International Review of Business Research Papers
Vol. 9. No. 6. November 2013 Issue. Pp. 55 – 67

Winning in the Market Place by Defining Higher Education Quality Dimensions: A UAE Example

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In order to survive tough market conditions, private universities are forced to be more marketing oriented to secure funds coming from enrollments. Thus, service-quality elements of universities become highly important in winning the students at the marketplace. In the literature, little consensus has been found on how to measure higher-education quality. The purpose of this study is to identify the critical quality dimensions of higher education. A primary research is conducted to measure the service quality criteria of a private university in the UAE. A total of 183 usable student questionnaires are collected and 8 dimensions are defined by using factor analysis to explain the university's service-quality criteria. The results indicated that in-campus experience, learning support and accessibility, administrative aspects, instructor quality, academic quality and schedule flexibility are positively related with student satisfaction and a special attention to be given to improve these elements to gain competitive advantage.

JEL Codes: Marketing

1. Introduction

With a dependence on tuition fees for viability, higher-education institutions have started to become business like service providers, focusing on attracting students and applying the measures to understand, meet, and exceed their needs, just as private companies do for their customers (Gruber et al., 2010). Students' opinions become a very valuable resource for setting certain standards while developing and improving higher-education services. Where students are oversupplied with higher education and exposed to different levels of quality in terms of location, accreditation, staff, faculty quality, library resources, and usage of technology, students become picky with regard to their institution choices. Although there are many articles in the literature that measure service satisfaction (Munteanu et al., 2010; Aracil, 2009; Gruber et al., 2010) and quality (Srikanthan & Dalrymple, 2003; Sultan & Who, 2010; Abdullah, 2005) in higher education, there is no universal measure available for either of these two elements. Also, the determinants of higher-education standards differ among countries and markets. Therefore an institution-specific measurement is used to measure higher-education quality and student satisfaction. This study is different from the previous studies, as it addresses specific issues for a higher-education institution to be able to react to decreasing enrollments. The researcher conducted the study to suggest a practical implication by using a targeted and relevant construct to a specific university. Unlike the previous research, this study is designed to discover the attributes of higher education as quality criteria in the Middle Eastern context and to find the effect of those attributes on customer satisfaction.

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With an increasing number of private higher-education institutions in the UAE, universities are beginning to face stronger competition. In the last decade, two education-free zones have been established as purpose built-free zones to house educational institutions offering degree programs. Today, there are five free zones in Dubai that contain higher-education institutions across several different sectors.

Development of those unique free zones has not only improved the development of the higher-education system of the UAE but has also increased competition and begun to force universities to compete in attracting the students.

Per the Higher-Education Landscape Report (HELR) published by the Knowledge and Human-Development Authority (KHDA), as of 2011 there are 52 licensed higher-education institutions offering international programs to over 43,000 students in Dubai. In 2011, 41% of the students were enrolled in 31 institutions in the Free Zones, 41% of the students were enrolled in 18 institutions outside the Free Zones, and 18% of the students were enrolled in Federal Institutions. Out of the 52 institutions in Dubai, there are three federal institutions whose tuitions are subsidized by the government (MOHE, 2012; KHDA, 2012). The remaining private institutions in the market are competing for student enrollments and funds in the promising-but-tough Dubai student market.

The sample university in this research is located outside of the free zone, and is planning to move to the free-zone area in 2015. The researcher aims to provide practical insights for university managers to utilize when deciding what to focus on with regard to quality criteria in order to win in the marketplace.

The originality of this paper relies on two aspects. First, the item construct was generated in the service-management context. For a higher-education institution, service winners, service losers, and service qualifiers (Hill, 1989; Fitzsimmons & Fitzsimmons, 2011) are identified by the students to determine the important quality criteria to win in the marketplace. Second, despite the fact that higher-education studies are conducted in different country setups, including the UK, Europe, and the Far East, there are not many studies that take place in the Middle East. This paper attempts to fill this gap by focusing on a UAE university as a case example.

The paper is designed as follows: First, the literature review on higher education as a service, service quality and student satisfaction, and winning in the marketplace is completed. Then the methodology explains how the items are constructed and which method should be followed to find the quality criteria for a small-scale university. The empirical results are discussed in the analysis section. The paper concludes with a summary of findings and suggestions for further research.

2. Literature Review

2.1 Service Quality and Student Satisfaction in Higher Education

Oldfield and Baron (2000) consider higher education to be a pure service. Higher education is considered part of the service industry, as the institutions' focus is to provide quality-learning experiences to students.

