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Service Quality the Road Ahead for Student's Satisfaction

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Abstract

The basic purpose of the current study was to investigate the relationship between service quality and student's satisfaction using HEdPERF model. The present study selected 384 respondents from 28 universities of Khyber Pakhunkhwa (Pakistan) using proportionate stratified random sampling method. The data was analysed with the help of SPSS and AMOS to measure service quality and student's satisfaction in higher education industry. The Factor Analysis and Parallel Analysis were also applied for purification of the data. The Structural Equation Modelling was used for the acceptance and rejection of hypotheses. The model fit indices GFI, CFI, RMSEA and SRMR were also applied. Findings of the study reveal that among five dimensions of service quality academic aspects ranked as the most important dimension of service quality.

Keywords: Service quality; Student's satisfaction; HEdPERF

Introduction

One common challenge faced by every education institution is how to service its student's better. Delivering excellent quality service is vibrant and important for the success and growth of the organization [1]. The higher education industry has not been exempted from either high competition and student's demand for excellent service quality [2,3]. Currently students have a wide range of universities services to pick from and better service quality indeed influences a university competitive advantage as well [1,4,5].

Service quality is considered an important factor for higher education institutions. However, most of the research studies were focused on the Malaysia [6,7], India [1,8], UAE [5,9] UK, [3,10], and Africa [2,11], and very few studies has been undertaken to measure service quality of universities in Pakistan. Therefore, it is very important for organizations to possess knowledge about the student's' behaviour and satisfaction in order to deliver better service quality to its student's.

Evaluation of Service Quality and Student's Satisfaction

Osman conducted a study to investigate the relationship between service quality and student's satisfaction. The finding of the study revealed that program quality has strong significant effect on student's' satisfaction. Sultan and Wong [12] found that reliability influence student's satisfaction more than other dimensions. On the other hand, the study of Twaissi and Al-Kilani concluded that dimension tangibility has strong influence on student's' satisfaction in higher education industry. According to Saravanan [1] factors that can increase the satisfaction level of customers are knowledgeable employees, friendly employees, helpful employees, better service quality and quick service. Mwiya et al., [13] recommended that quick and timely response of the employees can increase the level of customers' satisfaction. Jiewanto et al., found that employees' knowledge and courtesy can inspire trust and confidence of the student's which has a significant effect on level of satisfaction. Yusoff et al., [14] suggested that physical appearance and fee structure are the main determinants of student's satisfaction. The findings of Onditi & Wechuli [15] recommended that academic and non-academic aspects should be included for effective evaluation of service quality and student's satisfaction in higher education top agenda. The study further suggested that universities should be aware of the important dimensions of service quality which are determined by the feedback of the student's. SERVQUAL is the most widely used and acceptable model for measuring service quality although higher education industry specific model HEdPERF should be tested in various countries to validate it [15].

HEdPERF

The higher education performance model was developed by Abdullah in 2005 called HEdPERF model. Which is consists of six dimensions namely, non-academic aspect, academic, access, programme issue and understanding. The objective of HEdPERF model was to develop a scale that measures the service quality of higher education industry. The scale was composed of six dimensions with 41 items. The most important dimension of HEdPERF scale was access [16]. The study found that student's perceived access was the most influential variable to measure service quality, which is related to the approachability, ease of contact, and availability. Later-on the HEdPERF scale was modified into five dimensions with 38 items.

Non-academic aspects: This dimension related to the duties carried out by the non-academic staff which fulfils the needs and requirements of the study in the institutions [16].

Academic aspects: The dimension academic aspect refers to the duties and responsibilities of the academics [16]. The main duty of academic staff is transmitting of knowledge through research and producing of knowledge through research [4].

Access: Dimension access relate to the ease of contact, approachability and availability of items [16].

Programme issues: The dimension programme issue concentrating the importance of specialization offered by the higher education institutions [16].

Reputation: Reputation refers to the image of the institution perceived by the student's [16].

