner, 1996). Helgesen and Nettet (2007) confirmed the positive relationship between service quality and student satisfaction. To conclude, the SERVQUAL scale is appropriate for measuring the quality of services. The current study uses the SERVQUAL scale to evaluate the quality of services offered by public and private universities in Pakistan. The next section presents the methodology used to conduct the research.

Methodology

The quantitative study followed a descriptive research design, where participants (students) shared their experiences and personal views. An online survey questionnaire previously used by Hassan and Jafri (2017) was adopted to collect primary data. The survey instrument contained three parts. Part 1 collected information on students' prioritization of five service quality dimensions. Part 2 assessed students' Expectations (E) of the services across the five dimensions using 22 structured statements. Whereas, Part 3 used the same 22 statements across the five SERVQUAL dimensions to assess the students' Perception (P). The 22 statements representing different aspects of service quality were measured on a 7-point Likert scale (1 = *low* to 7 = *high*). The survey followed the method used by Parasuraman et al (1988), the statements were concisely repeated to measure expectations and then perceptions of services as shown in Table 3. The survey was distributed online to the final semester undergraduate and postgraduate students (both male and female) belonging to 50 Public and Private Universities in Pakistan through an anonymous link in email, Facebook, WhatsApp Groups and LinkedIn.

Table 3: SERVQUAL instrument to measure expectations and perception scores

Item	No of items	Expectation (E)							Perception (P)						
		1	2	3	4	5	6	7	1	2	3	4	5	6	7
Tangibility	Professional Teachers	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Teaching Aids.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Classrooms Condition	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Seating arrangement	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Cafeteria	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Reliability	Reliable Teachers' Performance	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Promised Services	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Service right at the first time.	1	2	3	4	5	6	7	1	2	3	4	5	6	7

	Complete and Accurate Info		1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Notice before cancelling admission		1	2	3	4	5	6	7	1	2	3	4	5	6	7
Responsiveness	Listening Complaints	4	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Adjustment of Classes		1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Re-Examination policy		1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Corrective measures		1	2	3	4	5	6	7	1	2	3	4	5	6	7
Assurance	Trust on Teachers	4	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Parents' Trust on Teachers		1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Secure Environment		1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Conducive Environment		1	2	3	4	5	6	7	1	2	3	4	5	6	7
Empathy	Show Care & Concern	4	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Understanding Needs		1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Students First		1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Courteous Staff		1	2	3	4	5	6	7	1	2	3	4	5	6	7

The study defined the Satisfaction Gap model as the difference in expectation and perception scores as shown in Figure 1. The gap model may provide distinct implicative results when Satisfaction is greater than zero (positive value), less than zero (negative value) and equal to zero. The positive value of satisfaction suggests that students are satisfied, i.e., perceptions exceed expectations, whereas the negative value shows that expectations not met. Indifference will occur when the model gives zero, i.e. expectations and perceptions are equal.

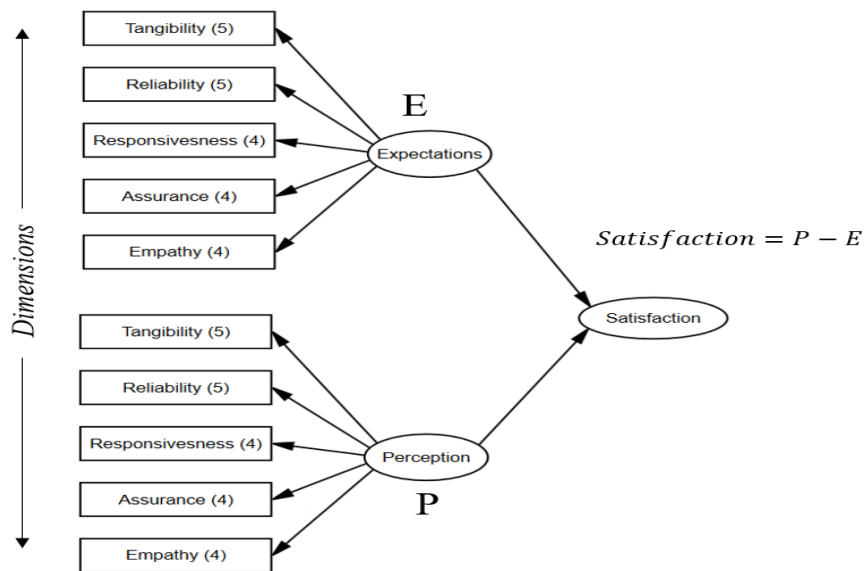


Figure 1: Satisfaction gap model for the study

Findings



This section contains the results of the data obtained using the SERVQUAL instrument. The following section first presents descriptive results for Part 1, 2, 3 and then proceed with the inferential analyses of the data. As the data belonged to non-parametric variables, descriptive statistics were used to describe the basic features of the survey data.

