

***SERVQUAL reborn: Does Faculty Members' Quality Approach Fosters Academic Performance?
(Case of Eight Local Higher Education Institutes)***

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ABSTRACT

Keywords:

SERVQUAL,
Quality management practices,
Academic performance,
Faculty members,
Higher education institutions

This article describes the impact of three dimensions of SERVQUAL (Service Quality) approach on Academic Performance in Higher Education Institutions. These dimensions are termed as Quality Management Practices (QMP). The methodology consists of a convenience sampling technique and adopted questionnaires were distributed among 400 respondents, including (faculty members, students, and management/admin staff) of eight universities in Khyber Pakhtunkhwa province. Descriptive and inferential statistics (Chi-square, Pearson correlation, and ANOVA) are used. The results are statistically acceptable in terms of reliability and validity. In case of faculty members and students; the strongest service quality dimension is Reliability, having an overall acceptance level of (74%, 70%), followed by Tangibility (78%, 62%), and Responsiveness (72%, 62%) respectively. Despite, faculty members still need extensive efforts to improve SERVQUAL's QMP mechanism. Recommendations and Implications are highlighted for Higher Education Institutions, and further research discussions are suggested.

INTRODUCTION

Higher education institutions regarding service quality have gained importance because of social mobility and government agenda for human capital development. It has attracted the attention of scholars and practitioners since the introduction of the concept. In this regard, service quality may provide required outcomes and thus may play a very vital role to make the institutions more and more effective in real sense.

The concept of service quality is dominated by the western perspective, namely as SERVQUAL developed by Parasuraman, Zeithaml, and Berry (1985). Parasuraman et al. (1985) revealed the determinants of service quality, which entails responsiveness, assurance, tangibility, empathy, and reliability. It is difficult to evaluate the service quality due to its vague notion regarding subjective nature, abstract, and complex nature.

The inception of Service Quality (SERVQUAL) in higher education has become of critical concern globally, including Pakistan. Following the fact that evaluation of services is very complicated,

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education being one of the services is complicated too during the evaluation of its quality. Higher education institutions globally have established quality assurance units or departments in order to monitor and control quality standards. In an era of stringent competition, universities attract highly qualified faculty members toward achieving highly qualified graduates has necessitated them to pay more concern to service quality issues.

However, previous studies in service quality have shown that service quality implementation can increase the pattern of service delivery and customer's satisfaction (internal and external) that subsequently will enhance organization performance (Trivellas and Santouridis, 2016; Khalid, Ali and Makhbul, 2019; and Mashenene, 2019). An in-depth investigation of literature related to organizational management suggests that an exceptional and well-planned quality agenda is challenging to execute if an organization fails to understand customer's requirement effectively in HEI. The needs and wants of customers (internal and external) are critical, and they need to be continuously reviewed and integrated into organizational operations processes. Therefore, customers' needs and wants must be given due attention and fulfilled to ensure their satisfaction.

a. Why Quality?

Sallis (2014) defines, "Quality is what we all know when experienced, but explaining the meaning of quality is a more difficult task." Similarly, according to Ross (2017), "Quality is the integration of all functions and processes within an organization in achieving the continuous improvement with respect to quality of goods and services".

b. Why Quality Management?

Chin and Rao (2003) describe quality management as a mean of confirmation by an institution to itself and to other that conditions and standards set by the institution are met and achieved. The idea is supported by Morley (2003), stating there is a need of enhanced skills of representation, measurement, resource management and evaluation for transparency of decision-making, accountability, and standards in the professions. Nair (2006) indicates that quality management practices are correlated with performance dimensions. Besides, Tari and Sabater (2004) are of the view that quality management casts a very significant influence on the outcomes.

Parasuraman et al. (1985) has identified five dimensions of quality in service sector known as Service Quality or SERVQUAL model.

Table 1.1 Quality Dimensions/ Practices in Education Sector

<i>Dimensions</i>	<i>Definition</i>
Responsiveness	Faculty and Staff willing and ready for students` assistance.
Reliability	Accurate, correct, and latest curriculum.
Empathy	Focusing, caring and giving attention to students.
Tangibility	Physical accessibility of facilities and equipments.
Assurance	Assuring the students about employees `ability and trust.

Source: Derived from Parasuraman`s SERVQUAL model (1985)

Numerous studies regarding the relationship between service quality and customer`s satisfaction yields in better performance is a significant research area, although the identity of service quality as pioneering concept, which is the source of satisfaction to the employee, thus is inadequately discussed in the literature of quality management in higher education (Trivellas and Santouridis, 2016). Quality management researchers found that this situation has been due to the following reasons: First, previous studies have given more attention regarding the differences of definition, purpose, dimensions, and importance of service quality (Gupta and Kaushik, 2017). Secondly, many studies used simple correlation analysis methods in comparing the association between customer perception and service quality (Mokhtar and Husain, 2015). Thirdly, the practice of measuring higher education service quality by employing a generic model (SERVQUAL) has ignored the context-specific to the education service environment (Ushantha and Kumara, 2016). Consequently, previous studies only produced general recommendation insufficient for the organization in understanding the complicated nature of SERVQUAL to a design systematic continuous improvement plan to achieve customer satisfaction and meet organizational goals. Thus, this may be the reasons why clear answer regarding what dimensions shapes comprehensive SERVQUAL model to achieve satisfaction in HEI still being disputed.

Most of the previous studies, in spite of criticisms e.g., the study of Bigne et al., (2003), Prugsamatz et al., (2006), Arambewela and Hall, (2009), Yunus et al., (2009), Shekarchizadeh et al., (2011) with respect to student perception at higher education have employed three popular approaches namely as SERVPERF (Gul, Jan, & Shah, 2019)., HiEduQual (Latif et al. (2019), and HEdPERF (Abdullah, 2005) to investigate the achievement of students in academics. This study employs another model than above three by adopting the Service Quality (SERVQUAL) scale as originated by Parasuraman et al. (1985) which is regarded as an all-inclusive multiple-ratter performance-based evaluation construct containing

realistic dimensions of Service Quality specifically in the field of higher education. The SERVQUAL scale constructs consist of five major dimensions. The scale is empirically tested for reliability, unidimensionality, and validity. Moreover, SERVQUAL is an industry-specific scale for the service sector. Hence, this study addresses the SERVQUAL approach by applying it to faculty members of concerned HEI.

