

Prioritizing services and facilities in a higher education institution

Importance-satisfaction quadrant and gap analyses

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Abstract

Purpose – The purpose of this paper is to identify the “selling points” for Open University Malaysia (OUM) to be used in its marketing activities and the “critical points” that OUM should focus on for further improvements in providing its services to its students. These selling and critical points are derived from the analysis of the importance and satisfaction data collected from OUM’s postgraduate students.

Design/methodology/approach – This study employs a two-dimensional, i.e., Importance-Satisfaction Survey which consists of 47 items, categorized under eight dimensions. Items are phrased as positive statements and students are asked to indicate how important it is to them using a seven-point Likert scale ranging from not at all important (1) to very important (7). They are then asked to rate their level of satisfaction, using the same scale from very dissatisfied (1) to very satisfied (7). A total of 709 postgraduate students responses were used in this study. A multiple regression analysis was conducted to explain the relationship between the dependent variable, overall satisfaction and eight independent variables. The “selling points” and “critical points” are determined by combining the quadrant and gap analyses. The “selling point” items are the high-importance-high-satisfaction (HIHS) items with relatively small gap scores while the “critical points” are those in the high-importance-low-satisfaction and HIHS quadrants with relatively large gap scores.

Findings – The overall results of the Importance-Satisfaction Survey showed that the postgraduate students are generally satisfied with OUM’s programmes and services. The multiple regression analysis of all dimensions against overall satisfaction as the dependent variable showed that the five dimensions of facilitator, curriculum, faculty, support services and learning centre account for 75.7 per cent of the variation in overall satisfaction. The selling points include: the learning management system (MyVLE), online registration, course contents, modules and facilitators. The critical points include those related to facilitator interaction and feedback, students’ sense of connectedness with the faculty staff, timely responses to enquiries and complaints and accessibility to digital library and learning centre staff.

Practical implications – Importance-Satisfaction Surveys can be used to help an institution to identify the services and facilities that can be marketed and also those that need to be improved in order to better meet its students’ expectations.

Originality/value – While many similar studies had been conducted elsewhere, this study had identified the “selling points” and “critical points” which are unique to OUM. In addition, most previous studies were focused on conventional institutions, carried out in many different countries with differing learning environments and cultures.

Keywords Gap analysis, Importance-satisfaction quadrant analysis, Selling points and critical points
Paper type Research paper



1. Introduction

Quality has become an important subject of discussion among Higher Education Institutions (HEIs), and has been extensively studied in recent years. Just like any other organizations, to be sustainable, HEIs need to continually attract new students and retain existing ones. To achieve that, HEIs need to determine first, which services students prefer and second, whether they are satisfied with them. In this context, the Importance-Satisfaction Surveys are very useful to HEIs. This paper reports on the results of one such survey conducted on the postgraduate students at the Open University Malaysia (OUM), the first and premier open and distance learning (ODL) university in Malaysia.

Competition in the ODL segment of the education industry in Malaysia is currently very stiff, particularly when traditional public universities decided to actively join the foray due to the move by the Ministry of Higher Education to encourage universities to generate their own revenue. Added to that, the Malaysian private HEIs are very dynamic, competitive and innovative. Thus, the working adult population of Malaysia who wish to further their higher education have far more choices of HEIs. Furthermore, since they have to pay the tuition fees out of their own pockets, they tend to be more demanding in terms of what they are getting. They demand high-quality services and excellent programmes from the HEIs they choose.

In The tenth Malaysian Plan (2011-2015) greater focus is given to the human capital development as an economic imperative as a foundation in transforming Malaysia from a middle income to a high-income nation. This transition requires huge efforts in improving the overall effectiveness of the university. One of the ways this can be achieved is through the enhancement of the quality of higher education services as perceived by the students themselves. Indeed, the idea of setting up a rating system for Malaysian Higher Education Institutions (SETARA) was mooted then, in the tenth Malaysian Plan. This rating system is intended to produce a uniform and objective assessment to deliver greater transparency and enhanced pressure on performance to raise the overall quality of the education system (http://planipolis.iiep.unesco.org/upload/Malaysia/Malaysia_10th_Master_Plan_Chapter5.pdf).

Since 2010, all HEIs in Malaysia are required to take part in this rating system. A total of 25 criteria, including questions on student satisfaction, were captured through 82 indicators (University World News – Malaysia, 2009). Thus, OUM continues the administration of the Importance-Satisfaction survey on to its students, in its quest for a direct feedback from students for institutional improvement as well as getting the evidence of how satisfied students are with their learning experience.

