

**Service Quality in the Open and Distance Learning
– The Perspective of Learners in Malaysia**

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ABSTRACT

The purpose of this paper is to examine the learner's perceptions of the service quality in an open and distance learning institution in Malaysia. Focus group sessions and structured questionnaires were used to collect the relevant information from the respondents. A total of 44 respondents participated in the focus group and 1197 participated in the self-administered questionnaire survey. The results of the study showed that service quality in the open and distance learning has several characteristics different from traditional higher institutions. As such new perspectives on service quality was proposed and subsequently tested in a Malaysian institution. It was also found that the overall satisfaction was related to each of the key dimensions of service quality. The results of the t-tests and ANOVA showed that gender, ethnicity, type of academic programs, and location of learning centers have an effect on perceived service quality in the open and distance learning. The implications of the study are also discussed.

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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 the certificate level to the 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, namely the face-to-face education. 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 about 24,000 students in June 2004.

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. As learners in the open and distance learning, what are the factors considered important by the learners in that mode of learning? What are their perceptions of the service quality provided by the institution? What are their expectations? As such, it is the purpose of this paper to examine the dimensions of service quality in the open and distance learning (ODL) education in Malaysia. Specifically, this paper focuses on the following areas:

- i) Determine the dimensions of the service quality concept in the open and distance learning mode,
- ii) Examine the learner's perceptions and expectations of service quality in the open and distance learning mode,

- iii) Examine the relationship between satisfaction and perceived service quality
- iv) Examine the effects of gender, ethnic group, study programmes, and distance of the learning centers on perceived service quality.

This study is particularly important, as it will provide insights on the nature and extent of service quality provided in the open and distance learning education. Considering the potential high growth rates of distance education in the near future, it is imperative to assess the perceptions of the learners on the service quality provided in ODL as it can provide ideas on how to improve the existing service quality. The findings of this study will also provide important theoretical implications on the existing literature on service quality, particularly in the open and distance learning education, which is quite limited. In other words, are there are differences in the dimensions of service quality in the open and distance learning mode as compared to the traditional mode of learning. Finally, this study can also provide managerial implications to educational providers in Malaysia and those providing the ODL mode of learning in general.

LITERATURE REVIEW

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 is 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 services and immediate reaction on the problem faced by the customer. 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 understand 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 like dental school patient, 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.

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 that modifications of the research instrument to include industry specific quality features is appropriate.

Joseph and Joseph (1997) examined the 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 scale of 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 factors. Using Joseph and Joseph (1997) instrument, Ford et al. (1999) found that U.S. students rated greater importance to academic reputation, cost/ time issues, program issues, other, physical aspects, and choice influencers.

In another study by Oldfield and Baron (2000), they used a two stage approach in collecting the data, that is by focus group and questionnaire like the previous studies by Joseph and Joseph (1997). 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 like academic staff have knowledge to respond to students' questions on courses, employ staff who have confidence, caring academic staff, administrative staff interest in solving problems, dealt promptly for assistance, 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 would include services of the academic staff on individual attention, services provided within time expected, courteous staff, and caring academic staff. By functional, it means those encounters that are of practical value like convenient operating hours, up-to-date equipment, and render promised services. They also compared the perceptions of service quality between first year and final year students. They found that the perceptions change over a period of study, with 'acceptable' dimension having more importance than others.

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 method of the course.

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 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.

From these studies, it can be discerned that there are many approaches to measure service quality in education. The dimensions of service quality also vary depending on the areas focused by the researcher. However, in view of the universality of the SERVQUAL model, this approach will be adopted in assessing service quality in the open and distance learning context in Malaysia. In other words, this will be used as a basis to define and redefine the key dimensions of service quality in this study.