Hennig-Thurau et al. (2001) classify educational services under the category of services marketing and note that educational services differ from other professional services, as

educational services play a major role in the students' lives. Students require tremendous motivation and intellectual skills to attain their goals. Further, educational services have several service characteristics: they are predominately intangible, perishable, heterogeneous, and the professor's teaching efforts are simultaneously "produced" and "consumed" with both professor and student being part of the teaching experience (Shank et al., 1995).

Universities are under pressure to provide a unique learning experience to students, as competition has expanded by not only increasing the number of players in the education market, but also by increasing the number of virtual-learning options of higher education (Yeo, 2008; Gapp & Fisher 2006; O'Neill & Palmer, 2004). Service quality in education becomes very important in retaining the market share and number of students. Higher-education institutions have to consider not only the skills and abilities of their graduates but also how their students feel about their educational experience (Munteanu et. al., 2010).

A study by Nachum (1996) examines professional services in terms of performance and considers employees' quality, creativity, reputation, client service-provider relations, institution age, size, scope, internationalization, and organizational structure as independent variables when explaining the competitiveness of the institutions.

Service-quality literature in education is not only associated with teacher-student participation, but also details the physical, institutional, and psychological aspects of higher education (Yeo, 2008; Li & Kaye, 1998). As per those studies, the service quality pertains to the environment, corporate image, and interaction amongst people. Yeo (2008) for instance, indicates three main aspects—i.e., customer focus, course design and delivery, and support services in a higher-education institution. Sultan and Wong (2012) find that information is more statistically significant than past experience and that service quality is the result of trust, satisfaction, and image.

There are several researches referring to quality standards in higher education (Jackson, 1998; Yeo, 2008; Laila et al., 2011). Yeo (2008) suggests that students' expectations to be managed ensure the quality of learning. Laila et al. (2011) reflect upon quality standards in higher education in comparison to ISO 9001, a generic quality standard, vs. QAA Code of Practice, a UK Quality Assurance Agency code of practice. In the literature, three variables are rated as being the most important to prospective students: course, location, and reputation (Moogan et al., 2001; Price et al., 2003). Although there are many higher-education quality measures in the literature for different regions, there is a lack of universally accepted quality measurements for the Middle East. This study aims to solve the problem of the enrollment decrease in higher education by tailoring the measurement to a specific higher-education institution in the UAE.

2.2 Winning in the Market Place

Order-winning criteria terminology is used in the literature first by Terry Hill (1989) and is associated with manufacturing strategy. Later, the concept is extended to the service context by Fitzsimmons and Fitzsimmons (2011). Winning the customers in the marketplace depends upon order winners, qualifiers, and order losers' attributes of products or services that influence the purchase decisions of customers (Hill, 1989). Nachum (1996) considers service winners and losers as survival and level-of-

performance measures and seeks explanations for the relative competitive position of advertising agencies in the international market. It is important to distinguish between the criteria that win orders in the market place and those that qualify the product or service to be there. Service qualifiers are to be taken seriously; a certain level must be attained on the competitive dimension, as defined by other market players. Service winners are the competitive dimensions used by customers to make the final choice among competitors. Service losers are the failures at the delivery level, which are important and below the expected level. As a competitive dimension, these failures need to be attended by companies as a priority. As a distinct feature from the other researches in the literature, this study uses the higher-education service winners, losers, and qualifiers concept to determine and identify the important institution-selection criteria of the students.

2.3 Research Questions Hypothesis

The research questions of the study are specified below:

1. What are the critical quality dimensions in higher education?
2. Do those criteria have any effect on student satisfaction?

These questions are addressed by formulating the following research hypotheses:

1. H_0 = The critical quality criteria are unidimensional for higher education.
2. H_0 = There is no dependency between student satisfaction and higher-education dimensions.

3. Methodology

The overall aim of this research is to define the quality criteria for a higher-education institution that must be considered in winning the students in the marketplace.

The study is carried out in two phases. In Phase One, qualitative research is applied to find out the critical-quality attributes in a higher-education institution. In spring 2012, the context of Fitzsimons and Fitzsimmons' (2011) "Winning in the Marketplace" was applied in a small-scale private university in the UAE with a student population of 650. This approach is considered to be an original contribution to the methodology in creating the question pool and in building up the construct. As a class exercise, 42 management students were asked to provide two examples for each winning, qualifying, and losing attribute for the university. These service attributes are considered the most important quality determinants in the selection of a higher-education provider. By applying content analysis, a total of 47 attributes are listed as basis-of-quality criteria when selecting a higher-education institution.