The survey was distributed online to the students belonging to 50 Public and Private Universities in Pakistan through an anonymous link in email, Facebook, WhatsApp Groups and LinkedIn. Across all social media platforms and email, the survey received 254 responses in total. It is important to note the data was collected during the COVID-19 lockdown, which largely affected data collection efforts. The other strategies such as paper-based distribution and in-person completion of the survey were forced to stop due to COVID-19 breakout. The online responses were screened using the "completion rate" criterion i.e. responses with less than 10% completion rate were excluded. Following the screening process, 218 responses were chosen for analysis from the students of 31 universities (as shown in

Table 4). The SERVQUAL survey instrument was completed by 124 undergraduate and 94 postgraduate students, most of whom were in the last semesters of their respective degrees. The majority of the students belonged to public-sector universities (63%). Fifty-seven per cent (57%) of the students that participated were female, while 43% were male. The SPSS missing values analysis tool was used to further screen 218 responses and found no values missing from the data set.

Table 4: University wise response frequency and 94 of responses

Name of Universities	Frequency	Percent	Cumulative Percent
University of Karachi	53	24.3	24.3
NED	5	2.3	26.6
National University of Science and Technology	21	9.6	36.2
Shah Abdul Latif University Khairpur	11	5.0	41.3
IBA Sukkur	11	5.0	46.3
Jinnah University for Women	22	10.1	56.4
IQRA University	7	3.2	59.6
Quaid e Azam University	5	2.3	61.9
Institute of Business Management (IoBM)	6	2.8	64.7
The Millennium Universal College	5	2.3	67.0
DHA-Suffa University	7	3.2	70.2
Bahria University	29	13.3	83.5
University of Engineering and Technology Taxila	4	1.8	85.3
DOW	6	2.8	88.1
Commecs	7	3.2	91.3
Others	19	8.7	100.0



Total	218	100.0
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Reliability Statistics

The study adopted a well-established SERVQUAL instrument previously used by researchers (see Hassan & Jafri, 2017). The instrument's scale reliability, as measured by Cronbach's Alpha, was outstanding. The $\alpha = 0.975$ indicates that the tests and scales that were adopted for gathering research data were an excellent fit for the purpose (Taber, 2018).

Part 1 of the survey asked participants to rank the dimensions of service quality on a scale of one to five. The more important a dimension was to them, the participant could keep that dimension at high priority and vice versa. The first row of Table 5 shows the percentages for all dimensions that received Rank 5 (high priority). The most prioritized dimension was Tangibility (22.94%), which included the physical appearance of the university, staff, facilities and communications materials. At Rank 4, the highest prioritized dimension was Empathy (31.65%), which illustrates, apart from tangibility students were largely concerned about the caring and individualized attention that the university's staff provide to them.

Table 5: Ranks assigned to service quality dimensions by the participants (percentages)

Rank	Tangibility	Reliability	Responsiveness	Assurance	Empathy
Rank 5	22.94	14.68	17.43	15.60	12.84
Rank 4	22.02	23.85	16.51	21.56	31.65
Rank 3	18.81	20.18	23.39	21.56	18.81
Rank 2	19.27	19.27	18.35	17.89	16.97
Rank 1	16.97	22.02	24.31	23.39	19.72

Besides, when part 1 data was cross-tabulated with the two groups of universities (private and public) it showed, students who attended public universities had low expectations in all service quality dimensions except Tangibility. Whereas, students at private universities were more inclined to prioritize responsiveness, reliability, assurance and empathy. The major difference between the private and public universities was for the dimension "responsiveness". The students of private universities gave more importance to the willingness of the university's staff to help students and provide prompt service. The dimension "Tangibility" received the same prioritization from both groups.