Research Gap

Unfortunately, there is no proper empirical research conducted to investigate the dimensions of Quality Management practices and especially a SERVQUAL approach in HEI of KP province. Based on previous studies conducted, the majority of the studies in Pakistan have concentrated on the measurement of service quality in HEI, e.g., (Gul, Jan, & Shah, 2019; Latif, Farooq, & Ullah, 2019; Ashfaq, 2017; Sardar, Amjad, & Ali, 2016; Kashif, Ramayah, & Sarifuddin, 2016; Rehman, 2016; Khalid, 2010; Chaudhry, 2008;). However, the said published work did not establish the effect of SERVQUAL dimensions on academic performance and found insufficient in giving the answers to research questions of the study. This article adds novelty and covers the inadequacy regarding the effects of Service Quality dimension on academic performance in HEI.

Study Objectives

Typical questions rose while doing the research; like *RQ1*: Do the faculty members of target universities follow SERVQUAL 3-dimensional Quality Management practices?; *RQ2*: Does the implementation of 3-dimensional QM practices increase the performance of the faculty members?; *RQ3*: To what extent the 3-dimensional QM practices by faculty members fosters academic performance?; *RQ4*: Do the target universities encourage and promote 3-dimensional Quality Management practices?

Based on the above research questions, the proposed objectives of the study are formulated as under;

1. To investigate that faculty members adopt 3-Dimensional Quality Management practices.
2. To investigate that 3-Dimensional QMP affect the academic performance of students.
3. To find out whether 3-Dimensional QMP is a reliable and valid instrument of measurement used in HEI.
4. Finding the relationship among three dimensions of QMP.
5. Finding the relationship between three dimensions of QMP with Academic Performance.

6. To submit such meaningful suggestions based on results, for improving the administration of the concerned universities through the implementation of 3-Dimensional Quality Management Practices.

Research Justification

In Pakistan, higher education is one of the critical areas in the service sector blueprint. Therefore, the measurement and management of service quality in higher education is vital for economic sustainability and national targets achievement. This factor pushes higher education to be more accountable for their service quality and responsive to customer's demand. This study is way too significant because service quality plays a critical and determinant role in academics, which especially is neglected in local universities.

LITERATURE REVIEW

To underpin the current study, a review is focused on the SERVQUAL model. It is a popular model which is employed by various researchers across different service sectors and especially in higher education institutes. (Temba, 2013; Daniel and Berinyuy, 2010)

Hypotheses Development

SERVQUAL: A Theoretical aspect

The pioneer researchers to develop a tool for measuring the service quality were Parasuraman, Zeithaml, and Berry (1985). The SERVQUAL model was further modified through a series of publications (Parasuraman et al., 1985, 1986, 1988, 1990, 1991a, 1991b, 1993, 1994). SERVQUAL model is used as a tool to measure the service quality in HEI.

Various authors defined service quality as:

- “Quality is meant for the best, and certain customer conditions describe the actual use of the product and its selling price (Feigenbaum, 1962)
- “Quality is about all the things which consist of satisfying needs and wants.” (Edwards, 1968)
- “The level and degree of the product which satisfies the consumer wants, and it is the degree regarding the specific product, conform the design or specification.” (Gilmore, 1974)
- “Service quality reflects about a measure which shows that the delivered services match the customer's expectation in what level.” (Lewis and Booms, 1983)

All the above-quoted definitions support the construct that Service Quality and customer satisfaction to each other are directly related. These studies showed that consumer satisfaction is substantial when the service provided is equal to or better than expectations. Hence, the review of the literature supports the construct that quality of service is one of the primary aspects of customer satisfaction and loyalty.

Service Quality is a vital issue to authors on account of its significant influence on customers' satisfaction and desired performance outcomes as viewed by Ali and Zhou (2013), Seth et al., (2005), and Sureshchandar et al., (2003). The well-established literature in this area has shown several conceptualizations and there is a minimal consensus with respect to the development of a well-established and unique concept of Service Quality (Sharif and Kassim, (2012), Kitchroen, (2004), Carman, (1990), Bolton and Drew, (1991). However, in view of Zeithaml, (1985) "Service Quality is a customer-oriented issue which is difficult for service sectors firms to describe and use the word "service quality" and develop appropriate concepts specifically. Also, the given services become inadequate to the perception of customers because of the discrepancy found between the expected services and desired services (Rushton, Croucher, & Baker, 2017).

Despite these difficulties, various constructs have been developed so far to describe and understand the dimensions of service quality. Although, Seth et al. (2005) believe that, there is a lack of unique construct being widely applied and generically accepts in evaluating the service quality. However, SERVQUAL is predominant and most widely applied construct of service quality based on perception and expectation of customers about the services provided (Ali et al., 2012). The outcome is perceived service quality, which evaluates the demands and perceptions (Parasuraman et al., 1988; Gronroos, 2007). Though; some authors (Cronin & Taylor, 1992) have criticized this concept regarding its application as well as generalization. Previous studies confirm that merely measurement of perception-oriented Service Quality generates more appropriate outcome than evaluating perception against expectations. (Sultan & Wong, 2013)

H₄: There is a significant positive relationship between 3 Dimensions of QM practices".

Service Quality in Higher Education

The term Service Quality is regarded as a significant agenda of HEI. It is evident from the extant literature that students have positive perceptions about service quality in tertiary educational institutions. The agenda of service quality of HEI remains on the top of debate (Becket & Brookes, 2006).

