Service Quality of Malaysian Universities in View of Iranian Studying in Engineering Fields

Ahmadreza Shekarchizadeh, Mohsen Ashourian

Islamic Azad University- Majlesi Branch, Isfahan, Iran

Amran Rasli

Faculty of Management, University Technology Malaysia, Malaysia

Abstract.

The purpose of this paper is to assess the service quality perceptions and expectations of Iranian post-graduate engineering students studying in main public Malaysian universities. A Gap analysis, i.e., the difference between expected and perceived services, based on a modified SERVQUAL instrument was used to determine where and how gaps in educational service quality exist. A sample of 163 postgraduate engineering Iranian students was selected based on stratified sampling of the top five public universities in Malaysia. The analysis started with descriptive analysis. Subsequently, factor and reliability analyses were performed to determine statistical validity and reliability of the data collected. Finally, single mean t-tests were conducted to assess the significance of the gap analysis. Result shows that the most influential determinant in perceived service quality is Empathy.

Keywords: Iranian postgraduate engineering students, SERVQUAL, educational services.

Introduction:

Malaysia, as one of the most advanced developing countries in South East Asia, is affected with the challenges of globalization and internationalization. One of the most essential responses to these challenges from the government has been to allow local public higher education institutions to allocate seats in the academic programs for international students.

Furthermore, realizing the important contribution of education services to the national economy, the government is seeking to turn Malaysia into a regional and international hub and centre of excellence in education.

The number of international students in Malaysia is crucial for the national economy, particularly if considered as an export of higher education services. In other words, higher education in Malaysia is observed as a potential overseas revenue earner through offering programs of world class. On the other hand, Malaysia has planned to differentiate its export products and services (Prime Minister's Office, 2008). In this line, the country is actively seeking to develop the export potential of its education services. The targets identified are China, Indonesia, Vietnam and the Middle East. Also, the target of the Ministry of Higher Education in Malaysia is to absorb 95,000 international students by 2010 (Sirat, 2006). Since Malaysia has been successful in increasing access to higher education, the next emphasis is ensuring quality and standards of higher education.

There has been a high growth in the number of Iranian continuing their graduate studies in Malaysian Universities during the last decade. There are five public universities that ministry of higher education in Iran has accredited them for master and PhD studies. Table 1 shows the list and some academic specifications of these schools.

Table 1. Five public Malaysian universities and their specifications

	Total Number of Students	The year of establishment	Location in Malaysia	Percentage of Post Graduate Student	Total Number of Post Graduate International Students
UTM	38,842	1975	Southern tip	0.08	About 3000
UKM	26,698	1970	Centre	0.23	5,323
UM	28,070	1949	Centre	0.35	7,924
USM	26,690	1971	North	0.29	6,056
UPM	29,063	1973	Centre	0.35	8,942

As table 1 demonstrates, among these schools, University Putra Malaysia, with around 2500 students has attracted the maximum number of Iranian students. Around 50% of Iranian post graduate students are studying in engineering fields in these universities.

In the literature there are many evidences on the importance of service quality in education institutions (Angell et al., 2008; C. L. Ham, 2003; Harvey & Knight, 1996; Yeo, 2008). Measuring service quality in higher education is increasingly important for attracting and retaining tuition-based returns. Nevertheless, whilst service quality of undergraduates has been extensively measured, postgraduate-based research particularly on international students has been negligible (Angell et al., 2008). This void is surprising as there is high competition for postgraduate students which not only bring in more income but also improve a particular university's ranking. In this paper, our main objective is to analyze the education service quality of selected Malaysian Universities among Iranian post graduate students in engineering field based on a modified service quality (SERVQUAL) instrument. The students' perception and expectations of education services were gathered and a gap analysis was conducted to determine where and how gaps in education service quality exist and their effects. Collected data were coded, sorted and analyzed and then classified by gap category.

Literature Review:

There are many proofs in higher education literature suggesting that the SERVQUAL instrument is effective in measuring service quality in the higher education environment and is especially useful in offering guidance for changing shortcomings to strengths (Angell et al., 2008; Harris, 2002a; Wolverton, 1995; Yang, 2008).

