Perceived Service Quality and Satisfaction in Distance Education

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ABSTRACT

This paper examines the relationship between perceptions of service quality and satisfaction in a distance learning institution. A structured questionnaire was self administered to 1197 respondents in a distance learning institution in Malaysia. The results of the study showed that the service quality dimensions like learner services, mode of learning, and physical aspects were related to satisfaction. The overall service quality factor was also related to satisfaction. The implications of the study are also discussed.

INTRODUCTION

The Malaysian economy experienced an economic boom in the mid-1990s. At the same time, the demand for higher education increased tremendously. In 2004, there were more than 17 public universities and 13 private universities in Malaysia and more than 500 private colleges offering a variety of courses ranging from certificate to degree level. Some of these institutions offered their own diplomas or degrees and others work in collaboration with local or foreign colleges and universities.

Two main factors have contributed to the growth of higher education in Malaysia, namely the economic slowdown as a result of the Asian crisis, and the democratization of education by the Malaysian government. The rapid development of tertiary institutions in the country was mainly dominated by the traditional mode of learning that is, the face-to-face in class interaction. However, with the advent of the Internet era, the demand for higher education increased and more flexible approaches to learning, namely the open and distance learning was seen as a practical mode in getting higher education today. Consequently, two institutions were established to provide such learning modes, Universiti Tun Abdul Razak (Unitar) and Open University Malaysia.

Open University Malaysia (OUM) was established in August 2000 as a substitute to the many distance learning programs provided by the public universities at that time. It is believed that public universities should focus on the traditional face-to-face mode of learning and a separate institution should be established to focus the development of education through the new technological modes of learning. Consequently, a consortium of 11 public universities in Malaysia agreed to establish METEOR Sdn Bhd, (a holding company owned by the public universities), and the Ministry of Education invited METEOR to form the Open University Malaysia. Since then, more than 16 types of diploma and degree programs have been launched with a total enrollment of more than 29,000 in January 2005 semester.

Although OUM had experienced high growth rates in the last 3 years of its inception, there is limited information on the reactions and responses of the learners on the service quality provided by OUM. However, one major study, using a Priority-Satisfaction survey, has been carried out in August 2003 to determine the priority that learners hold and their satisfaction level in each of the services provided by OUM (Latifah & Ramli, 2004). Though this study reveals learners satisfaction in the services provided, the approach is different from that of service quality. Some of the pertinent questions related to this area of work includes: (i) is there any relationship between satisfaction and service quality? and (ii) What are the key factors that affect service quality and satisfaction? The results of this study will provide useful insights on areas of the services that will require improvement so as to improve level of learners' satisfaction.

This study is particularly important as it has potential implications on the effects on service quality and consequently satisfaction of the learners in OUM. On a more general note, this study will also provide managerial and marketing implications to OUM and also to other educational providers in Malaysia.

LITERATURE REVIEW

Service Quality

Service quality has been seen to be an important factor in determining the success of the service organizations. Zeithaml et al. (1992) suggested that one of the prime issues of poor performance by service organizations is not knowing or sure of what their customer's expect. This is due to the fact that service organizations offer their products that are seen as more intangible. Consequently, this provides satisfaction or dissatisfaction to the recipient of the service, often viewed as service quality. One of the most well known methods for measuring service quality is SERVQUAL developed by Parasuraman et al. (1988). According to Parasuraman et al (1988), SERVQUAL consist of five dimensions namely tangibles, reliability, responsiveness, assurance and empathy. By tangibility, it refers to the physical facilities, equipment, and appearance of personnel. Reliability refers to the ability of the provider to perform the promised service dependably and accurately. This includes doing things as promised, error-free and immediate actions on customer complaints. Responsiveness refers to the willingness by the provider to help and provide prompt service. Assurance means that the provider will ensure that the employees are knowledgeable of the products offered, courteous, and able to instill confidence to customers on the product/ service offered. By empathy, it refers to the caring, individualized attention the organization provides to its customers, and understands the specific needs of the customers. Based on these dimensions, SERVQUAL has been tested by many in different contexts and situations. Carman (1990), for example, tested the SERVQUAL in service settings such as a patient in a dental school, business school placement centre, and acute hospital care. He suggested that the dimensions identified by Parasuraman et al. were not generic and suggested adding new dimensions or factors under different situations.