2. Literature review

The higher education sector today is becoming increasingly competitive, and universities that do not strive to produce the best of programmes and services and the best of graduates will be disadvantaged and will not sustain in the education industry. Thus it is crucial for HEIs to understand the service quality factors which will allow them to attract, retain and develop strong relationships with students. This is more important for ODL institutions, in which their qualification has always been assumed to be less superior than that obtained from the conventional HEIs. “A number of studies among the HEIs have shown that service quality leads to student satisfaction (Long *et al.*, 2014; Alnaser and Al-Alak, 2012; Bergamo *et al.*, 2012; Nettet and Helgesen, 2009 as cited in Santhi and Ganesh, 2015). “However, the literature review appears to indicate that there is a lack of consensus on the definition of satisfaction as a concept

with service quality and generally there is no clear accepted instrument for customer satisfaction in HEI" (Danjuma and Rasli, 2012; Alnaser and Al-Alak, 2012; as cited in Santhi and Ganesh, 2015) <http://article.sapub.org/10.5923.c.economics.201501.31.html>.

There are some examples of studies on student satisfaction which have highlighted different categories of factors that have an influence on overall satisfaction. Alves and Raposo (2009) developed a satisfaction construct using seven variables which include: programme effectiveness, quality of lecturers and teaching, student learning, assessment and feedback, learning resources, use of technology and facilities/quality of social life. The results showed that the construct satisfaction, when measured through the variables used presents a reliability coefficient of 93 per cent. Across a UK university's service offerings, Douglas *et al.* (2006) used the service-product bundle approach in his study. The factors include: lecture and tutorial facilities, ancillary facilities, the facilitating goods, the explicit service and the implicit service. They found that the most important aspects of a university's service offerings were associated with the core service, i.e., the lecture, including the attainment of knowledge, class notes and materials and classroom delivery. Similarly, Wilkins *et al.* (2012) employed a survey questionnaire to investigate student perceptions of study at international branch campuses in the United Arab Emirates. Using a seven-dimension questionnaire, which includes: programme effectiveness, quality of lecturers and teaching, student learning, assessment and feedback, learning resources, use of technology and facilities/social life, they found that students were largely satisfied. The authors claimed that "the findings refute many of the criticisms of international branch campuses in the literature, regarding quality, political or ideological issues". Miliszewska and Sztendur (2010) undertook a similar study that investigated student views on various dimensions of Australian transnational education programmes in South East Asia. The dimensions covered include: curriculum and instruction design, lecturers and teaching, use of technology, evaluation and assessment, programme management and organizational support. The findings were intended to help HEI managers in reviewing existing transnational provision and planning new transnational ventures and programmes (cited in Wilkins *et al.*, 2012). Even though the dimensions used by institutions in the satisfaction studies overlapped; the interpretation of the results vary according to the objectives and the context of the institutions.

Locally, in Malaysia, research into students' satisfaction has also been conducted extensively and many of the HEIs have developed their own instruments for such studies. OUM is unique in that it is an ODL institution. Being an ODL institution, where its students are separated from the teachers and staff, it is even more critical to identify the factors that contribute to student satisfaction. Adult students who make up a large majority of OUM students are far more diverse and most of the institution's services are provided online. In such a situation, getting student feedback is critical; the valuable information on the strengths and weaknesses obtained from the study will enable OUM to improve its services to better meet its students' needs.

3. Objective of study

The objective of this study is to examine the postgraduate students' satisfaction with the services provided by OUM in the context of how important those services are to them. A quadrant analysis (see Figure 1) was carried out to determine the areas of strengths and weaknesses, besides taking note of the low-priority areas and also areas in which OUM need to re-allocate resources to areas of high importance to its students.