Part 2 of the survey requested participants to rank their expectations as a student of their University. They were asked to select a score from 1 (very low) to 7 (very high) to show their level of 'Expectations (E)' and 'Perception (P)'. A note to assist students was also provided to define the purpose of both Parts. Table 6 shows the descriptive statistics for the five dimensions of the construct Expectation and Perception. For Expectations, notice that the mean values of all items were above five, which shows students were having a relatively high level of expected services from their respective universities. However, the value that appeared most often in the data set was seven ($Mode = 7$), which shows very high expectations in all dimensions.



Table 6: Descriptive statistics for Part 2 & Part 3 data

			Expectation (E)			Perception (P)		
Item		N	Mean	Median	Mode	Mean	Median	Mode
Tangibility	Professional Teachers	218	5.80	6.00	7	5.53	6.00	7
	Teaching Aids.	218	5.14	5.00	5	4.98	5.00	5
	Classrooms Condition	218	5.32	6.00	7	5.02	5.00	7
	Seating arrangement	218	5.16	6.00	7	4.78	5.00	6
	Cafeteria	218	4.62	5.00	7	4.30	4.00	6
Reliability	Reliable Teachers' Performance	218	5.48	6.00	6	5.22	5.00	6
	Promised Services	218	5.00	5.00	6	4.75	5.00	5
	Service right at the first time.	218	4.77	5.00	6	4.72	5.00	5
	Complete and Accurate Info	218	5.64	6.00	7	5.27	6.00	7
	Notice before cancelling admission	218	5.47	6.00	7	5.31	6.00	6
Responsiveness	Listening Complaints	218	4.83	5.00	7	4.68	5.00	5
	Adjustment of Classes	218	5.28	6.00	7	5.09	5.50	7
	Re-Examination policy	218	5.26	6.00	7	4.99	5.00	7
	Corrective measures	218	5.22	6.00	7	4.79	5.00	6
Assurance	Trust on Teachers	218	5.78	6.00	7	5.35	6.00	6
	Parents' Trust on Teachers	218	5.64	6.00	7	5.43	6.00	7
	Secure Environment	218	5.90	7.00	7	5.56	6.00	7
	Conducive Environment	218	5.50	6.00	7	5.13	5.00	7
Empathy	Show Care & Concern	218	5.51	6.00	7	5.05	5.00	7
	Understanding Needs	218	5.34	6.00	7	5.01	5.00	6
	Students First	218	5.25	6.00	6 ^a	4.94	5.00	6
	Courteous Staff	218	5.33	6.00	7	4.94	5.00	6

a. Multiple modes exist. The smallest value is shown

When compared with 'Expectation' scores, 'Perception' scores in all five service quality dimensions indicated a significant drop i.e. the value of $P - E$ was negative. The mode for Perception stayed the same (mode =7). However, the frequency of appearance has decreased significantly, indicating that students are less satisfied with the overall services provided by their universities. Only a few services, such as professional teachers, reliable teacher performance, complete and accurate information, and a safe environment were able to somewhat match students' expectations. The Skewness and Kurtosis values for all dimensions were within the range of normality (less than ± 1.0), which showed the distribution of scores was close to normal. The drop-line chart of Expectations and Perception by private and public sector universities (see Figure 2) confirmed a significant drop from expected to perceived services. The drop for public sector

universities is far larger than for private universities. It indicates the public sector universities were unable to meet the low expectations of students. Private sector universities scores also showed a significant drop in overall satisfaction.