METHODOLOGY

Since there were no past studies on service quality in ODL in Malaysia and no relevant information on ODL abroad, it was proposed that this study will adopt a two stage approach in getting the appropriate information. The first stage would be to solicit relevant information on service quality in ODL from the tutors and learners by using the focus group. In this approach, the researchers firstly met with 8 key academics (lecturers in OUM) for a discussion on service quality in distance education. The researchers, then, met 14 learners in Tawau, Sabah (about 2000km from OUM main campus) and 30 learners in Kota Bahru (about 500km from OUM main campus) to solicit similar information. These respondents were selected at random at the learning centres. The learning centres were selected by convenience to the researchers due to time constraints. Each focus group session lasted about 1.5 – 2 hours.

Based on the findings of this focus group sessions, the researchers developed a structured questionnaire relevant for ODL and incorporated the dimensions suggested by Parasuraman et al (1988) and Joseph and Joseph (1997) studies. The items were measured on a 5 point Likert scale, ranging from strongly agree (1) to strongly disagree (5). A low score suggests that the respondents have high expectations or positive

perceptions and a high score suggests that respondents have low expectations or less favorable perceptions of service quality.

It should be noted that tests on reliability and validity of the instrument were carried out before collecting the final data. Pre-tests of the structured questionnaire were also done on 91 respondents before sending out the final questionnaire. The pre-tests showed that the 51 items generated from the focus group findings were relevant, and another 6 items were added after reviewing it from past literature search.

In stage two, 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. Finally, about 4300 questionnaires were distributed to all the students. The remaining questionnaires could not be distributed as some of the students had gone for the semester vacation earlier. Finally, a total of 1931 questionnaires were returned and only 1197 are usable for analysis in this study, representing a response rate of 27.8%.

In the sample, about 60% of the total respondents were female and 40% were male. In terms of ethnic groups, 69.9% of the total respondents were Malays, 12.6% 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 26.5% were in the 1st semester of their study, 18.1% 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 the 2.00 cumulative grade point average (CGPA), 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. In terms of income level, nearly 81.2% of the total respondents earned below RM 2,000 per month. Nearly 15% earned between RM 2,000-3,000 per month. About 3.9% of the total respondents earned above RM 3,000 per month. In this study, about 36% of the respondents financed their study through the higher education fund (PTPTN), 2% obtained their EPF, 34.1% through loans, and 6.1% through scholarships. Nearly 18% financed their studies through personal/ own source. In terms of distance between the learning centers and home of the respondents, 25.7% were located in areas less than 10km from their homes, 22% were in areas between 11-20km, 11.9% were in areas between 21-30km and 40.4% were in areas beyond 30km from their homes. This means that a substantial number of the respondents were located in remote areas from the learning centers. The total number of learning centers participated in the study was 19, whereas OUM has 28 learning centers then. Table 1 shows the profile of the respondents.

The quantitative data was analyzed by using SPSSx program. Descriptive statistics, t-tests and ANOVA will be used to analyze the relevant data. ANOVA and t-tests were used to analyze the effects of gender, ethnic group, academic program, and distance between learning centers on perceived service quality. Confirmatory factor analysis was used in Lisrel to determine the good of fit index of the dimensions in service quality.

FINDINGS AND DISCUSSION

Dimensions of Service Quality

Focus Group Sessions

In the discussion with the key academics and learners in distance education from OUM, two key questions were asked: What is service quality?, and What are the key characteristics of service quality in OUM?. Overall, it was found that service quality was viewed in terms of ‘satisfaction’, ‘performance, and ‘expectations’. Other defined it in terms of benefit gained, fulfillment of desires or need, and ‘the effect of provision of various services to consumer’. These suggest that the participants had a clear view of what is service quality concept.

With regards to the characteristics of service quality in OUM, the participants identified the following dimensions: academic/ administrative service, learning and teaching/ pedagogy, and support services. They also identified the term ‘flexibility’ as an important characteristic in OUM service delivery. Flexibility was referred in terms of choices of academic programs, choice of courses, changing courses and programs, mode of learning and mode of payment. In the academic/ administrative services, the participants considered the essential services as registration, orientation, examination, learner service centre, and admissions and records. In teaching and pedagogy, the items identified were curriculum, tutor/ subject matter expert (SME), learning mode, and modules. In the support services, the items identified were physical classroom, laboratory and computer labs, learning centers, service centers, library, broadband, accessibility and human resources.