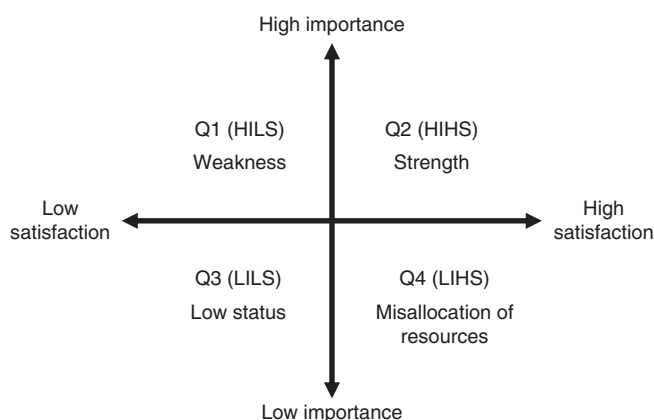


Figure 1. Importance-satisfaction (IS) quadrants

For the purpose of clarity and total coverage of all the items covered in this study, a quadrant inventory list was developed, instead of using the two-dimensional graph, as is normally done. Cluttering of the numerous items is unavoidable. The gap between the importance and satisfaction scores for the dimensions and items were also calculated. The combined analysis using both the quadrant and gap scores is intended to identify items that represent the institution’s “selling points”, to be used in marketing purposes and promotional activities and its “critical points”, i.e., items that require the institution’s urgent attention and action.

4. Research methodology

The major contribution of this study will be the combined use of quadrant analysis and gap analysis in specifically identifying the “selling points” and “critical points” for the institution. The gap for each factor/item is calculated by taking the difference between the importance and satisfaction scores. The rationale for combining both quadrant and gap analyses is as follows. The items that fall under the high-importance-high-satisfaction (HIHS) quadrant which represent the “strengths” may not necessarily be ideal for promotion purposes, as their gaps may be large. Thus “selling point” items are those that are in the HIHS but with relatively small gaps. For the “critical points”, it includes items under the high-importance-low-satisfaction (HILS) (weakness) quadrant, plus items in the HIHS (strengths) quadrant with relatively large gaps. In ensuring a comprehensive review of the status of all services, the items in the “low status” quadrant as well as those in the “misallocation of resources” quadrant will also need to be reviewed. It does not mean that items which are accorded low-importance should be ignored; inadequate attention to these items may result in the students switching over if improved products or services are offered by a competitor. For clarity, instead of using the graphical representation of the quadrants, an inventory list is developed. Decisions are made first based on the importance score of each item, followed by its position in the quadrant and then its gap score.

4.1 Research instrument

A quantitative survey was designed and developed at OUM to elicit students’ importance for services (using a seven-point importance scale with 1 = not important at all and 7 = most important) and their perceived satisfaction with the services also on a

seven-point scale (1 = not at all satisfied and 7 = most satisfied). The questionnaire was structured to seek students' opinions on eight major dimensions which include: learning centres, curriculum, facilitators, faculty, support services, finance, outreach and life/career plan with 47 items.

This instrument used was developed internally by OUM research team based on the literature review of articles on students' satisfaction (www.ruffalonl.com/documents/shared/Papers_and_Research/2014/2014_NationalStudentSatisfactionReport.pdf). However, some of the dimensions as well as many of the items have been modified to suit the environment, work and learning culture at OUM. Factor analysis was run to determine the grouping of the 47 items. The importance/satisfaction of the 47 items was run using principal component analysis. The tests showed that the items were valid based on the eight dimensions covered in this study. In addition, the Cronbach α which measures the reliability was also determined for each dimension. The instrument was found to be valid and reliable.

4.2 The sample

The active postgraduate students in the January 2014 semester form the population for this survey. Stratified random sampling technique was used to ensure good representation of students by programmes, year of study and location (learning centre). The hard copies of the questionnaires were administered to students in the various learning centres, after their tutorial sessions. The completed questionnaires were collected by the facilitators after the tutorial session. They were then collated and sent by courier to the Centre for Student Management where data were entered, cleaned and analysed using Statistical Package for Social Sciences Version 22. The results presented below are based on 709 postgraduate data out of a total of 1,604 respondents.

4.3 The questionnaire

Part I attempts to collect the demographic data of the students. This information includes: gender; age; ethnic group; programme of study; cumulative grade-point average (CGPA) and learning centre.

Part II seeks to collect information on the importance placed by students and their perceived level of satisfaction on each of the 47 items.

Part III endeavours to collect information on the overall satisfaction of students with regard to the 47 items in the questionnaire.

4.4 Analysis of data

Three types of analyses were performed: the regression analysis; the quadrant analysis; and the gap analysis.

4.4.1 Regression analysis. A multiple regression analysis was used to explain the relationship between the dependent variable of overall satisfaction and the following independent variables:

- (1) Learning centre;
- (2) Curriculum;
- (3) Facilitators;
- (4) Faculty;
- (5) Support services;

- (6) Finance;
- (7) Outreach; and
- (8) Life/career plan.

4.4.2 *Quadrant analysis.* An Importance-Satisfaction Matrix was developed based on four quadrants which are defined as follows (see Figure 1).