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Objectives of the Study

- To identify the association of academic aspects with student's satisfaction.
- To identify the association of non-academic aspects with student's satisfaction.
- To identify the association of access with student's satisfaction.
- To identify the association of reputation with student's satisfaction.
- To identify the association of programme issue with student's satisfaction.

Hypotheses

H1: Academic aspects has a significant association with student's satisfaction.

H2: Non-academic aspects has a significant association with student's satisfaction.

H3: Access has a significant association with student's satisfaction.

H4: Reputation has a significant association with student's satisfaction.

H5: Programme issue has a significant association with student's satisfaction.

Conceptual Framework

Figure 1 with details are mentioned.

Materials and Methods

The higher education sector of Pakistan was the population of the study. The public and private sector universities of Khyber Pakhtunkhwa (KP) were the target population of the study. According to Higher Education Commission of Pakistan 36 universities imparting education in KP out of which 28 universities were considered for data collection on the personal judgement. The present study takes into consideration only those universities which are established before 30th June 2010. There are 384 respondents were selected as a sample for the current study. The adequate sample size for the analysis of the data would have a ratio of 10 to 1. In first phase of the sample size only 28 universities were selected for data collection. In second phase of the sample sized proportional allocation technique was applied, where the size of the sample from universities were kept proportional to the sizes of the population. The third phase was consisting of systematic sampling technique with the aim to draw sample from departments and faculties. According to Hair et al., [17] specific item would be selected based on random sampling technique in systematic sampling technique. In present study the first item was selected randomly in the class and the remaining unit of sample were selected at fixed interval. The randomly selected unit was every 2nd student in the class. The adapted questionnaire of Abdullah [16] was used in the present study. The HEdPERF model was consists of five dimensions namely, academic, non-academic, access, programme and reputation aspects of service quality. The questionnaire was reliable and already tested by Abdullah [16] to measure higher education industry performance. Factor analysis is one of the important stages of data factorization. According to Tabachnick & Fidell [18] an adequate sample size should be at least 150 to 300 and correlation matrix should be greater than 0.3 for data analysis. Nunnally [19] recommended 10