By using the quality criteria emerged from the data collected from the students, a questionnaire is developed containing performance criteria in university selection and demographic information about the respondent. The construct is measured by 47 statements. Each statement is operationalized on a five-point likert-type scale, with a score of 5 indicating that the respondent is totally satisfied, and a score of 1 indicating not satisfied. In the questionnaire, student satisfaction is also measured by using a five-point scale, 5 being totally satisfied, and 1 being not satisfied. The initial questionnaire is evaluated for internal validity by four business faculty members in the School of

Business, and 60 questionnaires are collected as a pilot study, which resulted in the need of minor format revision.

In fall 2012, questionnaires were randomly distributed in different class levels over a week period. The instructors distributed 350 survey papers to the students who wished to participate to the study. A total of 183 usable questionnaires, which represent 28% of the total population, were returned by the students. Even though 5–10 questionnaires are advised to be collected per item, a minimum of 100 observations are accepted as adequate for factor analysis (Netemeyer et al., 2003; Kleine, 1997). Therefore, the 183 observations are found to be suitable to continue the analysis. An exploratory factor analysis is applied (Hair et al., 2003; Netemeyer et al., 2003; Green & Salkind, 2011) as the most suitable method to find the dimensions of a structure. Scree plot is analyzed to test hypothesis 1. Further, a multi-varied linear-regression analysis is conducted to validate hypothesis 2. An SPSS 20 statistical package was used for the analysis.

4. Data Analysis /Results

4.1 Factor Analysis

Factor analysis is utilized to addresses the problem of analyzing the structure of the interrelationships (correlations) among a large number of variables (47 items) by defining a set of common underlying dimensions. With factor analysis, the separate dimensions of the structure are identified, and the variables are determined to explain each dimension. Once each dimension and explanation of each variable is determined, the two primary uses of factor analysis—summarization and data reduction—can be achieved (Hair et al., 2003). Table 4.1 indicates the higher-education quality criterion in the case of the university.

Table 4.1: Higher education quality construct

Criterion Descriptions	Mean rate
International accreditation of the university	4.1173
Availability of short semester	3.9553
Online registration availability	3.9444
IT supported learning availability	3.9333
Availability of Master program	3.8870
Availability of evening classes	3.8771
Accessibility of the university	3.8101
Online add and drop availability	3.8101
Success rate	3.7765
Safe environment	3.7654
Education quality	3.7389
Central location of the university	3.7293
Availability of English program	3.7072
Registration department	3.6833
IT departments' competency	3.6723
Teaching methods	3.6556
Flexible/Suitable class timing	3.6517
Instructor/faculty reputation	3.6333
Administration / management	3.6278
Number of students in a class	3.6099
Book qualification/quality	3.5966
Instructors' knowledge competency	3.5587
Reputation of the university	3.5056
Internship services	3.5028
Future opportunities/career advancement opportunity	3.4888
Faculties/instructors qualification	3.4667
Effective communication	3.4375
Ranking of the university	3.4302
Duration of lectures	3.4222
Availability of majors	3.4011