Based on these responses, the participants regrouped the key characteristics into 8 categories namely mode of learning, tutors and pedagogy, modules, learner services, program issues, cost/ fees, physical facilities, and others. Subsequently, a total of 51 items were generated to define the key dimensions in OUM service quality. After further refinement, a total of 57 items were identified as a preliminary questionnaire for it to be used to the learners in OUM. The mode of learning has 6 items, while the dimension on tutors and pedagogy has 8 items. There were 5 items on modules, 10 items on learner services, 11 items on program issues, 4 items on cost/ fees, 7 items on physical facilities,

and 6 items on others like problem solving, information search, complaints and communication with staff.

In the focus group sessions, it was also found that service quality was defined in terms of customers' satisfaction, response to problems, physical facilities, and academic reputation. With regards to the question of service quality in OUM, the participants provided positive and negative comments on the level of service quality. The responses were similar to the key dimensions identified earlier in the sessions with the academic staff in OUM. They also identified items like modules, computer facilities, academic and other administrative issues as critical in the service delivery of OUM distance education.

With regards to expectations of service quality, the participants highlighted the potential areas to be improved as defined in the 8 categories identified earlier namely myLMS services, quality of modules, examination management, learning mode, library, tutors and pedagogy. This showed high expectations on the level of service quality to be rendered by OUM. The participants also ranked program issues as most important (33.3%), followed by cost/ time (20.5%), and learner services (17.9%) in looking at distance education tertiary institution. The least important dimensions were mode of learning (10.5%), tutors and pedagogy (10.3%), and modules (5.1%).

The results of the focus group discussion showed support the presence of 8 key dimensions in service quality in the open and distance learning institution.

Survey Results

In relation to the respondents' perceptions' of service quality in the open and distance learning, the 57 dimensions were regrouped into 8 dimensions based on a priori basis. The reliability tests for each of the dimensions ranges from 0.8560 to 0.8912, suggesting a high level of internal consistency in the responses. See Table 2.

The 8 dimensions were further analyzed by using the Pearson correlation to examine the extent of convergent validity of the service quality dimensions. The results showed that all the 8 dimensions were highly correlated at $p < 0.01$, suggesting a strong convergent validity in the dimensions of service quality, both for the expectations and perceptions. Further, it should be noted that each of the eight dimensions were also factor analyzed to see the extent each of dimensions converged into one factor loading. This showed the extent of factorial validity of each of the dimensions in service quality.

Confirmatory factor analysis was also used to determine the extent of fit of the 8 dimensions in the service quality. The results are shown in table 3. The results of the confirmatory analysis showed that each of the 8 dimensions had a good fit indices (GFI), ranging from 0.76 to 0.98 for the expectations and 0.75 to 0.99 for the perceptions of

each of the service quality dimensions. The CFI (comparative fit index) for each of the dimensions of perceived service quality ranges from 0.90 to 0.99 suggesting a good fit.

In relation to the past studies mentioned earlier, the above findings provide suggests different dimensions considered critical in measuring service quality in the open and distance learning. For example, the dimensions identified by Joseph and Joseph (1997) were quite similar to the present findings in terms of the dimensions related to programme issues, physical aspects, and costs. However, the dimensions were not similar as identified by Olfield and Baron (2000). In relation to Parasuraman et al. (1988), there were similarities in certain dimensions like physical aspects and modules (tangibility), and learner services (assurances). The other dimensions like responsiveness, reliability and empathy were embedded in the mode of learning, tutors and pedagogy, and others dimensions in this finding. This does not mean that the dimensions suggested by Parasuraman et al. (1988) were not relevant but our findings suggests a more accurate description of what are the customers needs and expectations in ensuring an excellent service quality in the open and distance learning. Of course, it can be argued that responsiveness, reliability and empathy are important, but what is more important is to determine the areas to be served, in this respect it refers to the modules, pedagogy, and mode of learning. This argument is also supported by Soutar and McNeil (1996) on the need to have a customer driven service quality of education measure in the tertiary sector. Thus, the above findings suggest an alternative conceptual model of service quality in the open and distance learning mode.