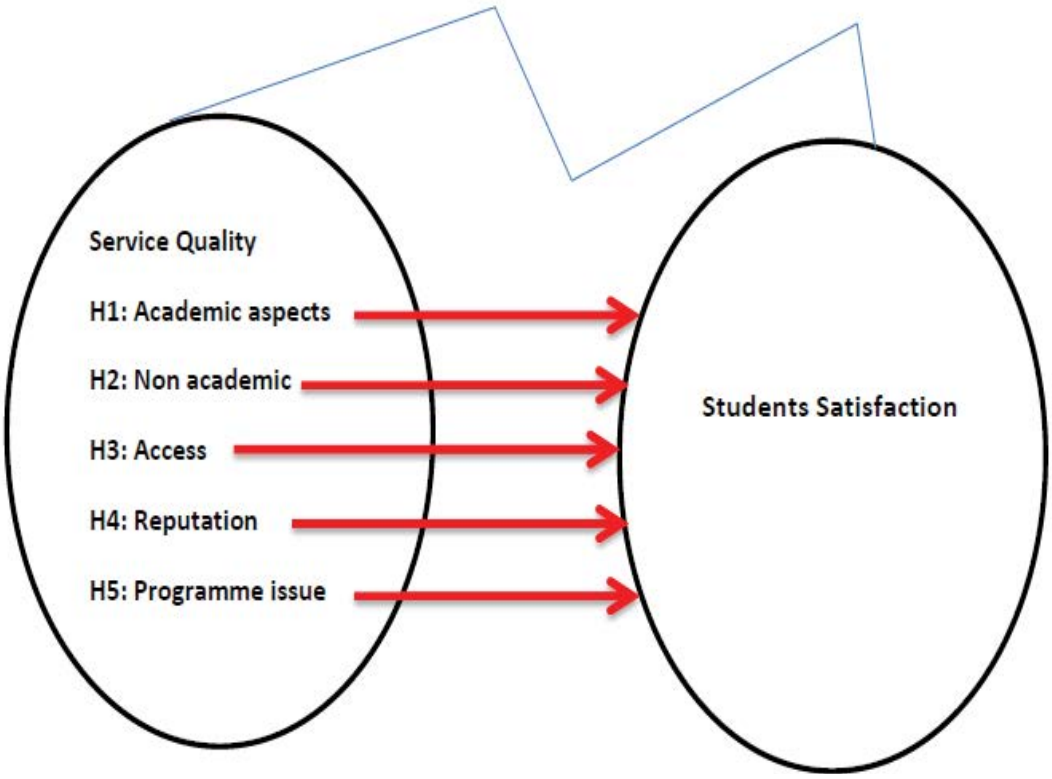

Figure 1: Conceptual framework.

cases for each item in data factorization. The value of Bartlett test of Spherecity should be significant at p<0.05 level and recommended value for KMO should be greater than 0.6. Principal component technique was used for the extraction of factors. The eigenvalue or Kaiser's criterion was applied for the factors to be retained for further investigation. Those items were retained for analysis which has value greater than 1. The Parallel Analysis technique was also used for further items reduction.

Data Analysis

Demographic profile of the respondents

The Table 1 shows the profile of the respondents. The male respondents were 71.4% and 28.6% in the current study. Many students were at the range of 21-25 years old. Similarly, the students of master classes were 45.1% in the present study. The higher studies students were only 4.4% and 11.2% in PhD and M.Phil.

Factor analysis

Factor analysis and reliability analysis of academic aspect: The dimension academic aspect is associated with the responsibilities of the academics. The items AD1, AD, AD5 and AD6 were retained for further investigation. These items were having the highest loading ranging from 0.775 to 0.851. The value of KMO was 0.81 which was higher than the suggested value and BTS was also significant at 0.05. The value of Cronbach alpha was 0.72.

Factor analysis and reliability analysis of non-academic aspect: The dimension non-academic aspect consists of those items which are directly related with non-academic staff of the organization to fulfil the requirements of the student's. The items NA2, NA4, NA7 and NA8 were retained for the analysis of the data. The remaining items were deleted. The eigenvalue criterion was applied for the items reduction. The present study retained those items with higher loading ranging from 0.576 to 0.783. The Cronbach's alpha value was 0.710 for the dimension non-academic aspect. The value of KMO was greater than the suggested value of 0.6 and BTS was significant at p<0.05 level.

Factor analysis and reliability analysis of access: The dimension access refers to the ease of contact, approachability, availability and convenience of academic and non-academic staff. The results of factor analysis revealed that only highest loading factors were retained for further analysis. The highest loading items were AC1, AC3, AC4, and AC6 ranging from 0.558 to 0.714. The KMO was 0.85 and BTS was significant. The Cronbach Alpha value was 0.752 greater than the suggested value and Kaiser's rule of thumb was also applied for retained items.

Factor analysis and reliability analysis of reputation: The reputation refers to the importance of higher education institutions that build an image and goodwill in the mind of customers. The Cronbach Alpha value was 0.764 and Kaiser's eigenvalue rule was applied for the data analysis. The retained items were RU1, RU2, RU5, and RU6 in dimension reputation with loading 0.706 to 0.820. The value of KMO was greater than the recommended value and BTS was also significant.

Factor analysis and reliability analysis of programme issues: The dimension programme issues deal with the up-to-date academic's programme and specialization offers by the organization with flexible structure and course outlines to the student's. The items retained after the factor analysis were PR2, PR4, PR5 and PR6 for further investigation (Table 2). The eigenvalue criterion was applied for the retention of the items (Table 3). The value of Cronbach Alpha was also higher than the recommended value. The KMO value was 0.82 which is higher than the suggested value and BTS was significant at 0.05 levels.