Service Quality and Satisfaction in Education

In the field of education, Soutar and McNeil (1996) used a revised version of SERVQUAL in evaluating service quality in an Australian university. They found that the students were quite satisfied with the quality of the academic units surveyed. However, there were gaps (between perception and expectation) in reliability, responsiveness, assurance, empathy, knowledge and communication for the academic units surveyed. For the non-academic service quality, the gap was larger, that is the more unfavorable assessment of the service quality delivered as compared to the expectations. They also believed that the generic dimensions of SERVQUAL are applicable in the university context and the modifications of the research instrument are appropriate. Their research also showed that male students were more satisfied overall compared to the female students.

Joseph and Joseph (1997) examined service quality in New Zealand, and found that there

were 7 factors determining service quality: program issues, academic reputation, physical aspects, career opportunities, location, time and other factors like family and word of mouth influences. When comparing between the perceptions of their own university and that of an ideal quality university, they found that New Zealand universities have not achieved a high-perceived level of service quality, which could give them a competitive advantage. On a five-point scale, the mean response to the question about their satisfaction with their university was 3.749. Their results also showed significant differences between male and female respondents on physical aspects, location and other (word of mouth) factors. The female students perceived those dimensions as more important than the male students. Using Joseph and Joseph (1997) instrument, Ford et al. (1999) found that American students rated greater importance to academic reputation, cost/ time issues, program issues, physical aspects, and choice influencers.

Oldfield and Baron found that there were 3 factors important in determining quality of higher education in the U.K University, namely requisite, acceptable, and functional. Requisite refer to those items or encounters that are essential to enable the students to fulfill their study obligations. This includes items such as: (i) academic staff have knowledge to respond to students' questions on courses; (ii) employ staff who have confidence; (iii) caring academic staff; (iv) administrative staff interest in solving problems; (v) dealt promptly for assistance; (vi) understand students needs and others. Acceptable refers to those encounters which students acknowledge as being desirable but not essential during the course of study. This includes: (i) services of the academic staff on individual attention; (ii) services provided within time expected; (iii) courteous staff, and (iv) caring academic staff. Functional, means those encounters that are of practical value, for example: (i) convenient operating hours; (ii) up-to-date equipment; and (iii) rendering promised services. They also compared the perceptions of service quality between first year and final year students. They found that perceptions change over a period of study, with 'acceptable' dimension having higher importance than others.

Langrosen et al (2004) examined the key dimensions of quality in higher education in Austria, Sweden and U.K. They found 11 key dimensions of quality in higher education, namely, corporate collaboration, information and responsiveness, courses offered, campus facilities, teaching practices, internal evaluations, external evaluations, computer facilities, collaboration and comparisons, post-study factors, and library resources.

Lee et al. (2000) examined the relationship between perceived service quality and customer satisfaction in three industries: (i) entertainment park, (ii) aerobic school and (iii) investment consulting. The results of the study showed that performance based measures of service quality explained more of the variation in overall service quality than does the difference between expectation and performance. They also found that service quality is an antecedent of customer satisfaction, and that customer satisfaction exerted a stronger influence on purchase intention than do service quality. In other words, customers do not necessarily buy services with highest quality but may buy services that provide more satisfaction. Factors such as convenience, price and availability may influence satisfaction and purchase intention while not actually affecting customer's perceptions of service quality (Cronin & Taylor, 1992).

Bigne et al (2003) studied the relationship between perceived quality and satisfaction in a public hospital and university in Spain. In as far as the public hospital is concerned, the results showed that overall perceived quality of hospital is determined by: core service performed by the doctors (medical quality); peripheral services of information; attention to the public; and nursing quality. The overall satisfaction with the hospital is a consequence of the overall perceived quality. However, in a university setting, it is found that overall university satisfaction is the consequence of overall university quality. The overall university quality is determined by teaching quality, library quality, information attention quality, and registration quality.