Perceptions and Expectations of Service Quality

Table 4 shows the results of the perceptions and expectations of service quality.

From the mean score of each of the dimensions of service quality, it can be discerned that the respondents have the highest expectations in terms of 'tutors and pedagogy' (mean=2.036). They have the least expectations on 'physical aspects' (mean=2.829). The other dimensions that they have high expectations were 'mode of learning' (mean=2.156), and 'programme issues' (mean=2.170).

With regards to their perceptions of service quality, they have the most favourable perception on 'tutors and pedagogy' (mean=2.099). They also have favorable perceptions of 'programme issues' (mean=2.198), and 'mode of learning' (mean=2.2227). On the other hand, they have the least favourable perception on 'physical aspects' (mean=2.844).

The paired t-test also showed that there were significant differences between the expectations and perceptions of service quality, particularly in relation to 'mode of learning', 'tutors and pedagogy', 'modules', 'programme issues', 'cost/ fees', and 'others' (significant ranges from $p < 0.005$ to $p < 0.0001$). This implies that there is a gap

between the perceptions and expectations of the respondents in the open and distance learning institution.

With respect to the perceived dimension on tutors and pedagogy, the items like learner-tutor relationship (mean=1.89), helpful tutors and encourage learning (mean=1.95), tutors provide effective feedback to learners (mean=1.99), and tutors provide appropriate academic advice and motivation (mean=1.99) were rated favorably by the respondents. The item that was rated least favorably was online learning sessions (mean=2.65).

In relation to the mode of learning dimension, the respondents rated most favorably in terms of flexibility in the blended mode of learning (mean=2.14). The item that was rated least favorably was the effectiveness of the blended mode of learning (mean=2.30).

As for the modules, the items that was rated most favorably was the delivery of the modules on time (mean=2.43), while the item that was rated least favorably was the quality of the modules (mean=2.51). the other items in this dimension were rated reasonably favorable, that is below the mean score of 3.0.

As for the program issues, there were 11 items related to this dimension. The item that was rated highly favourable was the minimal entry requirement and flexible entry (mean=2.05). The item that was rated least favourably was the duration of the study program (mean=2.33). The other items were rated reasonably well by the respondents.

Costs/ fees were the other dimension rated quite favourably by the respondents. In this dimension, there were 4 items, namely the convenient mode of payment (mean=2.22), flexible mode of payment (mean=2.23), efficiency of finance department (mean=2.42), and reasonableness of the fees (mean=2.52).

With regards to learner services, this dimension has 11 items. The item that was rated most favorably was that the services offered by the faculty was good (mean=2.28). The item that was rated least favorably was the digital library services that was not considered to be effective (mean=2.92). The effectiveness and helpfulness of the administrators at the learning centres was also rated favorably (mean=2.29) as compared to the other items in that dimension.

As for the physical aspects, the item that was rated most favorably was in terms of the classroom facilities (mean=2.64), while the item that was rated least favorably was

inadequateness of library facilities (mean=3.13). Adequateness of computer facilities at learning centres was also rated less favorably (mean=3.09).

Finally, the others' dimension has 5 items namely helpfulness and courtesy of staff (mean=2.25), availability of latest information (mean=2.39), handling complaints effectively (mean=2.52), learners ability to contact and resolve problems (mean=2.58), and ease to communicate with staff (mean=2.36). This means that that helpfulness and courtesy of the staff was rated most favorably while the issue of knowing where and who to contact in OUM when the learners have problems was rated least favorably.

Overall, the results showed that the respondents have reasonably favorable perceptions of the dimensions in service quality provided by OUM. However, there are areas that can be improved reasonably like computer facilities, and library facilities, whose mean scores were above 3.00.