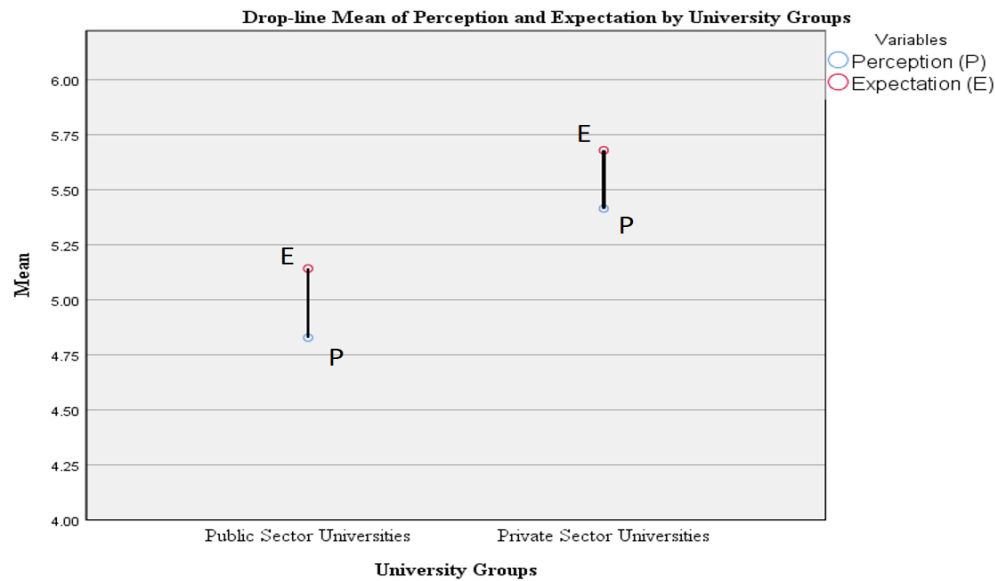


Figure 2: Mean of Perception and Expectation by group (Private and Public Universities)

Figure 3 shows the drop-line mean of perception and expectations ($P - E$) for all the sampled universities in the population. It indicates few universities had a greater P-E drop, i.e., a significant decrease in the overall service quality of the universities. Due to students' initial high overall expectations of private universities, the biggest declines were observed. Those attending public universities had low starting expectations, which decreased further, but were marginally better than private universities.

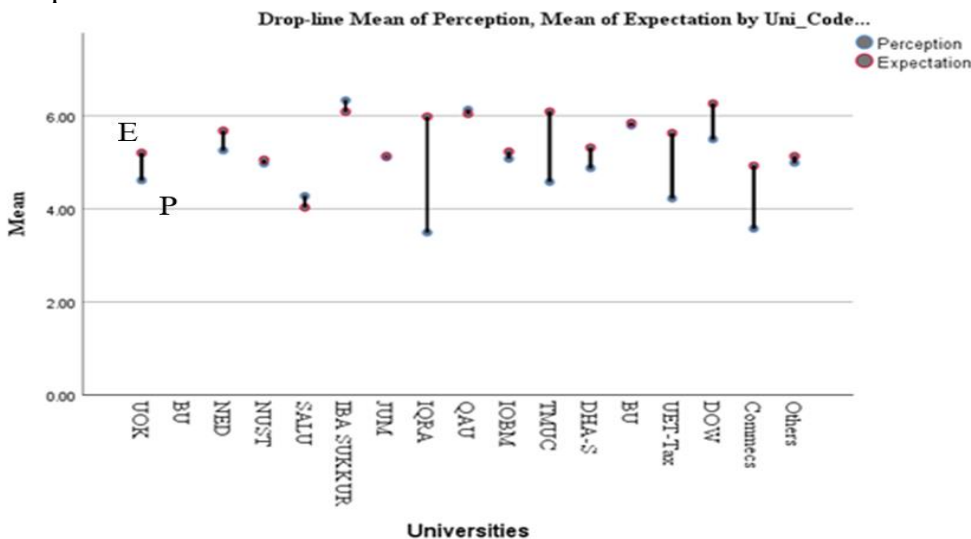


Figure 3: University wise Drop-line Mean of Perception, Mean of Expectation

Inferential Statistics



To investigate the differences between expectation and perception of students from both sectors of universities, the dependent (paired sample *t*-Tests) was conducted on expectation and perception scores. The dependent sample *t*-Test compared the means of expectation and perception taken from the same students. The results (see Table 7) showed a significant difference ($t = 4.121, p = 0.000$) in the expectations and perception of students.

Table 7: Results of Paired sample t-Test

Paired Samples Test									
Paired Differences									
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Expectation - Perception	0.2958	1.0597	0.0718	0.1543	0.4372	4.121	217	0.000

To find differences between the private and public sector universities scores of expectations and perception, an independent sample *t*-Test was conducted. The expectations (see Table 8) results were statistically significant ($t = -3.077, p = 0.002$) and had a mean difference of -0.537. The negative *t* value and mean difference show that students at public universities had much lower expectations than students at private universities. The same is the results for perception ($t = -3.108, p = 0.002, mean\ diff = -0.587$) that the perception of public sector university students was significantly lesser than the private sector. These findings are consistent with the results of the descriptive statistics (Table 6) that showed students had higher expectations and perceptions from private sector universities.