Parasuraman et al. (1985) after their studies, proposed that service quality is a function of the differences between expectation and performance along the quality dimensions. They developed a service quality model (Figure 2) based on gap analysis. The various gaps visualized in the model are:

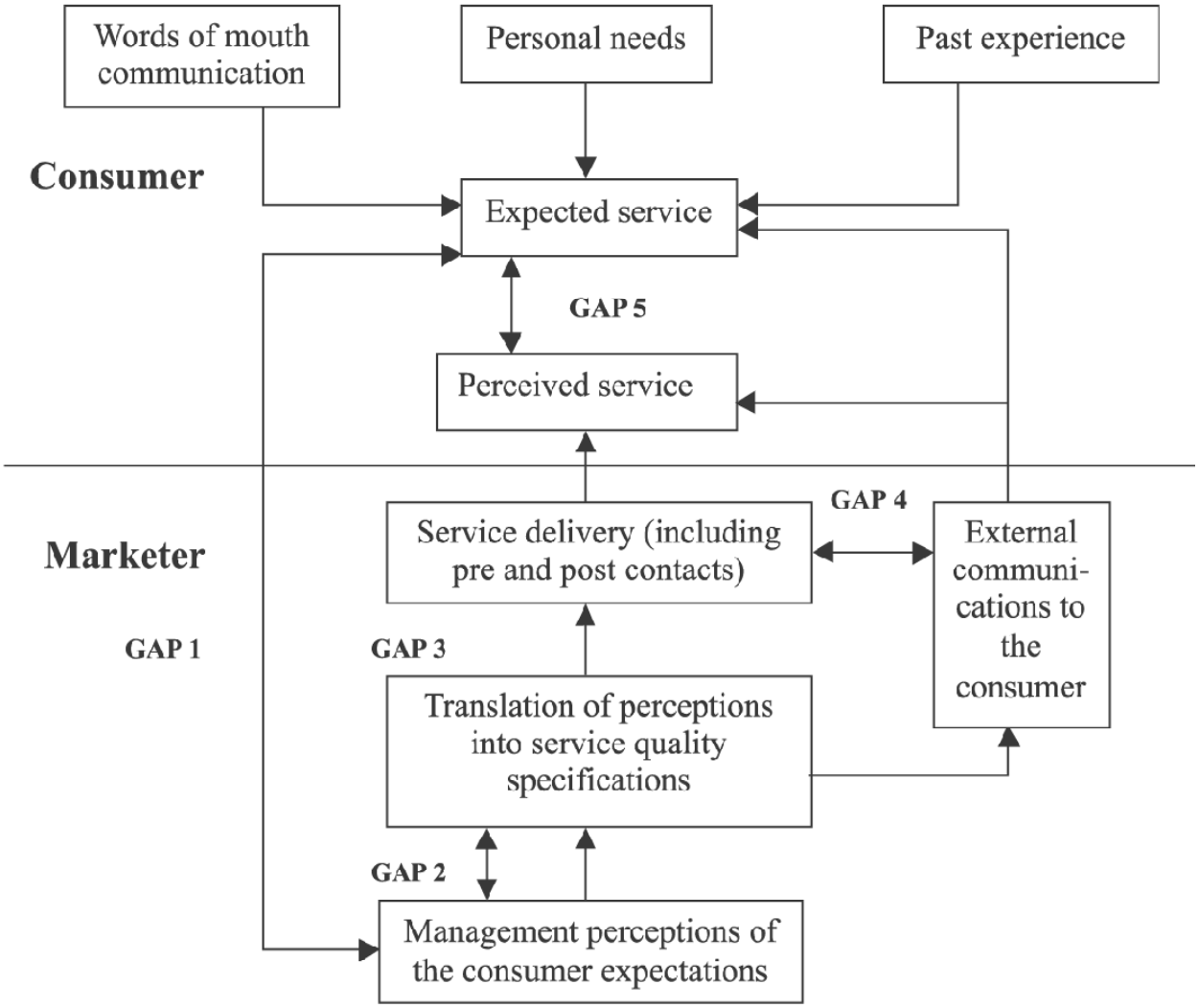
Gap 1: Difference between consumers' expectation and management's perceptions of those expectations, i.e. not knowing what consumers expect.

Gap 2: Difference between management's perceptions of consumer's expectations and service quality specifications, i.e. inappropriate service-quality standards.

Gap 3: Difference between service quality specifications and service in reality delivered, i.e. the service performance gap.

Gap 4: Difference between service delivery and the communications to consumers about service delivery.