	Demography	Frequency	Percent
Gender	Male	274	71.4
	Female	110	28.6
	Total	384	100
	Demography	**Frequency**	**Percent**
Age	18-20	106	27.6
	21-25	202	52.6
	26-30	57	14.8
	31-35	17	4.4
	36+	2	0.5
	Demography	**Frequency**	**Percent**
Education	Bachelor	151	39.3
	Master	173	45.1
	M.Phil./MS	43	11.2
	PhD	17	4.4
	Demography	**Frequency**	**Percent**
Duration	<1	123	32
	1-2 Years	143	37.2
	2-3 Years	90	23.4
	3-4 Years	28	7.3

Table 1: Demographic profile.

S. No.	Items	Dimension	KMO	BTS	Cronbach's alpha
1	AD1, AD3, AD5, AD6	Academic	0.81	0.000	0.720
2	NA2, NA4, NA7, NA8	Non-academic	0.71	0.000	0.710
3	AC1, AC3, AC4, AC6	Access	0.85	0.000	0.750
4	PR2, PR4, PR5, PR6	Programme	0.82	0.000	0.764
5	RU1, RU2, RU5, RU6	Reputation	0.75	0.000	0.670
6	U1, U3, U5, U6	Understanding	0.69	0.000	0.669

Table 2: Description of factor analysis.

S. No.	Random eigen value (PA)	Actual eigenvalue from PCA	Decision
1	1.0574	1.1810	Accepted
2	1.0352	1.1752	Accepted
3	1.0241	1.1209	Accepted
4	1.0135	1.1003	Accepted
5	1.0091	1.0187	Accepted
6	1.0087	0.0210	Rejected

Table 3: Parallel analysis.

Factor analysis and reliability analysis of understanding: This dimension emphasizes to understand the student's specific need in terms of counselling and health related services. The items retained with highest loading were U1, U3, U5 and U6. The Kaiser's rule of thumb was also applied to retain items for further investigation. The KMO was also higher than the recommended value.

The Table 4 rotated component matrix depicts the loading of items on the five components of HEdPERF model. The present study applied the Varimax rotation technique for the extraction and rotation. The

Table clearly reveals that only items with highest loading were selected for further investigation. The highest loading of AC1, AC3, AC4 and AC6 were selected for component 1. Similarly, the highest loading factors of AD1, AD3, AD5 and AD6 were also included for further analysis in the data. The key items with highest loading of RU1, RU2, RU5 and RU6 were included for further investigation. Similarly, all the items with highest loading factor were included in their respective components (Figure 2).

Result

The six dimensions of 41 items of the HEdPERF were subject to principal component analysis by using SPSS version 21. Before conducting PCA the FA was performed the factorization of data. Examination of the correlation matrix revealed the presence of coefficient 0.3 and above. The KMO value was also greater than the suggested value of 0.06 and BTS was also significant. The PCA revealed the existence of six dimensions with eigenvalue higher than 1. Therefore, it was decided to retain the dimension with 25 items for further evaluation. However, after conducting the Parallel analysis only five dimensions with 20 items were retained for further investigation. The value of dimension understanding was lower than randomly selected eigenvalue. Therefore, the dimension understanding was dropped from further evaluation.

Testing of hypotheses

A hypothesis testing is one of the most important stages of data analysis. The present study applied Structural Equation Modelling (SEM) technique for the testing of hypotheses. The most commonly used indices are goodness of fit (GFI), comparative fit indices (CFI), the root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR) etc. according to Hair et al., [17] and Kline [20] suggested value for GFI, CFI should be greater than 0.90 and RMSEA should be less than 0.06. Similarly, the value for SRMR should be less than 0.08 [21] (Table 5).

The Table 6 indicates that when academic aspect increases one unit, satisfaction of the student's goes up by 0.336 units. Similarly, when dimension reputation goes up by one unit, the level of student's