Table 8: Independent sample t-Test results

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Expectation	Equal variances assumed	0.001	0.979	-3.077	216	0.002	-0.53679	0.17447	-0.88067	-0.19292
	Equal variances not assumed			-3.078	165.309	0.002	-0.53679	0.17441	-0.88115	-0.19244
Perception	Equal variances assumed	0.025	0.875	-3.108	216	0.002	-0.58680	0.18881	-0.95895	-0.21465
	Equal variances not assumed			-3.130	168.749	0.002	-0.58680	0.18748	-0.95690	-0.21669

The study also conducted mixed-measures ANOVA on expectation and perception scores of public and private sector universities. The ANOVA results (see Table 9) showed that statistically significant differences exist ($F(15, 202) = 2.139, p = 0.010; F(15, 202) = 3.279, p = 0.000$) between the results of two groups.

Table 9: One-Way ANOVA results

ANOVA		
Students perceptions of service quality	47	Nabila Hassan Syed Shahid Zaheer Zaidi & Miraj Jafri



		Sum of Squares	df	Mean Square	F	Sig.
Expectation	Between Groups	47.634	15	3.176	2.139	0.010
	Within Groups	299.916	202	1.485		
	Total	347.551	217			
Perception	Between Groups	79.766	15	5.318	3.279	0.000
	Within Groups	327.641	202	1.622		
	Total	407.407	217			

The next section of the study will discuss the findings and their interpretation for public and private sector universities in Pakistan.

Discussion

The research purpose was to measure the students' satisfaction i.e. service quality gap through perceptions and expectations scores when students judge the services of their universities. We defined it as the "level of satisfaction" (Lee, 2006). Our findings suggest low satisfaction scores for universities in Pakistan. Except for tangibility, significant differences in the service quality dimensions were found between private and public sector universities. "Tangibility" the most prioritized dimension from both groups (Arshad & Ameen, 2010; Hassan & Jafri, 2017) indicates a link between students' satisfaction and physical aspects of their university (Khoo et al., 2017; Letcher & Neves, 2010). It indicates students seek improved tangible factors that can contribute to higher service quality for educational institutions (Aboubakr & Bayoumy, 2022; Khurshid et al., 2021). Factors such as; 'class setup, digital laboratories and libraries, infrastructure quality and reliability, security, cleanliness and other assured service qualities contribute to the image of excellence being created' (Khurshid et al., 2021, p. 2167).

During the last few years, many private and public sector universities in Pakistan underwent noticeable infrastructural developments (QAA, 2017). However, poor tangibility perceptions scores (as indicated in Table 10), particularly for public universities, emphasizes the need for more investments in factors related to tangibility. They need to upgrade classrooms and learning centres, incorporate contemporary arrangements such as tiered seating, customize lighting packages, upgrade desk and seat quality and provide students with individual computers (Arshad & Ameen, 2010; M. C. Hill & Epps, 2010). Students can tell the difference between a normal classroom and one that has been upgraded. Hill and Epps (2010) suggest, "students rate course enjoyment, classroom learning, and instructor organization higher in upgraded classrooms than in standard classrooms" (p. 65). The finding also indicates the prevailing relation between satisfaction and service quality dimension (Lee, 2006). The results are important for university administrators making or planning to make capital and infrastructure decisions regarding university classroom improvements.

Table 10: University wise Mean of expectation, Mean of Perception for the five dimensions of Service quality

Dimensions	Public		Private	
	Mean (E)	Mean (P)	Mean (E)	Mean (P)
Tangibility	4.95	4.62	5.66	5.44
Reliability	5.1	4.9	5.57	5.32
Responsiveness	4.94	4.68	5.51	5.23
Assurance	5.55	5.16	5.98	5.73
Empathy	5.18	4.77	5.68	5.36

The other notable result was related to responsiveness that received the lowest mean scores for expectations. The students of both groups had poor expectations from universities about their willingness to help students and provide prompt services (Parasuraman, Zeithaml, et al., 1991). Part 3 perception scores indicated a further decline causing lower satisfaction towards the quality of services as shown in Figure 4. Noticeably, the findings indicated wider differences between public and private sector universities’ responsiveness scores. Though the private sector scores were lowest, still they performed better when compared with the public sector.