Cheng and Tam (1997) defined the concept of service quality in education as “[...] education quality is a somewhat vague and controversial concept”. Service Quality with regards to tertiary education is reliant on customers, and other clients are known as the recipients of HEI. Since most essential stakeholders of HEI are students, the students` perception and opinion in connecting with various services offered to them during their entire academic life are considered as service quality. (Jancey & Burns, 2013)

Generic use of service quality in HEI is imperative because it fulfills the grey areas of improvement. The argument is supported by Saleem et al. (2017), Banahene (2017), Saliba and Zoran (2018), Gupta and Kaushik (2018), and Rinanto et al. (2019). Various studies have emerged in recent years conducted with the aim of examining and evaluating the applicability and reliability of the SERVQUAL instrument in measuring the quality in higher education. The studies of Ibrahim, Wang and Hassan (2013), Yeo and Li (2014), Adam (2016), Eberle, Milan and Dorion (2016), Mwiya et al. (2017), Annamdevula (2017), Wagner et al. (2018), Hossain (2018), Lodesso et al. (2018), Lakal, Joshi and Jain (2018), Mattah, Kwarteng and Mensah (2018), Moyo and Ngwenya (2018), Mohammadi and Etebariasl (2019), Karwati et al. (2019), Gilavand and Maraghi (2019), Osman & Saputra (2019), Simic, Stimac, & Barilovic (2019), and Mashenene (2019) envisaged that SERVQUAL model is a key tool of measurement used in the higher education sector.

The above statement clearly reflects the SERVQUAL scale which is a widely used model in the Higher education sector. Thus, the above arguments claim that SERVQUAL scale is a reliable and valid instrument.

H₁: SERVQUAL 3-Dimensional approach individually and collectively comprises a reliable and valid instrument used in HEI.

Service Quality (SQ) and Academic Performance (AP)

Various studies are conducted in the education sector, which covers the performance-related activities of teachers (Ter and Scapens, 2012).

There are two key streams of research which classify the Service quality. SQ dimensions, measurement, antecedents, and outcomes of SQ are discussed in the first stream, whereas the studies related to Academic Performance with respect to SQ are covered in the second stream. The first stream which focuses the dimensions and scale development of SQ as discussed by the studies of (e.g., Agarwal & Kumar, 2016; Sunder & Sunder, 2016; Sultan & Wong, 2013; Wong, Tunku, & Rahman, 2012; Dado, Taborecka-Petrovičova, Riznić, & Rajić, 2011). The second stream centres the impact of SQ on academic performance in HEI, where Autonomy and self-regulation of students are exemplified as critical ingredients to student-learning in vast literature (Klemencic, 2017). Consequently, excellent achievement in AP reflects that students' satisfaction, which is a vital metric for HEI. Because the concept of satisfaction is deemed fit in measuring the service quality of teaching and learning standards of institutes. (Grace, Weaven, Bodey, Ross, & Weaven, 2012; Henman & Phan, 2014; Marsh, Morin, Ginns, Nagengast, & Martin, 2011).

The study of Zwain, Lim, and Othman (2017) aimed at developing the associations between Service Quality and key Performance indicators for Academics used in HE paradigm. The research work is reflected by Taylor and Baines (2012), followed by Clerici, Giraldo and Meggiolaro (2015), Luneva (2015), Honicke and Broadbent (2016), Kairuz, Andriés, Nickloes and Truter (2016), Tewari, Kushwaha and Bansal (2018).

Based on the early SERVQUAL work of Parasuraman et al. (1985), the quality indicators in the service sector are further developed by many authors. The theoretical framework is identified from the determinants of SERVQUAL model, thus the dimensions of service quality are therefore extracted.

Conclusion-

From the above critical review and antecedents of service quality dimensions, it is concluded that the association between Service Quality and students' Academic Performance were found quite relevant and hence positive. The author concluded that service quality in an educational environment with respect to Parasuramans' SERVQUAL model influence the pathways of student-learning which spells their academic performance.

H₂: SERVQUAL 3-Dimensional QM practices increase the Academic Performance of students.

H₃: SERVQUAL 3-Dimensional QM practices show positive impact on academic performance.

RESEARCH METHODOLOGY

The methodology of the study is descriptive and analytical in nature. Since “three dimensions of QMPs concerning academic performance” may better be explained after a field survey. The current study needed empirical research design to accomplish its objectives. Hence, following procedures were adopted.

Research Design

In order to obtain data for the determination of service quality attributes and perceived performance in academics of higher education, the current study used a descriptive-analytical method and self-administered (structured) questionnaire as adopted from Quality assurance manual for higher education in Pakistan (2007) and SERVQUAL scale of Parasuraman et al. (1985, 1988, 1991). Quantitative method is further employed in order to get some reviews from faculty members, admin/managerial staff, and students of selected HEI (Gilavand, 2019).

Variables

The current study is focused on dimensions of Quality Management practices used by faculty members and its impact on academic performance.

a. Independent variables- Reliability, Tangibility, and Responsiveness.

b. Dependent variable- Academic Performance.

Population

Population consists of all the public and private sector universities across Pakistan.

Target Population- It consists of 400 respondents from five public and three private sector universities (See table 1.2) located in Peshawar and Mardan district. (Gul, Jan, & Shah, 2019 and Adam, 2016)

Source Population- Faculty members, administration/ management staff, and students have been selected to participate in the study as a source population.

Table 1.2 List of Selected Higher Education Institutes

<i>No.</i>	<i>Title</i>	<i>Sector</i>
1.	University of Peshawar	

2.	UET, Peshawar	
3.	IBMS, Agriculture University, Peshawar	Public
4.	Abdul Wali Khan University, Mardan	
5.	Islamia College University, Peshawar	
<hr/>		
6.	Abasyn University, Peshawar	
7.	Sarhad University, Peshawar	Private
8.	IQRA National University, Peshawar	

Sample Design

For better accessibility, the researcher has adopted the convenience sampling technique.

a. Strata- Study contains three strata i.e., faculty members, admin/management, and the students.

b. Sample Size- The size ratio decided was 62% for public and 38% for private universities of KP respectively, i.e., Public (n=5) and Private (n=3) (Dixon, 2002). Fifty respondents each for eight universities (15 faculty members, 05 administrative/managerial staff and 30 students) total n=400 were considered. (Gul, Jan, and Shah, 2019; and Adam, 2016)

b. Sample Justification- Since the number of sample size is >30 and <500, therefore z-test is applied. (Roscoe, 1975 and Adam, 2016)

c. Sampling Frame- Total surveyed respondents are; employees (n=160) and students (n=240).