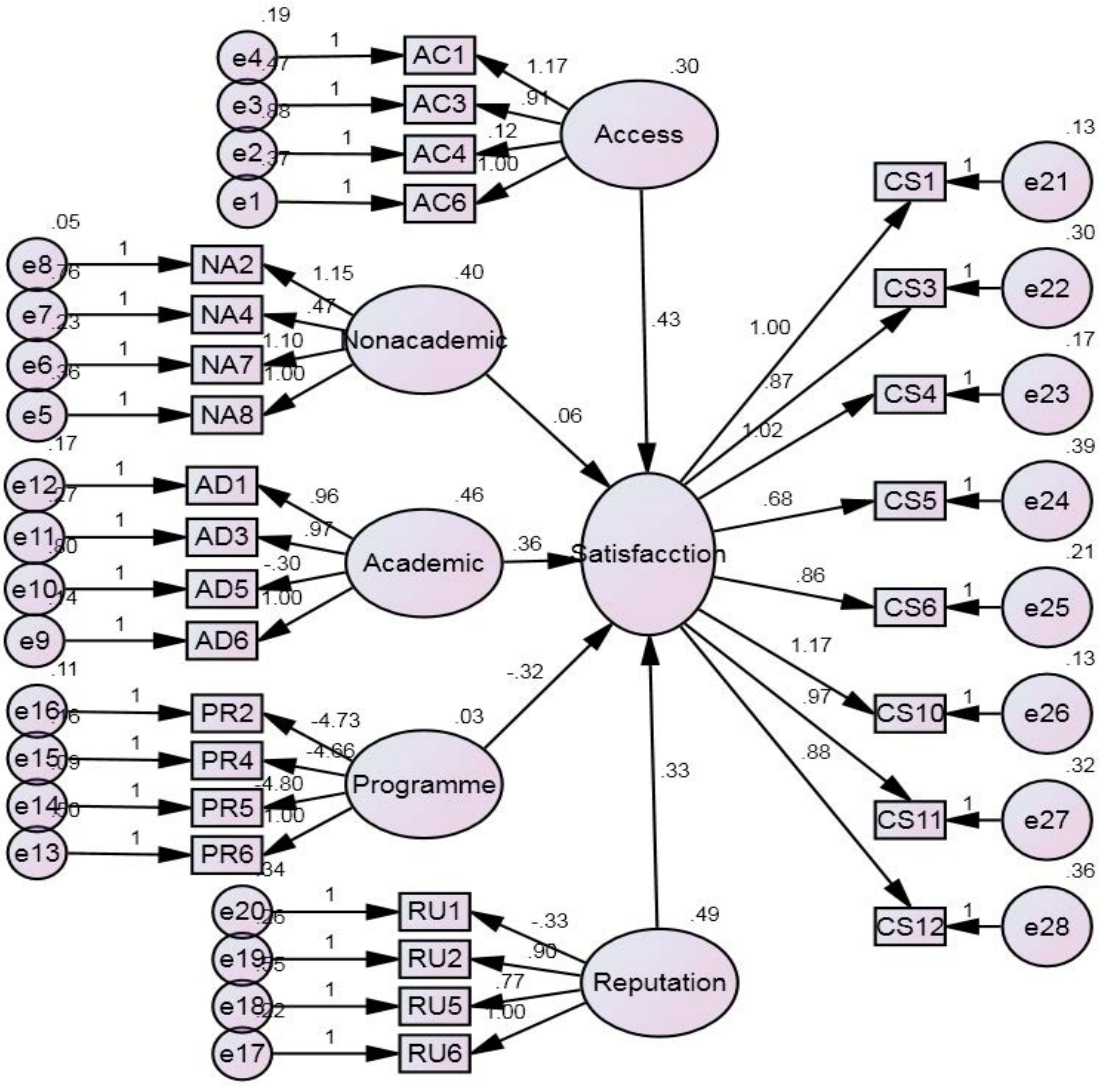

Figure 2: Loading factors of non-academic, academic, programme etc.

	Component				
Component	**1**	**2**	**3**	**4**	**5**
AC1	0.703	--	--	--	--
AC3	0.558	--	--	--	--
AC4	0.678	--	--	--	--
AC6	0.714	--	--	--	--
NA2	--	0.783	--	--	--
NA4	--	0.576	--	--	--
NA7	--	0.700	--	--	--
NA8	--	0.761	--	--	--
AD1	--	--	0.788	--	--
AD3	--	--	0.851	--	--
AD5	--	--	0.845	--	--
AD6	--	--	0.775	--	--
PR2	--	--	--	0.809	--
PR4	--	--	--	0.819	--
PR5	--	--	--	-0.386	--
PR6	--	--	--	0.674	--
RU1	--	--	--	--	0.706
RU2	--	--	--	--	0.722
RU5	--	--	--	--	0.724
RU5	--	--	--	--	0.820

Table 4: Rotated component matrix.