LaBay and Comm (2003) conducted a pilot study assessing the comparative student satisfaction between distance education and traditional course delivery. Using the gap analysis derived from SERVQUAL, they found that there were gaps between students' expectations and delivery perceptions for the traditional and distance education. For the traditional delivery, the gap suggests that the expectations exceeds the delivery, while for the distance education, the gaps showed that the delivery exceeded expectations. However, the findings of the study also suggest that traditional and online students hold similar expectations concerning course outcomes, regardless of the delivery mode.

From the above studies, it was clear that there are many approaches to the concept of service quality. The dimensions of service quality also vary depending on the areas focused by the researcher. However, in view of the universality of SERVQUAL, this approach will be adopted in assessing service quality in the OUM. Past studies also showed important relationships between service quality and satisfaction. As such it is hypothesized that overall service quality is positively related to customer satisfaction.

METHODOLOGY

Based on past studies, a structured questionnaire was developed, incorporating the dimensions suggested by Parasuraman et al (1988) and Joseph and Joseph (1997) in their studies. A total of 57 items were generated to assess the potential key dimensions of service quality in OUM. The items were measured on a 5 point interval scale, ranging from strongly disagree (1) to strongly agree (5).

A total of 5000 respondents (or 20% of the total student population in January 2004) were identified at random in all the learning centers throughout the country .A total of 4300 questionnaires were distributed to all the students. The remaining questionnaires could not be distributed as some of the students had left earlier on a semester vacation. Finally, a total of 1931 questionnaires were returned and only 1197 were usable for analysis resulting in a response rate of 27.8%.

In the sample, about 60.1% of the total respondents were female and 39.9% were male. In terms of ethnic groups, 70% of the total respondents were Malays, 12.5% were Chinese

and 6.4% were Indians. In terms of the age groups, 34% of the respondents were between 30-34 years old, 26.5% were between 35-39 years old, and 15.8% were above 40 years old. About 16% were between 20-24 years old, and 7.6% were below 24 years old. In terms of years of study, about 26.6% were in the 1st semester of their study, 17.9% were in the 2nd -3rd semester of study, 49.4% were in the 4th, 5th and 6th semester, and 6.15 were in the 7th and 8th semester of study. In terms of students' academic performance, about 2.3% were below a cumulative grade point average (CGPA) of 2.00, 16.1% were between 2.00-2.49 CGPA, 39.7% were between 2.50-2.99 CGPA, and 34% were between 3.00-3.49 CGPA. About 8% of the total respondents have CGPA of 3.50 and above. With respect to type of employment, nearly 78% were employed in the public sector, 16.4% were employed in the private sector, and 3.2% were self-employed. Table 1 shows the profile of the respondents.

The data was analyzed by using SPSS 12.0 Window program. To determine the key dimensions of service quality, the principal component solution was used in the factor analysis. The 57 items were rotated by Varimax, and only Eigenvalues greater than one was selected resulting in 8 dimensions of service quality. The 8 dimensions accounted for 65.58% of the variances explained. The dimensions were interpreted as (i) **program issues;** (ii) **learner services**; (iii) **tutors and pedagogy**; (iv) **physical facilities**; (v) **ICT services**; (vi) **mode of learning**; (vii) **modules** and (viii) **costs/ time**. The Pearson correlations showed that the 8 dimensions have convergent validity (significant at $p<0.001$) as shown in table 3.

Regression analysis was used to determine the relationship and influence of satisfaction on service quality.

FINDINGS AND DISCUSSION

To determine whether the overall service quality is related to satisfaction; a correlation analysis was carried out. The correlation between the two variables was 0.354, significant at $p<0.001$. As such the hypothesis in the study was supported. This means that there is a positive relationship between overall service quality and learner's satisfaction. This finding is consistent with that of Bigne et al (2003) and Lee et al. (2000).