Quadrant 1: HILS for items with a mean importance score more than 6.15 and a mean satisfaction score of less than 5.67.

Quadrant 2: HIHS for items with a mean importance score more than 6.15 and a mean satisfaction score of greater than 5.67.

Quadrant 3: low-importance low-satisfaction (LILS) for items with a mean importance score less than 6.15 and a mean satisfaction score of less than 5.67.

Quadrant 4: low-importance high-satisfaction (LIHS) for items with a mean importance score less than 6.15 and a mean satisfaction score of more than 5.67.

The 47 service-related items were grouped into eight service dimensions. Each item was then placed in the appropriate quadrants based on the individual importance and satisfaction means with reference to the overall importance (6.15) and overall satisfaction mean (5.67) scores. For example, items with high-mean importance scores (above 6.15) but low-mean satisfaction scores (less than 5.67) were placed in Quadrant 1 (HILS) while those with high-mean importance scores (above 6.15) and high-mean satisfaction scores (above 5.67) were placed in Quadrant 2 (HIHS), and so on. This was repeated for all items. The result is a distribution of items by quadrant which is presented here in the form of an Importance-Satisfaction Inventory (Table V).

4.4.3 *Gap analysis*

- (1) The gap score for each item was calculated based on the difference between the importance and the satisfaction score. A list of the gap scores for each item is included in Table V.
- (2) A paired *t*-test was performed on all dimensions to determine if the difference in the gap (importance mean – satisfaction mean) was significant.

5. Results and discussions

5.1 *Respondents demography*

The total number of respondents for this study was 709. As shown in Table I, the percentage of female students (69.2 per cent) far exceeds that of the male students (30.8 per cent), and this is consistent with the general ratio of female to male of the general postgraduate student population. This study involved respondents from 15 programmes of which the top three were Master of Education, Masters in Occupational Health and Risk Management and Masters in Management, while the rest were each smaller than 6 per cent. The majority of the respondents are in the 26-45 age range (82.6 per cent), and the lowest was from the over 56 years of age group (0.9 per cent). Respondents were from 19 learning centres, and the highest percentage was from Johor, Sarawak and Kuala Lumpur. In terms of the respondents' performance, 47.1 per cent did not answer as they were new students and have not completed their first semester. 18.7 per cent had achieved an unsatisfactory CGPA of 2.0-3.0 (fail); while 34.1 per cent had scored a CGPA of 3.0-4.0.

This study uses eight dimensions of curriculum, facilitators, faculty, finance, learning centre, life and career plan, outreach and support services.

	Frequency	%		Frequency	%
<i>Sex</i>			<i>Age</i>		
Male	201	30.8	18-25	13	2.1
Female	452	69.2	26-35	234	38.0
			36-45	275	44.6
			46-55	85	13.8
			56 and above	9	1.5
<i>Programmes</i>			<i>Current CGPA</i>		
MBA	38	25.3	0.00-1.00		
MM	16	10.7	1.01-2.00	3	0.5
MHRM	9	6.0	2.00-3.00	108	18.2
MEd	34	22.7	3.01-4.00	202	34.1
MESSt	2	1.3	New students	279	47.1
MIT	1	0.7			
MOSHRM	23	15.3			
MIS-CI	3	2.0			
MPM	3	2.0			
MN	1	0.7			
MITN	1	0.7			
MIST	5	3.3			
MIDT	2	1.3			
DBA	2	1.3			
EdD	10	6.7			
<i>Race</i>			<i>Learning centre</i>		
Malay	382	53.9	Johor Bahru	147	20.8
Chinese	160	22.6	Melaka	7	1.0
Indian	72	10.2	Negeri Sembilan	29	4.1
Bidayuh	8	1.1	Kuala Lumpur	80	11.3
Iban	12	1.7	Petaling Jaya	37	5.2
Melanau	9	1.3	Bangi	14	2.0
Others	3	0.4	Wangsa Maju	1	0.1
			Shah Alam	67	9.5
			Perak	4	0.6
			Greenhill	6	0.8
			Manjung	1	0.1
			Penang	16	2.3
			RECSAM	62	8.8
			Sungai Petani	24	3.4
			Pahang	28	4.0
			Terengganu	42	5.9
			Kelantan	48	6.8
			Sarawak	94	13.3
			Miri	1	0.1

Table I.
Respondents
demographic profile

5.2 Factor analysis

5.2.1 Dimension. Factor analysis was run to determine the grouping of the 47 items. The importance of the 47 items was run using principal component analysis. The Kaiser-Meyer-Olkin was 0.984 which indicates an excellent result (Kaiser, 1970). All dimensions show eigenvalues above 1.0 and factor loadings greater than 0.4. This shows that the items were valid based on the eight dimensions covered in this study.