Satisfaction and Perceptions of Service Quality

In terms of the respondents' overall satisfaction, it was found that 74.6% were satisfied (about 5% were very satisfied) from the survey group, and 64.7% were satisfied in the focus group discussion. Nearly 14.7% were not satisfied (1.3% were very dissatisfied). About 10.7% of the respondents were indifferent in expressing their level of satisfaction.

With regards to relationship between the satisfaction level and perceived service quality dimensions, it was found that each of the 8 dimensions were positively correlated (significant at $p < 0.0001$), suggesting that the level of level of satisfaction increases as the perceived service quality increases.

Effects of Gender, Ethnicity, Study Programmes, and Distance of the Learning Centres on Perceived Service Quality.

To examine the effects of gender, ethnic groups, academic programs, and distance of learning centres on perceived service quality in ODL, t-test and one way ANOVA was used in the study as shown in table 5.

The results showed that there were differences in the mode of learning and others dimensions among the male and female respondents (significant at $p < 0.05$). The male respondents have more favourable perceptions of service quality than the female respondents.

There were also differences among the ethnic groups namely in the programme issues, cost/ fees, physical aspects and other dimensions (significant at $p < 0.05$). In the programme issues and costs/ fees, the other ethnic groups perceived favorably relative to the Malays, Chinese and Indian groups. The Indians, however, rated more favourably on the physical aspects and the other dimensions than the Malays, Chinese or Other ethnic groups.

In relation to the type of study programmes, there were significant differences in the perceptions on costs/ fees, and other dimensions (significant at $p < 0.05$). The respondents pursuing the education programmes rated favourably than the business or information technology programme on the cost/ fees and others dimensions.

With respect to the distance between the learners area and home, it was found that there were significant differences in 4 dimensions namely mode of learning, costs/ fees, physical aspects, and others dimensions (significant at $p < 0.05$).

These results showed the extent of influence of these socio-demographic factors on perceived service quality in the open and distance learning. More specifically, these results imply that gender, ethnicity, type of study programmes and distance between the learning centres have effects on perceptions of service quality in the open and distance learning context. It also implies that such factors should be viewed with caution in handling service quality issues in the distance education, either in managing the institution or marketing the programmes in the institution.

CONCLUSION

The findings of this study showed that there were eight key dimensions in the service quality of open and distance learning, particularly in the Malaysian context. These dimensions were mode of learning, tutors and pedagogy, modules, learner services, programme issues, fees/ costs, physical aspects and others. These dimensions indicate the extent of service quality to be measured in such tertiary institution. Further, these dimensions are new but also appear to be consistent with that suggested by Parasuraman et al. (1988) in terms of the tangibility, and assurances. It is also consistent with Joseph and Joseph (1997) in terms of the cost/ fees, programme issues and physical aspect.

One major implication of the study is that it has suggested a different perspective in measuring service quality in the open and distance learning environment by incorporating the key elements and components of SERVQUAL and other factors related to tertiary education and distance learning. In other words, this finding incorporated the three

elements in measuring service quality, namely the service quality concept, tertiary education, and the open and distance learning mode. The other elements as suggested by Parasuraman et al. (1988) were embedded in the other dimensions of service quality, as suggested by Carman (1990) that supported the need to add new dimensions in different settings.

The findings of this study also imply that the key choices in service quality do not differ much, but there exist variations in the quality of the services performed depending on the context in which it is served, like the location of the learning centre and academic program offered by the institution. The effects of gender and ethnic groups also have some influence on perceived service quality. In other words, these factors have an effect on the perceptions of service quality rendered. Finally, the finding of the study also has managerial implications, particularly to the managers of open and distance learning institutions in Malaysia and perhaps in this region.

In this study, it was also found that each of the 8 dimensions of perceived service quality were positively related with overall satisfaction. As such, in handling service quality issues, it has an impact on the satisfaction of the clients, in this case the OUM learners. Those key dimensions that was considered to be of lower quality implies that the level of satisfaction was lower. Consequently, in trying to improve the satisfaction of OUM learners, it is imperative to address the lagging items in each of the dimensions of perceived service quality.