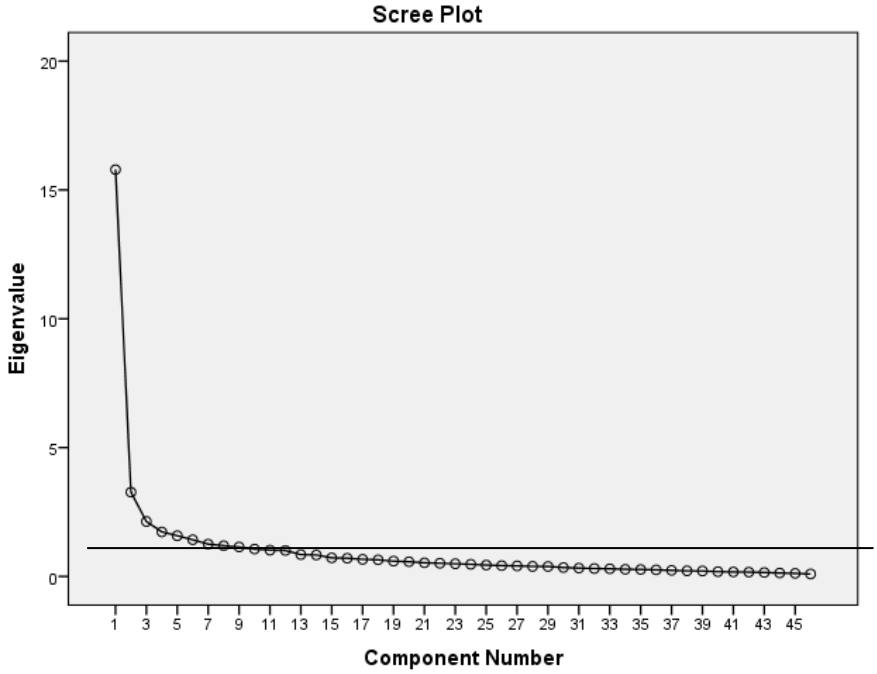
Criterion Descriptions *continues…*	Mean rate
Provide job opportunities for students	3.3989
Student advising	3.3864
Classroom facilities/equipment	3.2333
Classroom quality	3.2291
Student services	3.2167
Library quality	3.2099
Student community in the university	3.1073
Financing facility	3.0782
Student activities	3.0226
Word of Mouth	2.9944
Attendance flexibility	2.9777
Scholarship from university	2.9096
Course Price	2.8056
Cafeteria	2.7232
Building Layouts of the university	2.7017
Appropriate campus	2.5556
Parking availability	2.4917

The analysis is applied only to performance measures, as service performance gives a realistic evaluation of the services criteria. A Kolmogorov-Smirnov test confirmed the normal distribution of the variables. The dimensionality of the 47 items from the higher-education critical-criteria measure is analyzed using exploratory factor analysis (EFA). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.899, and Bartlett's Test of Sphericity is significant at a $p<0.01$ level, indicating the sample is suitable for procedures of factor analysis. Three criteria are used to determine the

number of factors to rotate: a priori hypothesis that the measure is unidimensional, the scree test, and the interpretability-of-the-factor solution.

The scree plot in Figure 4.1 indicates that our initial hypothesis of unidimensionality is incorrect. The first hypothesis is rejected—i.e., H0 = the critical quality criteria is unidimensional for higher education.

Figure 4.1: Scree plot



Based on the scree plot, 12 factors are rotated by using varimax rotation (Green & Salkind, 2011; Hair et al., 2003). A total of 12 factors explain 71% of the total variance. Factors with eigenvalues greater than 1.0 and factor loadings equal or greater than ±.5 are retained in the measure.

Further, two single-item factors and two item factors with low-reliability measures (Cronbach Alfa < .7) were eliminated from the scale. Cronbach's Alfa values of the remaining eight factors are greater than 0.70, which is considered significant for social research (Nunnally, 1978). The dimensions of higher education are analyzed through factor scores. Table 4.2 shows the results of the EFA, reliability test, and KMO measure-of-sampling adequacy.

Table 4.2: Exploratory factor analysis, reliability tests and other test results

	Factors							
Quality Criteria	1	2	3	4	5	6	7	8
1. In-campus experience/infrastructure								
Building Layouts	.749							
Parking availability	.733							
Classroom facilities/equipment	.726							
Classroom quality	.675							
Appropriate campus	.580							
Attendance flexibility	.577							
Library quality	.544							
Student activities	.509							
2. Learning support and accessibility								
Central location		.771						
Availability of English program		.661						
Accessibility		.654						
IT supported learning availability		.571						
IT competency		.569						
Teaching methods		.500						
3. Administrative aspects								
Online registration			.740					
Online add and drop			.664					
Administration / management			.647					
Registration department			.645					
4. Instructor quality								
Instructor competency				.757				
Instructor/faculty reputation				.736				
Faculties/instructors qualification				.696				
5. Placement ability								
Future opportunities					.732			
Provide job opportunities for students					.720			
Internship services					.604			
6. Academic quality								
Education quality						.713		
Success rate						.684		
International accreditation of the university						.676		
Reputation of the university						.571		
7. Schedule flexibility								
Availability of short semester							.747	
Availability of evening classes							.742	
Flexible/Suitable class timing							.622	
8. Support services								
Cafeteria								.617
Book qualification								.594
Effective communication								.589
Student advising								.535
Cronbach's Alpha	**.881**	**.870**	**.828**	**.871**	**.815**	**.776**	**.798**	**.731**
% of Variance	**10.7**	**8.2**	**6.9**	**6.7**	**6.7**	**5.8**	**5.7**	**5.6**
Bartlett's Test of Sphericity	**χ^2= 4804.1, df=1081 sig. <0.001**							
KMO	**.899**							