Gap 5: Difference between consumer's expectation and perceived service. This gap depends on size and direction of the four gaps associated with the delivery of service quality on the marketer's side. Since then, the SERVQUAL instrument has been the predominant method used to measure consumers' perceptions of service quality.



Source: Parasuraman *et al*. (1985)

Figure 2. Service Quality gaps based on Parasuraman *et al*. (1985)

Though there are many proposed alternatives instruments such as Service Performance (SERVPERF), recent academic endeavor has focused on the merits of the first model (L. Ham & Hayduk, 2003; Markovic, 2006; Ruby, 1996; Yang, 2008). Jain & Gupta, (2004) found that SERVPERF's "performance" only construct, was incapable of diagnosing shortfalls in desired levels of service quality, as a result of the absent "disconfirmation" approach. Disconfirmation paradigm, which SERVQUAL is based on it, proposing that the gap between "expected" and "perceived" service quality, determines the customer's overall service examination.

In fact SERVQUAL has five generic dimensions or factors that are stated as follows (C. L. Ham et al., 2003). *Tangibles is* Physical evidence of the service, e.g. physical facilities, *Reliability is* Consistency of Performance and dependability, *Responsiveness is* Willingness or readiness to help customers and provide prompt service, *Assurance* includes competence, courtesy, credibility, communication and security. Also knowledge and courtesy of employees and their ability to inspire trust and confidence are in this dimension. Finally, *Empathy* includes access, understanding the customer, Caring and individualized attention that the firm provides to its customers.

According to (C. L. Ham et al., 2003; Parasuraman, Zeithaml, & Berry, 1997) information on service quality gaps can help managers diagnose where performance improvement can best be targeted. The largest negative gaps, combined with assessment of where expectations are highest, facilitates prioritization of performance improvement. Equally, if gap scores in some aspects of service do turn out to be positive, implying expectations are actually not just being met but exceeded, then this allows managers to review whether they may be "over-supplying" this particular feature of the service and whether there is potential for re-deployment of resources into features which are underperforming (Shahin, 2008).

Methodology

It has been suggested and demonstrated that in measuring service quality, the customers' expectations with perceived service quality levels should be evaluated (Parasuraman, Zeithaml and Berry 1985, 1988). To gain a better understanding of service quality in an educational situation, this study has examined Iranian students' expectations and perceptions of educational services using five Malaysian Universities. A sample of one hundred and sixty three Iranian engineering postgraduate students, stratified based on their gender and level of study, is randomly selected to participate in this study.

A modified SERVQUAL questionnaire was used as the survey instrument to collect data. The questionnaire items were modified, and developed based on the pilot study. The instrument had an introduction and three parts. The introduction provides the directions for completion of the questionnaire. The first part had a format of two separate sections (expectation and perception), with 35 items. Each of the items in the questionnaire was rated on a five-point Likert scale. The second part contains six questions regarding students' satisfaction. And the last part, contained demographic questions.

According to their perspectives of education service quality, participants were asked to assign a rating of 1 to 5 (1 meaning "strongly disagree", and 5 meaning "strongly agree").

Demographics and Characteristics of the samples

A total of 163 students participated in the survey. As shown in table 3, about third quarter of respondents were male and over 60% were master students. Also, a remarkable percentage of the student respondents (70%) had age below than 30 years.

Table 4. Demographic specifications of respondents

		N	% of Respondents
Gender	Male	125	76.6
	Female	38	21.4
Course Undertaken	Master	103	63.2
	Doctorate	59	36.2
	Post Doctorate	1	0.6
Age	20-25 years	43	26.3
	25.01-30 years	76	46.6
	30.01-35 years	21	12.8
	35.01-40 years	18	11
	40.01-45 years	5	3

Table 5 demonstrates cross table of respondents in sample based on Gender, past working, age and course undertaken. As reflected in this table, from the sample of 163, the major are master and male, distinctively 71. In addition, male students between 25-30 years have premier proportion. Furthermore, working in university, followed by working in private school, have allocated significant amount of respondents.