In order to enhance the development of this service quality model, it is recommended that further research is needed to test and retest the instrument and model in a larger sample in Malaysia and elsewhere in the region, thus enhancing the generalisability of the proposed dimensions of service quality in the open and distance learning environment. Further research should also be conducted on the potential differences of service quality with the other variables like student performance (CGPA), type of programme (diploma versus degree level), age, income, and geographic location (rural-urban) centres.

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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 Sabrang 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%

11. Source of Finance:	
EPF	2%
PTPTN	36%
Loan	34.1%
Scholarship	6.1%
Personal	18.1%
Others	3.7%
12. Distance between learning center and home:	
Less than 10km	25.7%
11-20 km	22%
21-30km	11.9%
More than 30km	40.4%

Table 2: Reliability Scores for 8 Dimensions of Service Quality

Dimensions of Service Quality	Number of items	Cronbach Alpha Coefficient (Expectations)	Cronbach Alpha Coefficient (Perceptions)
Mode of learning	5	0.8712	0.8810
Tutors and pedagogy	9	0.8716	0.8843
Modules	5	0.8714	0.8865
Learner services	11	0.8560	0.8680
Program issues	11	0.8580	0.8719
Cost/ Fees	4	0.8788	0.8872
Physical	7	0.8797	0.8912
Others	5	0.8621	0.8754
Overall	57	0.8832	0.8941

Table 3 – Confirmatory Factor Analysis of 8 Dimensions of Service Quality

Dimensions	GFI	CFI	RMR
Mode of Learning Expectations Perceptions	0.95 0.92	0.96	0.038
Tutor & Pedagogy Expectations Perceptions	0.96 0.96	0.98	0.032
Modules Expectations Perceptions	0.98 0.97	0.98	0.024
Learner Services Expectations Perceptions	0.76 0.75	0.90	0.085
Program Issues Expectations Perceptions	0.89 0.90	0.96	0.044
Cost/Fees Expectations Perceptions	0.98 0.99	0.99	0.026
Physical Expectations Perceptions	0.89 0.88	0.95	0.050
Others Expectations Perceptions	0.93 0.95	0.96	0.050

Table 4: Perceptions and Expectations of Service Quality

Dimensions of Service Quality	Mean Score* For Expectations	Mean Score* for Perceptions	T-value
Mode of learning	2.156	2.227	4.676**
Tutors and pedagogy	2.036	2.099	5.164**
Modules	2.359	2.422	3.940**
Learner services	2.524	2.551	1.720
Program issues	2.170	2.198	2.374****
Cost/ Fees	2.303	2.349	3.119***
Physical	2.829	2.844	0.880
Others	2.366	2.429	3.990**

(*lower mean score suggests high expectations or favorable perceptions of the service quality)

(**significant at $p < 0.001$)

(*** significant at $p < 0.01$)

(**** significant at $p < 0.05$)

Table 5: Influence of Selected Demographic Factors on Perceptions of Service Quality

Dimensions of Service Quality	Gender)	Ethnic Groups	Type of Academic Programs	Distance between Learning Centres and Home
Mode of learning	P<0.05	n.s	n.s.	P<0.05
Tutors and pedagogy	n.s	n.s	n.s	n.s
Modules	n.s	n.s.	n.s	n.s.
Learner services	n.s	n.s.	n.s	n.s.
Program issues	n.s	P<0.05	n.s	n.s
Cost/ Fees	n.s	P<0.05	P<0.05	P<0.05
Physical	n.s	P<0.05	n.s	P<0.05
Others	P<0.05	P<0.05	P<0.05	P<0.05