RMSEA	CFI	NFI	GFI	SRMR
0.04	0.91	0.9	0.89	0.098

Table 5: Values of RMSEA, CFI, etc.

satisfaction increases by 0.352 units, which shows a positive association between dimension reputation and satisfaction. The above Table further reveals that dimensions non-academic and access goes up by one unit, the satisfaction increases by 0.069 and 0.466 units respectively. The dimensions academic, reputation, non-academic and access are significant at 0.05 levels except the dimension programme. When the dimension programme increases by one unit, the satisfaction decreases by -.232 units, which is a threatening sign for the institutions. The dimension programme is insignificant at 0.068 levels.

Discussion and Conclusion

The Table highlights the statistically significant relationship between HEdPERF model dimensions and student's satisfaction. The

Satisfaction status		Estimate	S.E.	C.R.	P
Satisfaction	Academic	0.336	0.033	10.234	--
Satisfaction	Programme	-0.232	0.117	-1.978	0.068
Satisfaction	Reputation	0.352	0.036	9.717	--
Satisfaction	Non-academic	0.069	0.025	2.768	0.006
Satisfaction	Access	0.466	0.052	8.894	--

Table 6: Significant relationship between HEdPERF and student satisfaction.

dimensions academic aspect (estimate, 0.336), reputation (estimate, 0.352), non-academic (estimate, 0.069) and access (estimate, 0.466) are significantly associated with the satisfaction of the student's. On the other hand, the dimension programme has statistically insignificant relationship with student's' satisfaction, which estimate -0.232 units. Therefore, the hypotheses H1, H3, H4, and H5 are accepted and H2 is rejected (Table 7).

According to Kara [22] quality of teaching and teaching facilities were the most significant dimensions of customer satisfaction. Teaching faculties and supporting facilities were considered the most influential variables of student's' satisfaction [11]. One the other hand, Khalifa & Mahmoud [23] found that non-academic staff helpfulness and academic staff individualized attention were positively associated with student's satisfaction. In higher education industry student's considered teaching curriculum, staff competency, academic aspects and teaching methods were the most significant variables [8]. Various researchers considered the dimension academic aspects the most influential variable of student's' satisfaction [11,14,22]. According to Farahmandian et al., [24] academic aspects, teaching curriculum and teaching quality were significantly associated with student's' satisfaction. The study of Osman et al., revealed that programme quality was the most powerful dimension of student's' satisfaction in Bangladesh higher education industry. Garcl A-Aracil [25] found teaching quality, course outlines and teaching material were the most influential variables of student's' satisfaction in European countries. Similarly, Navarro [26] found academic staff and teaching techniques were highly significant association with satisfaction. The public and private sector higher education institutions are aware of the importance of the education. Similarly, competition in the higher education sector

Dependent	Independent	Hypotheses	Estimate	S.E.	C.R.	P	Decision
Satisfaction	Academic	H1	0.336	0.033	10.234	--	Accepted
Satisfaction	Programme	H2	-0.232	0.117	-1.978	0.068	Rejected
Satisfaction	Reputation	H3	0.352	0.036	9.717	--	Accepted
Satisfaction	Non-academic	H4	0.069	0.025	2.768	0.006	Accepted
Satisfaction	Access	H5	0.466	0.052	8.894	--	Accepted

Table 7: Hypotheses testing.

is also getting tighter with the increase of private higher education institutions. Every university is trying their best to win the competition therefore, it needs continuous service quality improvements including the academic aspects, reputation, non-academic, program and access. The current study found academic is the most important and influential dimension of service quality, that bring a big difference in the satisfaction level of the customers.

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