Table 5. Stratified Characteristics of the samples						
Characteristics						
	Course Undertaken					
	Master		Doctorate		Post Doctorate	
Gender Male	71		53		1	
Female	32		6		0	
	Age					
	20-25	25.01-30	30.01-35	35.01-40	40.01-45	More than 45
Gender Male	30	55	18	16	5	1
Female	13	20	3	2	0	0
	Past Working Experience					
	Working in University	Working in Government	Working as Self Employment	Working in Private School	Never Worked Before	
Gender Male	31	18	25	33	12	
Female	7	6	4	13	6	

Analysis of SERVQUAL data can take several forms: item-by-item analysis (e.g. P1 – E1, P2 – E2); dimension-by-dimension analysis (e.g. (P1 + P2 + P3+ P4/4) – (E1 + E2 + E3 + E4/4), where P1 to P4, and E1 to E4, represent the four perception and expectation statements relating to a single dimension); and computation of the single measure of service quality ((P1 + P2 + P3 …+ P22/35) – (E1 + E2 + E3 + … + E22/35)), the so-called SERVQUAL gap (Buttle, 1995). For the purpose of this study, the second form was selected. In the first stage, mean of perceptions and expectations was calculated for each item, then one sample t-test was conducted to analyze SERVQUAL gap item-by-item for 35 items ($p<0.05$). In the second stage, mean of expectations and perceptions was calculated for each dimension, and then one sample t-test was conducted to estimate the gap score for each dimension. The results have been shown in table 6.

Table 6. Mean Scores of Student Expectations, Perceptions and Gap Score (N=163)					
Dimension	Statement	Mean			P-value
		Expected Service	Perceived Service	Gap Score	
Tangible		3.86	3.25	-0.60	0.000
	Uses modern equipment and technology	3.99	3.35	-0.65	0.000
	Physical facilities visually appealing	3.80	3.28	-0.52	0.000
	Materials visually appealing	3.70	3.28	-0.42	0.000
	Support staff are well dressed	3.82	3.19	-0.63	0.000
	Members of faculty are well dressed	3.98	3.20	-0.78	0.000
Reliability		3.81	3.14	-0.67	0.000

	Promised to do something and did so	3.80	3.09	-0.72	0.000
	Showed honest interest solving your problem	3.79	3.01	-0.78	0.000
	Support staff provided services at time promised	3.89	3.01	-0.88	0.000
	Support staff performed service right first time	3.80	2.99	-0.81	0.000
	Support staff maintained error free records	3.62	3.16	-0.45	0.000
	Faculty provided services at time promised	3.91	3.43	-0.48	0.000
	Faculty performed service right first time	3.88	3.19	-0.70	0.000
	Faculty maintained error free records	3.72	3.19	-0.53	0.000
Responsiveness		3.80	3.13	-0.67	0.000
	Support staff told exactly when services were done	3.82	3.10	-0.72	0.000
	Support staff gave prompt service to you	3.73	2.83	-0.91	0.000
	Staff willing to help	3.58	3.10	-0.49	0.000
	Support staff respond to requests all the time	3.74	3.13	-0.60	0.000
	Faculty told exactly when services were done	3.88	3.21	-0.67	0.000
	Faculty gave prompt services to you	3.75	3.10	-0.67	0.000
	Faculty readily helped	3.89	3.38	-0.52	0.000
	Faculty responded to requests promptly	3.93	3.22	-0.71	0.000
Assurance		3.94	3.32	-0.61	0.000
	Felt safe in learning environment	4.06	3.76	-0.30	0.001
	Support staff behavior instilled confidence in you	3.85	3.25	-0.60	0.000
	Support staff consistently courteous to you	3.76	3.33	-0.43	0.000
	Support staff had knowledge to answer your questions	3.98	2.87	-1.11	0.000
	Faculty behavior instilled confidence in you	3.89	3.29	-0.60	0.000
	Faculty consistently were polite with you	4.00	3.61	-0.39	0.000
	Faculty had knowledge to answer your questions	4.03	3.17	-0.86	0.000
Empathy		3.77	3.09	-0.68	0.000
	Operating hours were convenient for you	3.87	3.36	-0.51	0.000
	Support staff gave you individual attention	3.66	3.06	-0.60	0.000
	Staff had your best interests in heart	3.70	2.99	-0.70	0.000
	Support staff understood your specific needs	3.70	2.78	-0.92	0.000
	Faculty gave you individual attention	3.82	3.26	-0.56	0.000
	Faculty had your best interests at heart	3.76	3.17	-0.58	0.000
	Faculty understood your specific needs	3.88	3.05	-0.83	0.000

Note: Items' gap scores can range between 4 and -4.

Positive scores indicate performance exceeds expectations.

Negative scores show that performance is less than expectations.