In addition, the Cronbach α was also determined for each dimension and the result is shown in Table II. These two results indicate that the items based on the eight dimensions were valid and reliable.

5.2.1.1 Regression analysis. According to the independent sample *t*-test and using a 95 per cent level of confidence, a variable with a *p*-value equal to or less than 0.05 implies it is significant in explaining the change in the dependent variable. The multi-regression analysis (Table III) showed that five of the eight independent variables (dimensions) had a significant positive influence on the dependent variable of overall student satisfaction. The five dimensions (those with *) explained 75.7 per cent of the variance (R^2) in the overall satisfaction, and this implies that the items and dimension used in this study were well chosen and found to be very relevant in influencing student satisfaction. This result also implies that, in its attempt to better meet students expectations, OUM ought to give higher priority to the high-gap items related to facilitator, support services and curriculum, and to a lesser extent on learning centre and faculty, as indicated by the impact (based on the beta values) of these dimensions on overall satisfaction.

5.2.1.2 The quadrant analysis. Using the scale of 1-7 for both importance and satisfaction, the origin (mid-point) used for the importance-satisfaction matrix is 4:4. Based on this origin, all eight dimensions means were found to be in the HHHS quadrant.

However, for the purpose of institutional improvements, it is useful to identify among all the dimensions, which of those that need to be further improved. Using the

Dimensions: independent variables (item numbers are given in the parentheses)	No. of items	Cronbach α values	
		Importance	Satisfaction
Learning centre (1,6,9,16,23,29,35)	7	0.92	0.87
Curriculum (2,10, 17,24,30)	5	0.91	0.89
Facilitators (3,11,18,25,32,36,39,41)	8	0.94	0.93
Finance (4,12,19,26,33)	5	0.88	0.86
Support service (5,13,20,27,31,34,37,43,45)	9	0.94	0.92
Faculty (38,40,42,44,46,47)	6	0.96	0.86
Outreach (7,14,21,28)	4	0.88	0.83
Life/career (8,15,22)	3	0.88	0.85
Desired range of Cronbach α	Above 0.70 (Nunnally, 1978)		

Table II.
Reliability test using cronbach α values

Independent variable	<i>B</i>	β	<i>t</i>	Sig.
(Constant)	0.732		6.129	0.000
Learning centre*	0.156	0.158	3.208	0.001
Curriculum*	0.186	0.177	3.872	0.000
Facilitators*	0.262	0.269	5.466	0.000
Finance	-0.001	-0.001	-0.018	0.986
Support services*	0.216	0.227	3.491	0.001
Faculty*	0.095	0.110	2.251	0.025
Outreach	0.041	0.042	0.903	0.367
Life/career planning	-0.059	-0.066	-1.540	0.124

Notes: Dependent variable: overall satisfaction; $R^2 = 75.7$ per cent

Table III.
Results of regression analysis

overall dimension means of 6.15(importance) and 5.67 (satisfaction), each of the dimensions was assigned to a quadrant based on its individual importance-satisfaction means. A dimension with a higher than 6.15 importance score and a higher than 5.67 satisfaction score is assigned to a HIHS, (keep up the good work) quadrant, while that with higher importance (> 6.15) and lower satisfaction (< 5.67) score is assigned to the LILS, (concentrate here) quadrant. Based on the same procedure, the distribution of all dimensions, by quadrants are as shown in Table IV.

The postgraduate students' feedback indicated that the dimensions such as facilitator, curriculum and faculty were placed in the HIHS quadrant; these are the strengths of OUM. The rest of the dimensions are in the LILS quadrant, they are the "low priority" areas except for outreach which is in the LIHS quadrant (misallocation of resources). All dimensions in the LILS and LIHS quadrants present an opportunity for OUM to review and re-allocate resources to the high-importance dimensions.

5.2.1.3 Gap scores. The gap score for each dimension is calculated based on the formula: $\text{gap} = \text{importance} - \text{satisfaction}$ and its classifications are as follows:

- (1) 1 or more: not meeting expectation.
- (2) 0 to less than 1: meet expectation.
 - 0-0.49: satisfactorily meeting expectation; and
 - 0.50-0.99: almost meeting expectation.
- (3) Less than 0: exceeding expectation.