Questionnaire Design

Questionnaires were distributed among 400 respondents comprising faculty members n=120; admin n=40; and students n=240; (Ali et al, 2016). Valid questionnaires of 76% (n=304) were found useful for the analysis while 24% were found invalid having no-response rate which can be kept under 30% in most situations (Leslie and Berenson, 1975; Arnold, 1975; Christopher, 1961; and Ali et al, 2016).

a. Measurement- 15-items (5 each for tangibility, responsiveness, and reliability) were used that cover all the academic and non-academic services experienced by the students. (Gul, Jan, and Shah, 2019 and Annamdevula, 2016)

- b. *Scale*- Five-point Likert rating was used for questionnaire design, representing 1 for “strongly disagree” and 5 for “strongly agree.” (Likert, 1932; Annamdevula, 2016 and Zwain et al. 2017)
- c. *Mechanism*- 70% of questionnaires was distributed by hand, and the rest via email and online google survey.
- d. *Data Collection*- Primary and secondary sources were used. Primary data were collected from faculty members, students, and admin/management staff by using a structured questionnaire. While secondary data were collected from relevant research articles on google scholar.

Study Tool and Data Analysis

The tool for measuring service quality model that has been extensively applied is the SERVQUAL model. (Parasuraman, 1985 & 1988; Gronroos, 1982; and Gabbie & O'Neill, 1996)

The collected data were inferentially tested on the statistical ground e.g., Chi-square (Evangelos, 2017), Pearson Correlation (Francois, Fernando & Jay, 2007 and Zwain et al. 2017), and ANOVA by using SPSS (17) for data processing.

a. *Reliability Assessment*- The Cronbach alpha of the study was tested having values ranged from (0.833 to 0.852) for all the three dimensions (Hair et al., 2008). All values are above the threshold value (0.70), which shows that scales are consistent and reliable (Nunally, 1978; Byrne, 2010 and Hair et al., 2008).

Conceptual Framework

Review of critical literature and qualitative data analysis of Parasuraman et al. (1985, 1988, 1991 1992, and 1994) has provided a baseline of conception, structure, and objectives of the conceptual research model. The framework of the study consists of three dimensions of SERVQUAL model for HEI were developed. The execution of the model is categorized into two stages: a) Input, and b) output. The modified SERVQUAL scale was well discussed with the subject experts and was refined in the light of valuable suggestions.

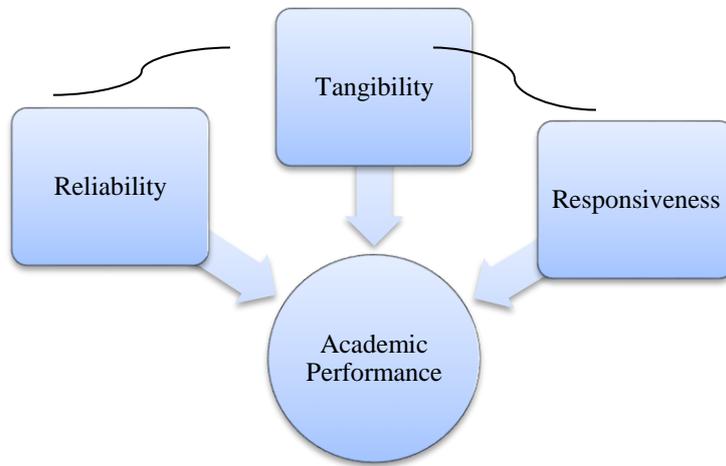


Figure 1: 3-Dimensional SERQVUAL Model

DATA ANALYSIS AND INTERPRETATION

Data analysis and interpretation are presented herewith.

Findings based on Descriptive Statistics

The first critical objective of the study was (i) to investigate that faculty members adopt 3- dimensional QM practices. Items and responses of (faculty members, administration/ management, and students) of target universities in terms of percentage reflect the first objective of the study as presented in tables below.

Legend- Total respondents: 304, (Faculty members: 80, Admin/ Management: 24, Students: 200), denoted by (F.M=faculty member, A.M=admin/management, and S=Student).

Table 2 Reliability Practices

No.	Question Statement	Resp Cat.	1	2	3	4	5
1.	The Students are fair/ do not cheat during examination.	F.M	3	15	10	40	28
		A.M	7	1	9	30	53
		S	4	26	15	10	45

2.	Textbooks and notes provided to the students are reliable and can be searched online having any cross reference.	F.M	1	4	2	83	10
		A.M	2	2	2	62	32
		S	4	15	4	51	26
3.	Whether the current exam evaluation criteria are reliable?	F.M	0	14	20	42	23
		A.M	4	7	10	31	48
		S	10	20	14	53	03
4.	Your colleagues/team members are reliable enough for responsibility sharing.	F.M	1	9	17	45	29
		A.M	2	2	9	29	57
		S	0	10	18	66	5
5.	The course outlines are accurate and relevant to the subject itself.	F.M	03	22	2	23	50
		A.M	2	9	6	32	51
		S	4	1	3	34	59

Source: Data collection

Interpretation- In response to above statements ranging from (1-5), the percentage score for faculty members are (68%, 93%, 65%, 74% and 73%), admin/managerial staff having score of (83%, 95%, 79%, 86% and 83%) while percentage score for students are (55%, 77%, 56%, 71 and 93%) respectively.