n.s = not significant at p<0.05

Appendix 1
Expectations of Service Quality

Item	Mean	Standard Deviation
<i>Mode of learning</i>		
1. Personalized learning is convenient	2.1342	0.86489
2. Blended mode of learning is flexible	2.0556	0.71971
3. Blended mode of learning is convenient	2.1178	0.76771
4. Blended mode of learning is encouraging and motivating	2.2324	0.80233
5. Blended mode of learning is effective	2.2756	0.78488
<i>Tutors and Pedagogy</i>		
6. Tutors method of teaching is innovative and effective	2.1481	0.78554
7. Tutors are helpful and encourage learners to learn	1.8266	0.75003
8. Tutorial sessions motivate learners to read the modules	2.0619	0.82908
9. Tutors communicate well with learners	1.9197	0.74252
10. On-line learning sessions are effective	2.7071	1.05695
11. Learner-tutor relationship is good	1.7781	0.73938
12. Tutors provided effective feedback on learners performance (assignment & quiz)	1.9615	0.81422
13. Tutors are well prepared in handling the tutorial sessions	1.9791	0.79281
14. Tutors give appropriate academic advice and motivation	1.9498	0.80531
<i>Modules</i>		
15. Modules are well written	2.2809	0.94076
16. Quality of modules are high	2.4494	0.97870
17. Content of modules are clear and interesting	2.4312	0.96381

18.Style of writing in module is clear and effective	2.4020	0.95981
19.Modules are delivered on time	2.2259	1.04224
<i>Learner Services</i>		
20.Learner Service Centre is efficient	2.5205	1.00428
21.Sudents affair department is helpful and effective	2.4335	0.96828
22.Administrators in learning centres are helpful and effective	2.1990	0.85454
23.Communication with OUM is easily accessible and effective	2.7266	1.04765
24.Enquiries and problems are well responded and resolved	2.6303	0.99084
25.LMS services are efficient and effective	2.6082	1.04317
26.Digital library services are effective to learners	2.8515	0.98038
27.Services of Examination Unit are efficient	2.4744	0.88828
28.OUM technology services (internet, LMS, e-mail, etc) is easily accessible and efficient	2.6636	1.09390
29.Management of registry (registration and timetables) services is efficient	2.3903	0.93732
30.Services offered by Faculty is good	2.2487	0.79769
<i>Program Issues</i>		
31.Program structure are flexible	2.1464	0.72487
32.Program contents are interesting	2.1945	0.73667
33.Academic programs offer wide range of specialization	2.1206	0.73508
34.Entry requirement is minimal and flexible	2.0008	0.71712

35.Number of modules per semester is not burdensome	2.1784	0.89565
36.Method of assessment is fair	2.1868	0.81032
37.Rigor of assessment method assures quality of program	2.1140	0.74100
38.Management of examination sessions are efficient	2.1706	0.81163
39.Management of program registration is flexible and efficient	2.2921	0.86582
40.Duration of study program is reasonable	2.3096	0.91215
41.Information on study program is available	2.2027	0.78087
<i>Cost/ Fees</i>		
42.Tuition fees charged is reasonable	2.4744	0.99957
43.Mode of payment of fees is convenient	2.1515	0.79950
44.Mode of payment is flexible	2.1689	0.80215
45.Services by finance department is efficient	2.4187	0.90851
<i>Physical</i>		
46.Classroom facilities in learning centres are excellent	2.5213	1.06350
47.Computer facilities in learning centres are adequate	3.1115	1.16441
48.Administrator's office is attractive	2.6918	0.98291
49.Classroom layout and physical appearance is appealing	2.7023	1.03335
50.Facilities for students activities are adequate	2.9606	1.08605
51.Library facilities is attractive and adequate	3.1829	1.07335

52.Surrounding environment in learning centres is appealing	2.6564	1.02102
<i>Others</i>		
53.OUM staff are helpful and courteous	2.2005	0.87030
54.Easy to communicate with OUM staff	3.2099	0.92892
55.Complaints are effectively handled	2.5033	1.00167
56.Latest information on OUM are easily available on-line	2.2791	0.96762
57.Learner knows where and who to contact in OUM to resolve problem	2.5395	1.02928