Table 4 shows the regression between satisfaction and service quality. The regression equation explained 15.6% of the variance of the dependent variable (satisfaction) (F=21.950, $p<0.001$). The three independent variables, **learner services, physical facilities, and mode of learning, were significantly and positively associated with students satisfaction.** The item, learner services was found to be the most influential factor in determining learners' satisfaction, followed by mode of learning and physical facilities. The other dimensions of service quality, such as program issues, tutors and pedagogy, ICT services, modules, and cost/ time were not statistically significant at $p<0.05$ in the regression equation.
The above findings are consistent with Bigne et al (2003) and Lee et al. (2000) on the influence of service quality dimensions with satisfaction. However, the key items in the

dimensions are different due to differences in the identification of the key dimensions and difference in the type of industry. Findings from the above results suggest that the three service quality dimensions need to be addressed in trying to enhance the satisfaction of the customers. Below are the deliberations on each of the three dimensions concerned.

A.   Learner services

The key elements under the dimension of **learner services**, include: (i) efficiency of the learner service centre; (ii) student affairs management; (iii) learning center administrators; (iv) communication with the staff; (v) enquiries and complaints; (vi) LMS or online learning services; (vii) Digital Library services; (viii) Examination Unit services; (ix) ICT services; (x) Management of registry; (xi) Faculty services.

Learner services is integral to a quality and full learning experience; it plays a crucial role in providing academic, social, and personal support to learners to enable them to succeed in their learning journey. First time learners, particularly when they are new to open and distance learning, as in OUM, is often uncertain of what distance learning experiences entail and unsure of what their role as a learner will be. Learners do express frustration with the lack of prompt feedback on their queries, whether via emails or telephones; technical difficulties, feelings of isolation, lack of personal face-to-face interaction, lack of self-direction and motivation and many others. These factors are not new to an ODL institution; in fact these factors represent ODL's retention challenges. The following article: http://www.irrodl.org/content.v4.1/dunlap.html describes the types of learner services strategies that can effectively address those challenges.

Taking into consideration the results of this study, OUM has implemented several strategies, for example (i) providing customer service training for all "front-line" staff to ensure that learners are treated with care, kindness, and respect; (ii) cross-training learner service centre personnel to ensure timely access to accurate information in response to learners' inquiries; (iii) introducing "Learning Skills for ODL learners" to all new learners; (iv) improvement and enhancement of OUM's e-learning platform, myLMS; (v) improving the online administrative processes such as registration, time-tabling of courses; online collaborative learning; (vi) providing more opportunities for staff-learners interaction; (vii) setting up of the tutor management unit to coordinate all matters pertaining to tutors; (viii) providing more sessions on advising and counseling for "at-risk" learners and many others. In general, based on the verbal feedbacks and observation, learners appear to be happier now, as compared to before. This is supported by the positive results of the last Priority-Satisfaction survey conducted in November 2004 (Latifah & Ramli, 2005 - in progress), and the positive changes in the Priority-Satisfaction survey results from 2003 (Latifah & Ramli, 2004) to 2004 is a testimony to this statement. No institution is without problems, and OUM is no exception, it will succumb to these challenges by adopting appropriate changes, may it be in the form of structure or policies, as it moves forward.

B.   Physical facilities

Items under this dimension include: (i) classroom facilities; (ii) computer facilities; (iii) Administrator's office; (iv) classroom layout and physical appearance; (v) facilities for student activities; (vi) library facilities; and (vii) surrounding environment.

The importance of physical facilities, which provide a favorable and a conducive learning environment cannot be understated. OUM has bought several new buildings as OUM own learning centres, on top of those that are being rented. All learning centres are equipped with sufficient facilities to ensure the smooth running of academic activities. There is not much of an issue dealing with OUM's own learning centres, but for the rented premises, the intricacies of the business dealings can sometimes be time consuming and even daunting. This may have had some impact on to the learners who happens to be the recipient of the facilities. However, OUM has had its fair share of success in this area. OUM will continuously improve to ensure that learners' level of satisfaction is maintained at a high level.

C.   Mode of learning

Modes of learning incorporate five items: (i) personalized learning is convenient; (ii) blended mode of learning is flexible; (iii) blended mode is convenient; (iv) blended mode is encouraging and motivating; and (v) blended mode is effective.