Based on the above formula, the gap score for each dimension was calculated and the results are shown in Table IV. A paired *t*-test was carried out and the results indicated that the gap scores for each dimension is significant at the 5 per cent confidence level. As shown in Table IV, the gap scores range from 0.43 to 0.56, and all were found to be significant (as indicated by *). Based on the classification, the services provided by OUM to its postgraduate students (by dimensions) do meet students' expectations. However, within the eight dimensions itself, and based on the gap scores, faculty and learning centres are the two dimensions that call for urgent attention.

5.2.1.4 Combined quadrant and gap analyses. The quadrant specifies the "strengths" and "weakness" dimensions. However, there may be cases where the gap scores for the strength items which are large, thus requiring further improvements. In this study, faculty is an example. Learning centre is accorded the highest gap, however, in terms of importance; it is slightly lower than that for faculty. Between the

Table IV.
The importance-
satisfaction
inventory: mean
importance-
satisfaction,
quadrant and gap
scores (postgraduate)
for dimensions

Dimension	Mean importance	Mean satisfaction	Gap	Quadrant
Facilitators	6.22	5.74	0.48*	HIHS
Curriculum	6.20	5.77	0.43*	HIHS
Faculty	6.18	5.68	0.50*	HIHS
Learning centre	6.14	5.58	0.56*	LILS
Outreach	6.13	5.68	0.45*	LIHS
Support service	6.11	5.62	0.49*	LILS
Finance	6.09	5.61	0.48*	LILS
Career/life plans	6.09	5.61	0.48*	LILS
Overall average	6.15	5.67	0.48	

two dimensions of faculty and learning centre, OUM should give higher priority to faculty in its improvement plans as it is higher in importance compared to learning centre. However, it is important to take note that, even though learning centre is low priority at the time this survey was conducted, inadequate attention to it may result in the postgraduate students switching over if improved product or service is offered by a competitor.

5.2.2 Items. 5.2.2.1 Normality test. Normality assessment is conducted using the Skewness test for every individual item. Normality of items should range between +2 and -2 as recommended by Weinberg and Abramowitz (2002, p. 278). All items were found normal in the analysis because the skewness is > 2.00 .

Table V shows the importance and satisfaction means of all the 47 items. The importance scores range from 6.00 to 6.37, with an overall mean score of 6.15, implying that to OUM postgraduate students, the services provided are important to very important. In terms of satisfaction, the scores for all the items range from 5.08 to 6.08, with an overall mean score of 5.67. This indicates that the postgraduate students are quite satisfied to satisfied with the services provided.

5.2.2.2 Quadrant analysis. Just as in the dimensions, each of the items are placed in the quadrants based on its importance and satisfaction mean values, using the overall means of 6.15 (importance) and 5.67 (satisfaction) as the reference points. The distribution of items by quadrants is summarized in the form of percentage as shown in Table VI. It is heartening to note that 20 out of the 47 items (42.6 per cent) are in the HIHS quadrant; these are the items that showcase the institutions strength. Only three items (6.4 per cent) represent the weakness areas, i.e., pinpoints areas that call for the institution's immediate action. The rest (51.0 per cent) are items of relatively low importance, some of which need to be attended to for further improvement.

5.2.2.3 Gap analysis. The gap scores for each item are as shown in Table V. The scores range from 0.29 to 1.07. Taking 0.48 as the average gap score, there are 28 items with gap scores < 0.48 and 19 items with gap scores > 0.48 . One out of the 19 items has a gap score of greater than 1.0, and the item is "Parking space in my Learning Centre is adequate". Among the 28 items with low gap scores (< 0.48), 17 are HIHS (strength) items and 11 are LILS (low priority) areas. On the other hand, within the items with high-gap scores (0.49-1.07), there were 13 LILS items, three HIHS and three HILS items. Focus will be directed towards the latter three HIHS and three HILS items.

5.2.2.4 Combined quadrant and gap analyses. In order to ascertain which of these strengths items could be realistically used for marketing purposes, the quadrant analysis was combined with the gap scores. Items in the HIHS quadrant but with very low gaps are the ones that should be used as OUM's "selling points". With reference to Table V, the "selling point" items are those with gaps below the overall mean gap of 0.48.

The selling point items and the gap score (in parenthesis) are:

- (1) MyVLE is easily accessible (0.29);
- (2) University provide students with online registration every semester (0.29);
- (3) The contents of the courses I am taking are valuable to me (0.37);
- (4) Facilitators are easily approachable (0.40);
- (5) Facilitators are knowledgeable in their fields (0.42); and
- (6) Modules or study guides are of good quality (0.43).