Through the factor analysis, eight factors containing a total of 35 items are identified for higher-education quality. The construct validity is obtained by sharing the factor result table with five business faculty members for a review and name suggestion for each factor. The higher-education dimensions are explained as below:

Factor 1 has high loadings (high loading refers to greater than .50) for eight variables with mainly infrastructure-related items: building layouts, parking availability, classroom facilities/equipment, classroom quality, appropriate campus, library quality, and attendance flexibility. Hence, this factor may be labeled as “infrastructure/in-campus

experience." The reliability measure Alpha Cronbach = .881 indicates a high level of internal consistency among these eight items. This is important quality criteria for the higher-education selection.

Factor 2 contains six items mainly related to being in a central location: accessibility to the institution, availability of an English program, IT-supported learning availability, IT competency, and teaching methods that are referred to as learning support and accessibility. All items can be labeled as "learning support and accessibility." Alpha Cronbach = .887 indicates a high level of internal consistency among these six items.

Factor 3 is characterized by four variables regarding online registration: online add and drop, administration/management, and registration department are all under the nonacademic administrative management of the university. Therefore it is labeled as "administrative aspects." Alpha Cronbach = .828 indicates a high level of internal consistency among these four items.

Factor 4 is represented by three items related to instructors and faculties' capabilities. This dimension includes knowledge competency, reputation, and qualification of the instructors and therefore is labeled as "instructor quality." Again, internal consistency is high for these three items, with Alpha Cronbach = .871.

Factor 5 is related to the student-placement ability of the university and is measured by three items. This dimension includes internship services and the university's ability to provide jobs and future opportunities to students for their career advancement. Hence, the factor is named "placement ability." Alpha Cronbach = .815, indicating a high level of internal consistency among these three items.

Factor 6 is loaded with four variables and it is related to academic competency of the university. This dimension includes the education quality, international accreditation of the university, success (graduation) rate, and reputation of the university. Hence, it is labelled "academic quality." Alpha Cronbach = .776, indicating a high level of internal consistency among these four items.

Factor 7 includes flexible class timing, availability of evening classes, and also short semesters. These variables are related to flexibility of the class schedule, hence the dimension is named "schedule flexibility." Alpha Cronbach = .798, which indicates a high level of internal consistency among these three items.

Factor 8 is loaded with four items, including cafeteria, textbook quality, effective communication (between student and faculty), and student-advising services. Hence, the dimension is labelled as "support services."

In order to validate the remaining hypotheses of the research, linear regression analysis is conducted.

4.2 Regression Model

In phase two, a linear regression analysis is conducted to assess the effect of the eight quality factor scores (independent variable) on student satisfaction (dependent variable). The independent variables included in-campus experience, learning support and accessibility, administrative aspects, instructor quality, placement ability, academic

quality, schedule flexibility, and support services. Student satisfaction was utilized as dependent variable.

The regression model is formulated as:

$$Y_{(i,j)} = \beta_0 + \beta_1 X_1 + \ldots\ldots \beta_j X_j + \ldots + \beta 8\, X_8 + e$$

Where,

Y_{1j}= student satisfaction
X_1= in-campus experience
X_2= learning support and accessibility
X_3= administrative aspects
X_4= instructor quality
X_5= placement ability
X_6= academic quality
X_7= schedule flexibility
X_8= support services

Table 4.3 shows the results of the analysis-of-regression model. The mean of the dimensions' performances is also indicated in the table. The mean scores reflect the measurements between 1 and 5, in which 1 is not satisfied, and 5 is totally satisfied.