One of the main reasons why learners choose OUM is the flexibility factor. To learners, they want the flexibility of time, space and mode of study, which they will not get from the conventional higher education institutions. What are the challenges, as far as mode of learning is concerned, that can have an impact on learners' satisfaction? It could possibly be due to learners' lack of readiness, self-discipline and motivational commitments in coping with the demands of a distance learner. Indeed, these are the actual challenges faced by some of the teachers who are going through their undergraduate study programmes in OUM (Latifah, Ramli, Zoraini Wati, Nik Azlina, 2004). Learners are required to take charge of their own learning; they cannot expect tutors to provide the content, via lectures, for example. In fact, for a distance learner, self-managed learning is one of the modes of learning. Another contribution could be issues that are related to learners readiness in using ICT (Latifah & Ramli, 2003). Learners will be disadvantaged if they do not exploit the full potential of the e-learning platform, emails, forum, digital library and other electronic materials. The Learning Skill module has been very useful to OUM learners; they are not only exposed to study skills, but are also exposed to computer skills and information retrieval skills, which form the critical requirement of an ODL learner. Personalized learning is also made available to learners who prefer not to come to the learning centres for their learning. For these learners, they are assigned a dedicated online tutor, who assists them in the learning process. Again, dissatisfaction may set in when learners' expectations of their online tutors, communication, assessment matters, tutor's feedback and others are not met. There will be continuous improvement in this area; as personalized learning to an ODL institution is here to stay.
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CONCLUSION

The findings of this study showed that (i) *the overall service quality is positively correlated with satisfaction* and (ii) *service quality dimensions such as learner services, mode of learning and physical aspects, are significantly and positively associated with satisfaction.* These findings support the findings of past studies on the above relationship and provide an important contribution in the field of open and distance learning. The present finding also suggests the potential generalisability of the service quality dimensions as an antecedent of satisfaction (Bigne et al, 2003).

One managerial implication of the recent finding is that key dimensions such as learner services, physical facilities and mode of learning, need to be improved in order to create greater satisfaction among OUM learners. Some possible solutions could include: (i) reviewing the staff requirement of the Learner Services Centre; (ii) develop and implement ongoing customer service training for all "front-line" staff; (iii) improving the physical facilities of the learning centres (iv) encouraging greater use the e-learning platform in the creation of learning communities; (v) increase learners' awareness on the advantages of personalized learning, and many others. If a learner service is not able to provide efficient and effective service quality, the unfavorable 'word of mouth' of the dissatisfied customers will have a damaging effect on the institution. OUM will not be a choice of their university. Learner services play an important role in learners' retention, a subject of critical importance to all institutions. Learners will persist in their studies as long as they are happy and satisfied with the services. The consequence of an efficient service quality implies that the institution could improve the overall effectiveness and efficiency within the organization. This means that the organization has the potential to enhance its growth with increasing demand for the services of that institution.

One area that needs to be addressed in future research is the effects of gender, ethnicity, age, and study programs on perceived service quality and satisfaction relationship.

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Table 1: Profile of Respondents

Item	Percentages
1. Age:	
Below 20 yrs old	0.4%
20-24 yrs old	7.2%
25-29 yrs old	16.1%
30-34 yrs old	34%
35-39 yrs old	26.5%
40 yrs and above	15.8%
2. Gender:	
Male	39.9%
Female	60.1%
3. Ethnic Group:	
Malay	70%
Chinese	12.5%
Indian	6.4%%
Others (specify)	11.1%
4. Name of Program Study:	
Business	20.5%
Education	55.4%
Information technology	24.1%
5. Current Semester:	
Semester 1	26.6%
Semester 2	11.5%
Semester 3	6.4%
Semester 4	22.5%
Semester 5	11.9%
Semester 6	15%
Semester 7	4.2%
Semester 8	1.9%
6. Current CGPA:	
Below 2.00	2.3%
2.00 – 2.49	16.1%
2.50 – 2.99	39.7%
3.00 – 3.49	34%
3.50 – 4.00	8%