Appendix 2
Perceptions of Service Quality

Item	Mean	Standard Deviation
<i>Mode of Learning</i>		
1. Personalized learning is convenient	2.2351	0.89336
2. Blended mode of learning is flexible	2.1472	0.73644
3. Blended mode of learning is convenient	2.2119	0.77122
4. Blended mode of learning is encouraging and motivating	2.2722	0.77066
5. Blended mode of learning is effective	2.3048	0.80040
<i>Tutor and Pedagogy</i>		
6. Tutors method of teaching is innovative and effective	2.1732	0.76630
7. Tutors are helpful and encourage learners to learn	1.9598	0.74608
8. Tutorial sessions motivate learners to read the modules	2.1788	0.81568
9. Tutors communicate well with learners	2.0050	0.72837
10. On-line learning sessions are effective	2.6533	1.04004
11. Learner-tutor relationship is good	1.8908	0.71143
12. Tutors provided effective feedback on learners performance (assignment & quiz)	1.9933	0.74875
13. Tutors are well prepared in handling the tutorial sessions	2.0259	0.78062
14. Tutors give appropriate academic advice and motivation	1.9983	0.76972
<i>Modules</i>		
15. Modules are well written	2.3612	0.92838
16. Quality of modules are high	2.5176	0.96925

17.Content of modules are clear and interesting	2.4728	0.94836
18.Style of writing in module is clear and effective	2.4325	0.92994
19.Modules are delivered on time	2.3040	0.98379
<i>Learner Services</i>		
20.Learner Service Centre is efficient	2.5238	0.94168
21.Sudents affair department is helpful and effective	2.4452	0.90372
22.Administrators in learning centres are helpful and effective	2.2926	0.85304
23.Communication with OUM is easily accessible and effective	2.7044	1.01565
24.Enquiries and problems are well responded and resolved	2.6271	0.97229
25.LMS services are efficient and effective	2.6348	1.04444
26.Digital library services are effective to learners	2.9262	0.99559
27.Services of Examination Unit are efficient	2.4891	0.88119
28.OUM technology services (internet, LMS, e-mail, etc) is easily accessible and efficient	2.6980	1.07614
29.Management of registry (registration and timetables) services is efficient	2.4079	0.90188
30.Services offered by Faculty is good	2.2867	0.81201
<i>Program Issues</i>		
31.Program structure are flexible	2.1754	0.73560
32.Program contents are interesting	2.2197	0.76022
33.Academic programs offer wide range of specialization	2.1689	0.76201

34.Entry requirement is minimal and flexible	2.0603	0.71954
35.Number of modules per semester is not burdensome	2.2107	0.86247
36.Method of assessment is fair	2.1781	0.75160
37.Rigor of assessment method assures quality of program	2.1393	0.70077
38.Management of examination sessions are efficient	2.2060	0.79884
39.Management of program registration is flexible and efficient	2.2921	0.83127
40.Duration of study program is reasonable	2.3342	0.89876
41.Information on study program is available	2.2383	0.79910
<i>Cost/Fees</i>		
42.Tuition fees charged is reasonable	2.5248	1.01709
43.Mode of payment of fees is convenient	2.2242	0.84672
44.Mode of payment is flexible	2.2361	0.85178
45.Services by finance department is efficient	2.4276	0.91637
<i>Physical</i>		
46.Classroom facilities in learning centres are excellent	2.6424	1.04935
47.Computer facilities in learning centres are adequate	3.0955	1.11648
48.Administrator's office is attractive	2.7053	0.98798
49.Classroom layout and physical appearance is appealing	2.7410	1.02711
50.Facilities for students activities are adequate	2.9288	1.07634

51. Library facilities is attractive and adequate	3.1393	1.04752
52. Surrounding environment in learning centres is appealing	2.6854	1.02469
<i>Others</i>		
53. OUM staff are helpful and courteous	2.2592	0.85797
54. Easy to communicate with OUM staff	2.3629	0.92321
55. Complaints are effectively handled	2.5286	0.98283
56. Latest information on OUM are easily available on-line	2.3992	0.97481
57. Learner knows where and who to contact in OUM to resolve problem	2.5989	1.01888