Table 3 Tangibility Practices

No.	Question Statement	Resp Cat.	1	2	3	4	5
6	The infrastructure of the class room/department is good.	F.M	5	13	05	49	32
		A.M	5	4	10	28	53
		S	9	21	7	25	38
7	Chairs and tables in Classroom were satisfactory arranged.	F.M	0	18	10	28	40
		A.M	0	1	9	60	30
		S	0	15	30	43	12

8	Students are seated in sequence and listen accordingly.	F.M	1	4	2	35	58
		A.M	2	2	2	59	35
		S	4	15	4	51	26
9	Computer labs are equipped with up to date setup.	F.M	0	14	20	42	23
		A.M	4	7	10	31	48
		S	10	20	14	53	03
10	Instructor directs students to sit random in class for better response	F.M	4	14	04	48	34
		A.M	5	7	07	25	56
		S	5	25	10	25	35

Source: Data collection

Interpretation- In response to above statements ranging from (6-10), the percentage score for faculty members are (81%, 68%, 93%, 65% and 82%), Admin/Managerial staff having score of (81%, 90%, 94%, 79% and 81%) while the percentage score for students are (63%, 55%, 77%, 56% and 60%) respectively.

Table 4 Responsiveness Practices

No.	Question Statement	Resp Cat.	1	2	3	4	5
11	The course was well structured to achieve the learning outcomes.	F.M	03	22	2	20	53
		A.M	2	9	6	37	46
		S	4	4	3	29	61
12	Students were responsive to instructors` need and want.	F.M	1	9	17	45	29
		A.M	2	2	9	29	57
		S	0	10	18	66	5
13	Instructor used to get a timely feedback from their student	F.M	0	14	20	42	23
		A.M	4	7	10	31	48
		S	10	20	14	53	03
14	Instructor sometimes uses gesture or smile in response to student query.	F.M	1	18	2	70	9
		A.M	2	2	2	62	32
		S	4	15	4	51	26
15	Ice breaker is often applied during lecture	F.M	0	18	10	40	28
		A.M	0	1	9	30	60
		S	0	30	15	10	45

Source: Data collection

Interpretation- In response to above five statements ranging from (11-15), the percentage score for faculty members are (73%, 74%, 65%, 79% and 68%), Admin/Managerial staff having score of (83%, 86%, 79%, 95% and 90%) while the percentage score for students are (90%, 71%, 56%, 77% and 55%) respectively.

Finding based on Inferential Statistics

Various statistical tests are used to achieve the study objectives and validate the study hypotheses.

Pearson-Correlation Analysis

Correlation analysis was carried out to uncover the 2nd, 3rd objective of the study and validate the hypotheses 1, 2, and 3 of the study.

a. Validating Hypothesis H1 against the 3rd objective:

“SERVQUAL 3-Dimensional approach individually and collectively comprises a reliable and valid instrument used in HEI.” The following table shows the interrelationship between 3 dimensions of QM practices based on perception of faculty members, administration/ management, and the students.

Table 5 Correlation Analysis of three independent variables (3-Dimensions)

		Reliability	Responsiveness	Tangibility
Reliability	Pearson Correlation	1	.975**	.944**
	Sig. (2-tailed)		.000	.000
	N	304	304	304
Responsiveness	Pearson Correlation	.975**	1	.955**
	Sig. (2-tailed)	.000		.000
	N	304	304	304
Tangibility	Pearson Correlation	.944**	.955**	1
	Sig. (2-tailed)	.000	.000	
	N	304	304	304

Note: Correlation Strength: $r \geq 0.70$ = Highest; $0.50 < r < 0.69$ = High; $0.30 < r < 0.49$ = Medium;

$r 0.01 \leq 0.29$ = Low

**. Correlation is significant at the 0.05 level (2-tailed).*

***.. Correlation is significant at the 0.01 level (2-tailed).*

Upper figure in the Cell = Pearson Correlation Coefficient (r)

Lower figure in the Cell = P-value

Based on the above results, three variables show very high and positive correlations with each other having high significance value of $P = .000$ and $p = .01$. The highest correlation was found between Reliability and Responsiveness ($r=0.975$, $P = .000$); Reliability and Tangibility ($r=0.944$, $P = .000$); Tangibility and Reliability ($r=0.944$, $P = .000$); Tangibility and Responsiveness ($r=0.955$, $P = .000$) respectively.

b. Validating Hypothesis H2 against the 2nd objective:

“SERVQUAL 3-Dimensional QM practices increase the Academic Performance of students.” and

c. Validating Hypothesis H3 against the 2nd objective:

“SERVQUAL 3-Dimensional QM practices show positive impact on academic performance.”

Based on the results in the following table, all three variables (3-dimensions) have very high and positive correlations with Academic Performance, yielding to high significance value of $P = .000$ and $p = .01$. The highest correlation was found between Reliability and Academic Performance ($r=0.850$, $P = .000$); Responsiveness and Academic Performance ($r=0.838$, $P = .000$); and Tangibility and Academic Performance ($r=0.837$, $P = .000$) respectively.

Table 6 Correlation Analysis of (3-Dimensions) with (Academic Performance)

		Academic Performance	Reliability	Responsiveness	Tangibility
Academic Performance	Pearson Correlation	1	.850**	.838**	.837**
	Sig. (2-tailed)		.000	.000	.000
	N	304	304	304	304
Reliability	Pearson Correlation	.850**	1	.916**	.814**
	Sig. (2-tailed)	.000		.000	.000
	N	304	304	304	304
Responsiveness	Pearson Correlation	.838**	.916**	1	.862**
	Sig. (2-tailed)	.000	.000		.000
	N	304	304	304	304
	Pearson Correlation	.837**	.814**	.862**	1

Tangibility	Sig. (2-tailed)	.000	.000	.000	
	N	304	304	304	304

Note: **. Correlation is significant at the 0.01 level (2-tailed).

Chi-Square Test

The following chi-square tests were conducted to validate the hypothesis 1, 2, 3, and 4 of the study.

a. Validating Hypothesis H1 against the 3rd objective: “SERVQUAL 3-Dimensional approach individually and collectively comprises a reliable and valid instrument used in HEI.” and

b. Validating Hypothesis H3 against the 2nd objective “SERVQUAL 3-Dimensional QM practices show positive impact on academic performance.”

The following tables which represent the Practices of Faculty Members validate the hypotheses H1 and H2 respectively.