Item no.	Items	Mean importance	Mean satisfaction	Gap	Quadrant
13)	MyVLE is easily accessible	6.37	6.08	0.29	HIHS
11)	Facilitators are knowledgeable in their fields	6.30	5.89	0.42	HIHS
25)	Facilitators are easily approachable	6.29	5.90	0.40	HIHS
24)	Modules or study guides are of good quality	6.29	5.86	0.43	HIHS
2)	The contents of the courses I am taking are valuable to me	6.29	5.92	0.37	HIHS
28)	University provide students with online registration every semester	6.28	5.98	0.29	HIHS
23)	My learning centre is conducive for learning	6.27	5.79	0.48	HIHS
3)	The quality of teaching I receive in my classes is good	6.26	5.78	0.48	HIHS
36)	Facilitators/tutors provide timely and constructive feedback to students	6.26	5.70	0.56	HIHS
32)	Facilitators/tutors serve as my academic advisors/counsellors	6.25	5.74	0.52	HIHS
34)	Digital library is easily accessible	6.25	5.68	0.56	HIHS
18)	Facilitators/tutors are concerned about my academic progress	6.23	5.80	0.43	HIHS
38)	Faculties' administrative staff are caring and helpful	6.22	5.75	0.47	HIHS
1)	The learning centre staff are caring and helpful	6.21	5.78	0.43	HIHS
29)	The security of my learning centre is well maintained	6.20	5.72	0.49	HIHS
30)	Course assessment are appropriate	6.20	5.71	0.49	HIHS
47)	Faculties' programme coordinators are helpful in providing academic support	6.19	5.70	0.49	HIHS
10)	Major requirements of the courses are clear and reasonable	6.18	5.73	0.44	HIHS
33)	Information about students' financial accounts is easily available	6.16	5.72	0.44	HIHS
46)	Faculties' provides adequate administrative and academic guidelines for students	6.15	5.71	0.45	HIHS
39)	Facilitators/tutors interaction with students through online forum is helpful	6.18	5.66	0.53	HILS
40)	Faculties' staff deal with my enquiries and complaints without delay	6.20	5.63	0.57	HILS
9)	The learning centre staff are easily accessible via telephone or e-mail	6.16	5.65	0.51	HILS
35)	Parking space in my learning centre is adequate	6.14	5.08	1.07	LILS
42)	Faculties' provides timely feedback on student progress in a course	6.13	5.65	0.48	LILS
8)	I receive the help I need to apply my academic knowledge gained in OUM to my career	6.13	5.70	0.43	LIHS
19)	Policy on payment of fees is flexible	6.13	5.72	0.41	LIHS
20)	Student's handbook provides helpful information on rules, regulations and policies	6.12	5.68	0.44	LIHS
21)	I have been able to access general IT resources when I needed to	6.12	5.64	0.48	LILS
14)	The library resources are good enough for my needs.	6.12	5.59	0.53	LILS
45)	Students disciplinary procedures are fair	6.11	5.71	0.40	LIHS
31)	Electronic Customer Relationship Management (eCRM) is efficient in resolving students enquiries and complaints	6.10	5.59	0.51	LILS
26)	Various fee discounts to students are available	6.10	5.51	0.59	LILS
22)	Mentors are available to guide my career and life goals	6.10	5.60	0.50	LILS
17)	There is a good variety of courses provided in the programme I am taking	6.09	5.69	0.39	LIHS
4)	The fees I have to pay for my studies are reasonable	6.08	5.63	0.45	LILS
27)	Physical library provides adequate reading materials for reference	6.08	5.45	0.63	LILS
16)	My enquiries and complaints are dealt with by the learning centre staff without delay	6.07	5.57	0.50	LILS
41)	There is active participation in the online forum among facilitators/tutors and students	6.05	5.51	0.54	LILS

Table V.
The importance-satisfaction inventory: mean importance-satisfaction, quadrant and gap scores (postgraduate) – items

(continued)

Item no.	Items	Mean importance	Mean satisfaction	Gap	Quadrant
15)	There are adequate services available to help me decide upon a career	6.04	5.52	0.51	LILS
43)	Orientation for new students (Bengkel Kemahiran Belajar) is useful	6.03	5.52	0.51	LILS
6)	Information about events happening in my learning centre is easily available	6.03	5.57	0.46	LILS
37)	Welfare fund is available for needy students	6.03	5.46	0.57	LILS
44)	Faculties' provides academic counselling to students	6.02	5.61	0.41	LILS
7)	Admission staff provide personalized attention prior to my enrolment to OUM	6.02	5.52	0.50	LILS
12)	Staff in the Finance Department are easily accessible via telephone/e-mail	6.02	5.55	0.47	LILS
5)	Academic advising/counselling services adequately meet the needs of students	6.00	5.50	0.50	LILS
	Overall	6.15	5.67	0.48	

Table V.