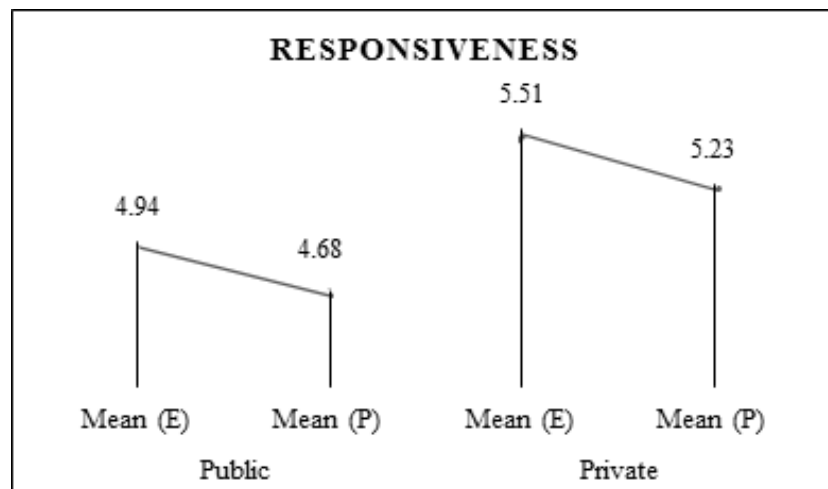


Figure 4: Group Responsiveness mean scores for expectation and perception

Students expressed their dissatisfaction regarding the responsiveness of university administrative staff (Hassan & Jafri, 2017). Lack of administrative support and late response to students queries increases student dissatisfaction (Abbasi et al., 2011). It is critical for both groups of universities to develop improved mechanisms regarding listening complaints, adjustment of classes, re-examination policy and corrective measures. In educational setups responsiveness consists of administration interaction with students in ways such that they understand, value, and support students’ important personal needs and goals (Reis & Clark, 2013). University responsiveness policy should be to support and strengthen the relationship with its students. Similarly, students



also need to understand that responsiveness is a relational process that develops over time, in which the behaviour of both parties (administration-students) matters (Reis & Clark, 2013).

As previously mentioned the data was collected during the COVID-19 lockdown during which most universities were forced to close and operate online. The universities response to students queries and issues may be influenced by their ability to operate in a fully online environment (Calder et al., 2021; Khalid et al., 2021). Traditionally, public sector universities staff are considered less prepared for the transition to a fully online service environment. Several employees including teachers reported ‘stress and anxiety to handle family and work from home’ (Khalid et al., 2021, p. 2253). However, the influence of COVID-19 appears to be inconsequential when the results were compared to previous studies (e.g. Abbasi et al., 2011; Hassan & Jafri 2017), which reported similar results for dimension responsiveness. Hassan and Jafri (2017) stressed that universities are facing quality Human Resource acquisition problems. Traditionally public sector universities are accused of not following consistent human resource acquisition policies as compared to the private sector. According to International Labor Organization (ILO), the political and social influence in Pakistan reduced public organizations’ ability to make merit-based appointments. Despite this, students ought to have the right to get satisfactory information, response and comprehension for them to accomplish scholastic greatness in institutions. Obtaining admission to a high-quality educational institution would enable students to gain a better understanding of their course of study (Soares, Novaski, & Anholon, 2017). It will help them gain confidence in their abilities to learn and present their work to wider audiences (Leonnard, 2018). The other dimensions reliability and empathy also reported low P-E scores showing an overall drop in the level of satisfaction. The service quality aspects related to the ability of universities’ staff to propagate and perform the promised services dependably and accurately showed only marginal decreases in perception scores. Especially, the universities ability to provide service right at the first time (-0.15) and gives notice before cancelling admission (-0.16) showed the lowest drops. The scores illustrate a reasonable communication mechanism that propagates relevant and accurate information to all stakeholders. Information regarding academic policy and access to reliable and accurate facts are critical for demonstrating ethical communication policies and the propagation of good intentions (Arshad & Ameen, 2010). Such communication practices allow universities to do more good and act fairly than harm or create injustice to stakeholders. Because trustworthy and accurate facts and information play such an important part in human decision-making, true and honest communication is essential for competent and ethical communication. (Eisenmann et al., 2015).

However, within dimension empathy, the aspect ‘teacher show care and concern’ received the highest P-E drop (-0.46) among all 22 aspects of five service quality dimensions. The low scores suggest students’ desire for more personalized and closer relationships with teachers and other support staff available at universities. Care and concern are part of students’ academic, social, and emotional learning. It reflects teachers’ inclination to know students, which can create in students a feeling of connectedness to the university (Zins et al., 2007). Learning is a social process and education institutions are social places. Students do not learn alone but rather in collaboration with their teachers and peers (Zins et al., 2007). Thus, universities either public or private need to address this important educational aspect to improve learning.