Table 7.1 Reliability

		Academic Performance			Total
		Agree	Neither	Disagree	
Reliability	Strongly Agree	1	0	0	1
	Agree	30	4	0	34
	Neither	0	28	4	32
	Disagree	0	0	13	13
Total		31	32	17	80

Table 7.2 Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	116.848 ^b	6	.000
Likelihood Ratio	121.337	6	.000
Linear-by-Linear Association	65.602	1	.000
N of Valid Cases	80		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .21.

Table 7.3 Responsiveness

		Academic Performance			Total
		Agree	Neither	Disagree	

Responsiveness	Agree	31	4	0	35
	Neither	0	28	8	36
	Disagree	0	0	9	9
Total		31	32	17	80

Table 7.4 Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	97.163 ^b	4	.000
Likelihood Ratio	107.065	4	.000
Linear-by-Linear Association	61.310	1	.000
N of Valid Cases		80	

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is 1.91.

Table 7.5 Tangibility

		Academic Performance			Total
		Agree	Neither	Disagree	
Tangibility	Agree	30	4	0	34
	Neither	1	28	12	41
	Disagree	0	0	5	5
Total		31	32	17	80

Table 7.6 Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	77.413 ^b	4	.000
Likelihood Ratio	87.179	4	.000
Linear-by-Linear Association	54.520	1	.000
N of Valid Cases		80	

b. 3 cells (33.3%) have expected count less than 5. The minimum expected count is 1.06.

The above tables show significant association between Academic Performance and faculty members' 3-Dimensional QMP's because P-value = 0.000 is less than the level of significance $\alpha = 0.05$.

Therefore, it is concluded that 3-Dimensional QMP's have positive impact on Academic Performance.

c. Validating Hypothesis H2 against the 2nd objective: “SERVQUAL 3-Dimensional QM practices increase the Academic Performance of students.”

The following tables (8.1 till 8.6) represent the Student’s Perception regarding 3-Dimensional QMP`s which shows significant association between Academic Performance and 3-Dimensions of QMP`s. It also reflects that Academic Performance is increased by 3-Dimensions of QMP`s because P-value=0.000 is less than the level of significance $\alpha=0.05$. Hence, it is concluded that 3-Dimensional QMP`s have positive impact on academic performance in universities.

Table 8.1 Reliability Practices for Students

		Academic Performance			Total
		Agree	Neither	Disagree	
Reliability	Strongly Agree	1	0	0	1
	Agree	110	23	0	133
	Neither	0	89	41	130
	Disagree	0	1	39	40
Total		111	113	80	304

1.

Table 8.2 Chi-Square Test

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	316.222 ^a	6	.000
Likelihood Ratio	367.007	6	.000
Linear-by-Linear Association	218.665	1	.000
N of Valid Cases	304		

Note: a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is .26.

Table 8.3 Responsiveness Practices for Student

		Academic Performance			Total
		Agree	Neither	Disagree	
Responsiveness	Agree	111	22	0	133
	Neither	0	90	49	139
	Disagree	0	1	31	32
Total		111	113	80	304

Table 8.4 Chi-Square Test

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	296.117a	4	.000
Likelihood Ratio	352.292	4	.000
Linear-by-Linear Association	212.859	1	.000
N of Valid Cases	304		

Note: 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.42.

Table 8.5 Tangibility Practices for Students

		Academic Performance			Total
		Agree	Neither	Disagree	
Tangibility	Agree	110	23	0	133
	Neither	1	89	46	136
	Disagree	0	1	34	35
Total		111	113	80	304

Table 8.6 Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	297.281 ^a	4	.000
Likelihood Ratio	344.317	4	.000
Linear-by-Linear Association	212.359	1	.000
N of Valid Cases	304		

Note: 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.21.

Analysis of Variance: ANOVA

ANOVA is used to validate the 4th hypothesis against 4th objective of the study.

Validating Hypothesis H4 against the 4th objective: “There is a significant positive relationship between 3 Dimensions of QMP”.

The table below shows that all the regression coefficients have significant effect on Academic Performance.

Table 9.1 ANOVA (Academic Performance)

Model	Sum of Squares	Df	Mean Square	F	Sig.
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1	Regression	155.369	12	12.947	116.037	.000 ^b
	Residual	32.470	291	.112		
	Total	187.839	303			

Note: a. Academic Performance,

b. Predictors: (Constant), Tangibility, Reliability, Responsiveness

Table 9.2 Significance Level of 3-Dimensions and Academic Performance

Model	Unstandardized		Standardized		95.0% Confidence		
	Coefficients		Coefficients		Interval for B		
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
(Constant)	.337	.109		3.081	.002	.122	.553
Reliability	.283	.084	.251	3.355	.001	.117	.449
Responsiveness	-.294	.121	-.246	-2.428	.016	-.531	-.056
Tangibility	.132	.083	.113	1.594	.112	-.031	.295

Note: a. Dependent Variable: Academic Performance

The above table shows the individual performance of three dimensions on Academic Performance.

Where, Reliability, Responsiveness and Tangibility are significant at 10% and 5% level of significance (third last sig. column are having P-values). Furthermore, 95% confidence interval is also given for each dimension.

Model Prediction- From the above table, the fitted model obtained is given as: Academic Performance = 0.337 + 0.283 Reliability - 0.294 Responsiveness + 0.132 Tangibility.

DISCUSSION

From the theoretical aspect, this study is very critical as HEI are considered as significant stakeholders in economic stability. The agenda of Quality Management in HEI is a new concept being deployed in recent years in the education sector. The dimensions of quality management as originated by Parasuraman et al. (1985, 1988) followed by SERVQUAL model is selected as a tool to evaluate the existing practices of faculty members in HEI.

The empirical section of practices regarding 3-dimensions (reliability, tangibility, and responsiveness) is discussed herewith.