	HIHS	HILS	LILS	LILS
Total items = 47	20	3	5	19
Percentage	42.6	6.4	10.6	40.4

Table VI.
Distribution of items by the 4 IS quadrants

Note: Distribution of items (per cent) by quadrants (postgraduate)

However, the following three items in this category HIHS are cause for concern as their gap scores are greater than the mean gap of 0.48 (Table V). The critical point items are:

- (1) Facilitators/tutors serve as my academic advisors/counsellors (0.52);
- (2) Facilitators provide timely and constructive feedback to students (0.56); and
- (3) Digital library is easily accessible (0.56).

Still keeping to the high-importance items, there are only three items in the HILS quadrant with gap scores greater than the mean gap of 0.48. The additional "critical points" items include:

- (1) Faculties' staff deal with my enquiries and complaints without delay (0.57);
- (2) Facilitators interaction with students through online forum is helpful (0.53); and
- (3) The learning centre staff are easily accessible via telephone or e-mail (0.51).

There are, however, 13 items that are accorded low importance LILS but with gap scores greater than 0.48. The highest gap score is in the item: Parking space in my Learning Centre is adequate (1.07). Though it is of low importance in the context of all the 47 items covered in this study, OUM needs to take some bold initiatives to resolve this perennial problem. It is a critical issue to students; and any decision to reduce the problem will definitely make OUM students more satisfied. In as far as the other low-importance items with gap scores greater than 0.48, improvements are still needed. Inadequate attention to these items may result in the students switching over if improved product or service is offered by other institutions, ODL or otherwise.

Another possibility is for OUM to re-structure, review and re-assess with a view to re-allocating resources to items which are considered highly important to the postgraduate students.

6. Conclusion and recommendation

Overall, OUM has done well in providing the important services to its postgraduate students and at a high-satisfaction level. This is evident in the ratings accorded to all items in terms of their importance and satisfaction, which were all above 4.0.

Notwithstanding the above, to enable the institution to identify its “selling points” and “critical points”, the overall importance and satisfaction means were used as the origins of the importance-satisfaction grid. This has given rise to the various “selling point” and “critical point” items as outlined in the results and discussion section.

The multiple regression analysis showed that five out of the eight dimensions explained 75.7 per cent of the variance in the overall satisfaction. This result showed that academic related dimensions such as facilitator, support services and curriculum are most crucial to students, besides the faculty and learning centres. The quadrant and gap analysis identified the following items as OUM's critical points: facilitator interaction and feedback, students' sense of connectedness with the staff, timely responses to enquiries and complaints and accessibility to digital library and staff of learning centres. Its selling points include: MyVLE (OUM's Learning Management System), online registration, course contents, facilitators who are knowledgeable and approachable and modules or study guides are of good quality

OUM should be fully aware that if these needs are positively addressed, students are more likely to stay on and be successful in achieving their educational goals. Successful students upon their graduation are most likely to spread the good word-of-mouth to others to register with OUM for their further studies.

An Importance-Satisfaction Survey such as this is indeed very useful in helping the institution to meet the needs of its students. However, it needs to be administered on a regular and uniform basis. It is thus recommended that OUM implements a system-wide student satisfaction survey as this will allow the institution to have a common database to evaluate experiences at different times. In addition, it will also enable similar surveys to be conducted at different institutions, through research collaborations. In this context, OUM has already established institutional research collaboration with four ASEAN ODL institutions known as the OU5, in identifying areas of strengths and challenges while allowing institutions to learn from each other. Another advantage of using a system-wide student satisfaction survey is that it allows institutions to track goals, values and changing perspectives related to students' performance. It is also worth to consider integrating this system with data from the registrar's office, as this will provide rich data sets for various attrition studies.

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Further reading

- National Student Satisfaction and Priorities Report (2014), available at: www.ruffalonl.com/documents/shared/Papers_and_Research/2014/2014_NationalStudentSatisfactionReport.pdf (accessed 26 April 2016).

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