7. Location of Learning Centres:	
UKM Bangi,	0.8%
KSI, Terengganu	5.7%
YYDCS, Sandakan	6.6%
PWS Kuching	8.4%
UM, Kuala Lumpur	3.1%
IPDA, Jitra	10.2%
USM, Pulau Pinang	0.9%
PWSJ Saberang Jaya	6.3%
KMK, Kulim	2.8%
PWNS, Seremban	6.2%
KYS,Kota Kinabalu	8.4%
AIM,Ipoh	7.3%
PWK, Kota Bahru	8.6%
KUiTHO, Johor	3.2%
IPTP, Miri	3%
MPPM, Melaka	2.8%
KIPSAS, Kuantan	4.2%
KIM, Mentakab	6.9%
UiTM, Tawau	4.8%
8. Employment status:	
Self- Employed	3.2%
Public Sector	78.2%
Private Sector	16.4%
Not Employed	2.3%
9. Income of respondent (per month):	
Less than RM 2000 per month	7.7%
RM 2001 – RM 3000 per month	73.5%
RM 3001 – RM 4000 per month	14.9%
RM 4001 – RM 5000 per month	3%
RM 5001 and above	0.9%
10. Marital status:	
Single	21.6%
Married	77.8%
Divorced	0.6%

Table 2: Reliability Scores for Perceptions of Service Quality

Dimensions of Service Quality	Number of items	Cronbach Alpha Coefficient (Perceptions)
Factor 1 - Program issues	12	0.923
Factor 2 – Learner services	9	0.924
Factor 3 – Tutors and pedagogy	8	0.917
Factor 4 – Physical aspects	7	0.920
Factor 5 – ICT services	7	0.880
Factor 6- Mode of Learning	5	0.908
Factor 7- Modules	5	0.868
Factor 8 – Costs/time	4	0.878
Overall	8	0.889
Overall	57	0.969

Table 3: Correlations of Key Dimensions of Service Quality

		program issues	learner services	tutors and pedagogy	physical facilities	ICT services	mode of learning	modules
program issues	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	1177						
learner services	Pearson Correlation	.673(**)	1					
	Sig. (2-tailed)	.000						
	N	1160	1177					
tutors and pedagogy	Pearson Correlation	.630(**)	.482(**)	1				
	Sig. (2-tailed)	.000	.000					
	N	1166	1166	1185				
physical facilities	Pearson Correlation	.500(**)	.578(**)	.334(**)	1			
	Sig. (2-tailed)	.000	.000	.000				
	N	1163	1165	1170	1182			
ICT services	Pearson Correlation	.600(**)	.684(**)	.444(**)	.572(**)	1		
	Sig. (2-tailed)	.000	.000	.000	.000			
	N	1161	1161	1164	1163	1176		
mode of learning	Pearson Correlation	.673(**)	.516(**)	.556(**)	.436(**)	.506(**)	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.000		
	N	1161	1161	1169	1166	1160	1181	
modules	Pearson Correlation	.592(**)	.534(**)	.459(**)	.391(**)	.492(**)	.491(**)	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	1170	1171	1178	1175	1169	1174	1190
costs/ time	Pearson Correlation	.620(**)	.532(**)	.403(**)	.400(**)	.471(**)	.463(**)	.388(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000
	N	1168	1168	1175	1174	1167	1171	1180

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

Table 4: Regression Analysis results between Satisfaction and Perceived Service Quality

Independent Variables	Standardized Beta	t-value	P value
Programme issues	-0.020	-0.389	0.698
Learner services	0.202	4.279	0.000**
Tutors and pedagogy	-0.061	-1.593	0.112
Physical facilities	0.107	2.801	0.005*
ICT services	0.059	1.320	0.187
Mode of learning	0.172	4.107	0.000**
Modules	-0.045	-1.182	0.238
Cost/ time	0.038	0.981	0.327

* significant @ p<0.01
** significant @ p<0.001

 [Adjusted R^2= 0.149 R^2=0.156]