Reliability Practices

Faculty member's practice of Reliability is having 74% of overall acceptance level (agree & strongly agree). Similarly, for the students, the overall satisfaction level is 70.2%. The results are matched with the research work of Barnes (2007), the study found that reliability dimension appeared to be the most relatively important factor. However, the results contradict with the study of Abdel (2016), stating that Reliability is the lowest quality dimension from the student viewpoint. Hence, based on the results shown in (table-2), it is believed that 'Reliability' practice is the first dimension used by faculty members, which shows positive impact and increases the Academic Performance of universities. Reliability is considered as the first most highly significant dimension of quality management practices among eight HEI's.

Tangibility Practices

Faculty member's practice of Tangibility is having 78% of overall acceptance level (agree & strongly agree). Similarly, for the student, the overall satisfaction level is 62%. The results are aligned with the work of Gul, Jan, and Shah (2019); Ilias, Rahman & Razak (2008); Kajenthiran & Karunanithy (2015); and Toni (2013) results` stating that tangibility is an essential point of attraction when quality counts. Hence, based on the results shown in (table-3), it is believed that 'tangibility' practice is the third dimension used by faculty members, which shows positive impact and increases the Academic Performance in universities. Tangibility is considered as second most highly significant dimension of quality management practices among eight HEI's.

Responsiveness Practices

Faculty member's practice of Responsiveness is having 71.8% of overall acceptance level (agree & strongly agree). Similarly, for the students, the overall satisfaction level is 62.2%. The results reflect the work of Sakthivel, Rajendran & Raju (2005), Mwiya et al. (2017), Mohammadi and Etebariasl (2019), and Sohail & Shaikh (2004) stating that Responsiveness is significantly positive dimension and appeared to be the most relatively important factor in Quality management. However, the result is contradicted with the studies of Kashif, Ramayah and Sarifuddin (2016) who negates the significance of the dimension. Hence, based on the results shown in (table-4), it is believed that 'Responsiveness practice is the second dimension used by faculty members, which shows positive impact and increase the Academic Performance in universities. Reliability is considered as the third most highly significant

dimension of quality management practices among eight HEI's.

CONCLUSION

In recent years, the HEI in Pakistan has begun to consider the concept of quality more viable. Enhancing the nature of establishment is towards their characterized dreams and objectives. Such HEI's have distinguished few rules, methodologies, and arrangements to enhance its quality in diverse issues; however, the idea of value work is not comparable with the global scenario. The literature section about the applicability of the SERVQUAL scale is not general for the entire service sector, though it is widely used and most recently in HEI. So, its application needs some precautions. Thus, the review of related literature, analysis of data, results, and discussion of the study explored every insight about SERVQUAL 3-dimensional QM practices as a model adopted by concerned faculty members in their respective universities.

Recommendations

Faculty member's practices regarding Reliability, Responsiveness, and Tangibility are satisfactory, and this flow should be maintained in the future course of action as well. The final objective of the study is therefore endorsed by the following meaningful recommendations.

- Research is needed to find out the barriers, which create hindrance in quality management. Likewise, the factors affecting quality management should also be found through another research.
- The theme of the study was to explore 3-Dimensional QMP for faculty members. More models should be discovered and implicated for every task in the universities, and validation of the suggested model may also be a research study.
- The current study was conducted at a tertiary level of one province. Further research studies may be conducted in other provinces as well.

Implications

The study provides empirical data for other researches with the same field and aspects in the

future. The present research work helps the leaders of the educational institutions in the application of three-dimensional QMP (Quality Management Practices) philosophy and techniques in universities providing higher education. It would also help in improving the quality of teaching and administration in particular, and educational institutions, in the overall spectrum.

REFERENCES

- Abdullah, F. (2005). HEDPERF versus SERVPERF: The quest for ideal measuring instrument of service quality in higher education sector. *Quality Assurance in education*, 13(4), 305-328.
- Adam, A. I. A. (2016). *Service Quality In Higher Education And Its Impact On Students Satisfaction* (Doctoral dissertation, Sudan University of Science and Technology).
- Agarwal, A., & Kumar, G. (2016). Identify The Need for Developing a New Service Quality Model in Today's Scenario: A Review of Service Quality Models. *Arabian Journal of Business and Management Review*, 4(2), 8-21.
- Ali, F., Zhou, Y., Hussain, K., Nair, P. K., & Ragavan, N. A. (2016). Does higher education service quality effect student satisfaction, image and loyalty? A study of international students in Malaysian public universities. *Quality Assurance in Education*, 24(1), 70-94.
- Annamdevula, S., & Bellamkonda, R. S. (2016). The effects of service quality on student loyalty: the mediating role of student satisfaction. *Journal of Modelling in Management*, 11(2), 446-462.
- Baker, P., Croucher, P., & Rushton, A. (2017). *The Handbook of Logistics and Distribution Management: Understanding the Supply Chain*. Kogan Page Publishers.
- Banahene, S. (2017). Analysis of SERVQUAL Application to Service Quality Measurement and Its Impact on Loyalty in Ghanaian Private Universities.
- Batarseh, F. A., & Latif, E. A. (2016). Assessing the quality of service using big data analytics: with application to healthcare. *Big Data Research*, 4, 13-24.
- Broadbent, J. (2016). Academic success is about self-efficacy rather than frequency of use of the learning management system. *Australasian Journal of Educational Technology*, 32(4).
- Carrillat, F. A., Jaramillo, F., & Mulki, J. P. (2007). The validity of the SERVQUAL and SERVPERF scales: A meta-analytic view of 17 years of research across five continents. *International Journal of Service Industry Management*, 18(5), 472-490.
- Chanaka Ushantha, R. A., & Samantha Kumara, P. A. P. (2016). A quest for service quality in higher education: Empirical evidence from Sri Lanka. *Services Marketing Quarterly*, 37(2), 98-108.
- Collier, J. E., Barnes, D. C., Abney, A. K., & Pelletier, M. J. (2018). Idiosyncratic service experiences: When customers desire the extraordinary in a service encounter. *Journal of Business Research*, 84, 150-161.
- Cronin Jr, J. J., & Taylor, S. A. (1992). Measuring service quality: a reexamination and extension. *Journal of marketing*, 56(3), 55-68.
- Dado, J., Taborecka-Petrovicova, J., Riznic, D., & Rajic, T. (2011). An empirical investigation into the construct of higher education service quality. *International Review of Management and Marketing*, 1(3), 30-42.