A score of 0 indicates that performance is equal to expectations.

Table 6 shows all of the items of perceptions were perceived significantly negative compared to students' expectation. The greatest discrimination in item "Support staff gave prompt service to you" with a score of -0.91 related gap between students' expectation and perception.

The null hypotheses for the study are as following:

$H0_1$: $\mu_{perTangibles} - \mu_{expTangibles} = 0$

$H0_2$: $\mu_{perReliabilty} - \mu_{expReliabilty} = 0$

$H0_3$: $\mu_{perResponsiveness} - \mu_{expResponsiveness} = 0$

$H0_{4:}$ $\mu_{perAssurance} - \mu_{expAssurance} = 0$

$H0_5$: $\mu_{perEmpathy} - \mu_{expEmpathy} = 0$

Table 7 presents the descriptive analyses for the difference of means for the five dimensions. All constructs (Tangibles, Reliability, Responsiveness, Assurance and Empathy) show negative mean differences ranging from -0.60 to -0.68, implying that there are gaps in all dimensions of service quality. However, the mean difference for Empathy is the biggest gap (-0.68); meaning the most of the problems about service quality are regarding this dimension.

To determine whether there are any significant differences for the means for five dimensions, inferential analyses were performed accordingly. A series of one sample t-tests were conducted to address the aforementioned hypotheses. The null hypothesis would be rejected for any tests with p-values < 0.05.

Based on table 8, all p-values are equal zero. This implies that all the null hypothesis can be rejected. The mean gap scores calculated by perception-minus-expectation indicated that all dimensions had negative gap scores, denotes that perceptions were perceived significantly negative compared to students' expectations.

Table 7. Descriptive Statistics

Dimensions	$\mu_{perception}$-$\mu_{expectation}$	N	Std. Deviation	Std. Error
Tangibles	D1=-0.60	159	0.88031	0.06981
Reliability	D2=-0.67	155	0.84996	0.06827
Responsiveness	D3=-0.67	153	0.83723	0.06769
Assurance	D4=-0.61	158	0.83812	0.06668
Empathy	D5=-0.68	158	0.85344	0.06790

Table 8. Results of Test for Difference of Means

Difference	Test Value=0					
	t	df	Sig.(2-tailed)	Mean Difference	%95 Confidence Interval of the Difference	
					Lower	Upper
D1	-8.576	158	0.000	-0.59874	-0.7366	-0.4609
D2	-9.757	154	0.000	-0.66613	-0.8010	-0.5313
D3	-9.886	152	0.000	-0.66912	-0.8028	-0.5354
D4	-9.113	157	0.000	-0.60760	-0.7393	-0.4760
D5	-9.948	157	0.000	-0.67540	-0.8096	-0.5413

Conclusion

There were a total of 35 items distributed in a five-dimensional SERVQUAL scale. These are the five determinants of education service quality, based upon the students' perceptions: Reliability, Tangibles, Assurance, Empathy, and Responsiveness. Reliability analysis indicates that the modified SERVQUAL scale is efficient as a measure of the perception of education service quality. This finding confirms to studies by (L. Ham & Hayduk, 2003; Harris, 2002b; Ruby, 1996; Yang, 2008).

In this study, it was found that the Iranian postgraduate engineering students had a negative perception of education service quality in Malaysian universities as students' expectations were not met in the performance of education services. Students were dissatisfied with the education service quality on all quality determinants (dimensions). Repercussion effect if this patterns were to continue are as following(Douglas, McCelland, & Davies, 2008; C. L. Ham, 2003):

1. It has a negative impact on Iranian engineering students' intent to repurchase the educational service.

2. It has a negative influence to recommend university to someone who seeks his/her advice.

3. It causes international students switch to another college/university, or in other words has negative impact on student retention.

4. The students do not spread positive words about the university.

The most influential determinant is Empathy (-0.68, $p<0.05$), in which attribute "Support staff understood your specific needs" had a gap score of -0.92 ($p<0.05$). The results suggest that adopting and designing a quality system should involve employees, and even the students, in Malaysian universities.

In conclusion, the education service quality of the surveyed Malaysian universities was perceived negatively by students on the consumer's side, due to gaps on the marketer's side within the universities, and the continues growth in the number of Iranian students studying in Malaysia is due to some other factors like ease of life, cost of living, which are more related to social and economical situation of the country.

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