Besides, dimension assurance that comprised of service quality aspects such as students' trust in teachers, parents' trust in teachers abilities, secure and conducive environment comparatively received the overall highest mean scores (5.60 out of 7.0 points) for both the private and public sector universities. In the context of an educational institution, assurance refers to the knowledge, courtesy and ability of a university's staff to convey trust, confidence and build genuine relationships with students (Lin Tan & Foo, 1999). Building honest and long-term "customer relationships is a primary, controllable means for service companies" to improve customers' perceptions (Parasuraman et al., 1991, p. 46). However, the P-E difference shows students high expectations dropped by 0.39 for the public and 0.26 points for the private sector. Within the dimension assurance, one aspect, students' trust in teachers shows the second-highest drop ($P - E = -0.44$) in satisfaction. The finding reflects students' trust that existed prior to enrolment weakened during their stay at the universities. It also shows a decline in student-teacher relationships that mainly occurs due to the imbalance of power between students and teachers and the prevalent use of coercion by teachers (Jamieson & Thomas, 1974). "The use of coercive power is shown to be negatively related to student satisfaction, learning, and the extent to which teacher influence transcends the classroom" (Jamieson & Thomas, 1974, p. 321). In the long term, improving teacher-student relationships and interactions have significant and positive implications for both the academic and social growth of students (Rimm-Kaufman & Sandilos, 2010). Hagenauer and Volet (2014) found students' trust in teachers' abilities significantly impacts students' outcomes, such as student motivation and drop-outs. These interactions can involve both in-class interaction and support as well interactions outside of classrooms (e.g., office visits). The better the quality of the relationship between students and teachers, the more satisfied the students are with the university (Hagenauer & Volet, 2014).

Conclusion

We used a service quality model to determine the difference between perceptions and expectations of public and private sector university students in Pakistan. In the context of HEIs, students who use the university services can best describe service quality and not the service providers. Low scores were found for both public and private sector universities between users' perceptions and expectations of all 22 survey statements regarding different aspects of service quality. These results imply universities were unable to match students' initial expectations and students' satisfaction levels declined during their stay at university. The students showed dissatisfaction related to those service quality aspects that mostly demonstrate their relationships with teachers and support staff. According to Parasuraman et al. (1991), the decline of students' trust in teachers, care and concern shown by university's staff, the response rate of students' queries and delivery of promised services indicates "unrealized customer relationships". University relationships with their students are central to exceeding customer expectations. This process involved better response mechanisms, empathy, and assured service over and over again. Universities need to make sincere efforts to understand students' issues and provide personalized support based on the social, emotional, and academic well-being of their students. Universities chances of meeting and exceeding students' expectations seem higher when their claims are true to the service provided rather than an imaginative representation of the service. They need to work on service delivery and streamline feedback mechanisms to avoid service delivery failures. Applying the same treatment to every student might not work in these unprecedented times of



crisis (such as COVID-19). Therefore, the changing educational context due to COVID-19 demands universities and policymakers revisit students' needs and prioritization to provide students with personalized support based on social, emotional, and academic well-being.

The analysis also suggested different sets of university wise results. Public sector universities appeared to be dealing with more issues related to the quality of their services than private sector universities. The physical infrastructure and other tangibility aspects that are most prioritized by the majority of students seem to be in a dire state of affairs.

Future research

The study contributes to the application of the SERVQUAL model in the higher education sector. In particular, the study not only contributes to the existing knowledge about the service quality gap between public and private universities in Pakistan, it also provides new information on the service quality gap in the context of the COVID-19 crisis. However, due to the COVID-19 outbreak, the study sample size was limited to 218 students and was unable to reach out to more universities. Due to the closure of universities, researchers collected data using online methods only. The larger sample size could provide more data that could lead to more information and more precise estimates. Further, this study collected data from universities located in two provinces (Sindh and Punjab) of Pakistan. Future studies that would include universities from all provinces could increase the sample size and provide results that could be generalised to a larger audience. Another limitation was that the study collected quantitative data. For future research, a larger sample size and a mixed-methods approach that employs both quantitative and qualitative data collection and analysis should be adopted to generate more in-depth and generalised results.

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