- Daniel, C. N., & Berinyuy, L. P. (2010). Using the SEVQUAL Model to Assess Service Quality and Customer Satisfaction: An Empirical Study of Grocery Stores in Umea. *Unpublished Master's Thesis*, Umea School of Business.
- Eberle, L., Milan, G. S., & Dorion, E. (2016). Service quality dimensions and customer satisfaction in a Brazilian university context. *Benchmarking: An International Journal*, 23(7), 1697-1716.
- Edwards, C. D. (1968). The meaning of quality. *Quality progress*, 1(10), 36-39.
- Feigenbaum, A. V. (1962). Some Next Steps for Quality Control. *Industrial Quality Control*, 19(3), 5-11.
- Gilavand, A., & Maraghi, E. (2019). Assessing the Quality of Educational Services of Iranian Universities of Medical Sciences Based on the SERVQUAL Evaluation Model: A Systematic Review and Meta-Analysis. *Iranian Journal of Medical Sciences*.
- Grace, D., Weaven, S., Bodey, K., Ross, M., & Weaven, K. (2012). Putting student evaluations into perspective: The course experience quality and satisfaction model (CEQS). *Studies in Educational Evaluation*, 38(2), 35-43.
- Gul, S., Jan, S., & Shah, F. A. (2019). The Impact of Service Quality on Students Satisfaction in higher Education Institutes of Khyber Pakhtunkhwa. *Review of Economics and Development Studies*, 5(1), 217-224.
- Gupta, P., & Kaushik, N. (2018). Dimensions of service quality in higher education—Critical review (students' perspective). *International Journal of Educational Management*, 32(4), 580-605.
- Henman, P., & Phan, N. H. L. (2014). CEQ and the performance regime in Australian higher education: A review of the policy context.
- Hwang, Y. S., & Choi, Y. K. (2019). Higher education service quality and student satisfaction, institutional image, and behavioral intention. *Social Behavior and Personality: an international journal*, 47(2), 1-12.
- Jancey, J., & Burns, S. (2013). Institutional factors and the postgraduate student experience. *Quality assurance in education*, 21(3), 311-322.
- Kairuz, T., Andriés, L., Nickloes, T., & Truter, I. (2016). Consequences of KPIs and performance management in higher education. *International Journal of Educational Management*, 30(6), 881-893.
- Karwati, S., Sukardi, S., & Syafruddin, S. (2019, April). The Study of Quality Service of Education in Public Vocational Schools in Using ServQual Model. In *3rd Asian Education Symposium (AES 2018)*. Atlantis Press.
- Khalid, S. M., Ali, K. A. M., & Makhbul, Z. K. M. (2019). Assessing the effect of higher education service quality on job satisfaction among lecturers in premier polytechnics using HEDPERF model. *LogForum*, 15(3), 425-436.
- Klemenčič, M., Žnidaršič, M., Vavpetič, A., & Martinc, M. (2017). Erasmus students' involvement in quality enhancement of Erasmus+ mobility through digital ethnography and ErasmusShouts. *Studies in Higher Education*, 42(5), 925-932.
- Lakal, N., Joshi, K., & Jain, K. (2018). Development of engineering education service quality model from faculty perspective. *Total Quality Management & Business Excellence*, 1-12.
- Latif, K. F., Latif, I., Farooq Sahibzada, U., & Ullah, M. (2019). In search of quality: measuring higher education service quality (HiEduQual). *Total Quality Management & Business Excellence*, 30(7-8), 768-791.

- Lodesso, S. L., van Niekerk, E. J., Jansen, C. A., & Müller, H. (2018). Student satisfaction regarding Service quality at Ethiopian Public Higher Education Institutions: A case study. *Journal of Student Affairs in Africa*, 6(2).
- Mashenene, R. G. (2019). Effect of Service Quality on Students' Satisfaction in Tanzania Higher Education.
- Meggiolaro, S., Giraldo, A., & Clerici, R. (2017). A multilevel competing risks model for analysis of university students' careers in Italy. *Studies in Higher Education*, 42(7), 1259-1274.
- Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991). Refinement and reassessment of the SERVQUAL scale. *Journal of retailing*, 67(4), 420.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of marketing*, 49(4), 41-50.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of retailing*, 64(1), 12.
- Ross, J. E. (2017). *Total quality management: Text, cases, and readings*. Routledge.
- Sultan, P., & Yin Wong, H. (2013). Antecedents and consequences of service quality in a higher education context: a qualitative research approach. *Quality assurance in education*, 21(1), 70-95.
- Tewari, A. K., Kushwaha, A. S., & Bansal, A. K. (2018, August). Approach to Identify KPAs and KPIs for Higher Education Institutions. In *2018 4th International Conference on Computing Sciences (ICCS)* (pp. 213-217). IEEE.
- Trivellas, P., & Santouridis, I. (2016). Job satisfaction as a mediator of the relationship between service quality and organisational commitment in higher education. An empirical study of faculty and administration staff. *Total Quality Management & Business Excellence*, 27(1-2), 169-183.
- Vijaya Sunder, M. (2016). Lean Six Sigma in higher education institutions. *International Journal of Quality and Service Sciences*, 8(2), 159-178.
- Wagner, A., Merino, E. A. D., Martinelli, M., Polacinski, É., da Silva Wegner, R., & Godoy, L. P. (2018). The quality of services in a higher education institution: an evaluation for the integration of AHP, SERVQUAL and QFD methods. *Disciplinarum Scientia/ Sociais Aplicadas*, 13(1), 109-130.
- Yeo, R. K., & Li, J. (2014). Beyond SERVQUAL: The competitive forces of higher education in Singapore. *Total Quality Management & Business Excellence*, 25(1-2), 95-123.
- Zwain, A. A. A., Lim, K. T., & Othman, S. N. (2017). TQM and academic performance in Iraqi HEIs: associations and mediating effect of KM. *The TQM Journal*, 29(2), 357-368.