Table 4.3: Regression Analysis

Dimensions (Y) →	Student Satisfaction			Mean rate
Factors (X)↓	Beta	t	Sig.	1- 5
Factor1 In-campus experience	**.469**	**8.194**	**.000**	2.93
Factor2 Learning support and accessibility	**.250**	**4.373**	**.000**	3.75
Factor3 Administrative aspects	**.217**	**3.796**	**.000**	3.77
Factor4 Instructor quality	**.204**	**3.569**	**.000**	3.55
Factor5 Placement ability	.077	1.349	.179	3.46
Factor6 Academic quality	**.176**	**3.072**	**.002**	3.78
Factor7 Flexible schedule	**.139**	**2.433**	**.016**	3.82
Factor8 Support Services	.102	1.775	.078	3.29
Adjusted R^2	**.413**			

Satisfaction levels of the students are positively related to six out of the eight factors. Factor 1 (in-campus experience), Factor 2 (learning support and accessibility) Factor 3 (administrative aspects), Factor 4 (instructor quality), Factor 6 (academic quality) and Factor 7 (flexible schedule) are found to be statistically highly significant (P<.05). This means that if Factor 1 increases by 1 unit, the level of student satisfaction increases by 0.47 of a unit. Similarly, if Factor 2 increases by 1 unit, student satisfaction increases by .25 of a unit. The rest of the effects for Factors 3, 4, 6, and 7 are indicated in the above Table 4.3. Factor 5 (placement ability) and Factor 8 (support services) are found to be insignificant. This result rejects the null hypothesis 2—i.e., H_0 = there is no dependency between student satisfaction and higher-education dimensions. Hypothesis 2 was tested, and it was found that there is a dependency. Adjusted R^2 was 0.413 in the satisfaction model.

Since the survey method is used, a level of 0.413 was considered relatively moderate in explaining the dependability of various dimensions in student satisfaction (41% of student satisfaction is explained by those eight various dimensions). The findings on

linear regression analysis suggest that the H_0 hypothesis for student satisfaction is rejected.

4.3 Demographic Variables

A one-way analysis of variance is conducted to evaluate the relationship between student satisfaction and demographic features of the students. The dependent variable is student satisfaction, and the independent variable is gender. The ANOVA is conducted and is found not significant (F= .146, P>.05) for gender and customer satisfaction, meaning there is no significant difference in overall satisfaction among males and females. Also, the relationship between student satisfaction and student majors is tested by using ANOVA. Student satisfaction remains as the dependent variable. Independent variables include eight majors. The results indicate that there is no significant relationship among majors and student satisfaction (F=1.270, p>.05), meaning no significant difference exists in overall satisfaction among majors.

5. Summary and Conclusions

As private universities are facing intense competition and financial constraints, attracting the students becomes a vital activity. Especially in the UAE, an increasing number of higher-education institutions force universities to consider their operations once more. Increased student satisfaction would help institutions to win in the marketplace.

The purpose of this study is to define the important quality dimensions that play roles in students' higher education choices and to find out if these dimensions have an effect on student satisfaction. The study took place in 2012, in a small-scale university in the UAE.

This study is unique in that it pinpoints the factors that will add to student satisfaction in a private university in which a study of this kind has never been conducted before. Therefore, policy makers in this university must take into account these dimensions and their importance in maintaining a high student-satisfaction rate. Subsequently, a higher student-satisfaction rate would lead to increasing the rate of retention, which is another issue from which the university suffers.

As higher-education satisfaction and quality studies in the Middle East are sparse, this study intends to contribute to the knowledge base by providing a unique case example. The study also tries to contribute to the methodology by using a different approach in university quality-criterion determination by operationalizing the context of service winners, qualifiers, and losers.

The empirical evidence from this study suggests that for this case, university service quality can be categorized into eight major areas, namely: in-campus experience/infrastructure, learning support and accessibility, administrative aspects, instructor quality, placement ability, academic quality, schedule flexibility, and support services. The research also suggests that six of these categories have a positive significant relationship with student satisfaction.

There are several management implications of the findings. Higher-education managers should pay particular and urgent attention to the infrastructure/in-campus experience. This dimension is considered to be a service loser, as the performance mean is

relatively low (2.9/5.0). If the university improves the infrastructure/ in-campus–related experiences of the students, customer satisfaction would increase significantly. Learning support and accessibility to the university resources have a positive significant impact on student satisfaction. The University needs to maintain and enhance these aspects. The administration department is the gate keeper of the university. Registration and admission as well as other managerial and administrative aspects are related to this dimension. Management may increase the quality performance in this area to improve student satisfaction. Instructor quality also has a positive significant effect on student satisfaction. Hence, instructor selection and training would be a critical factor for university management. Although the impacts of academic quality and flexible timing are relatively low, they both have positive effects on satisfaction. Especially, flexible timing is an important criterion for education quality, as almost 58% of the students are working students. More flexible class times would ensure the satisfaction of the students.

Although priority should be given to the critical dimensions that have a significant impact on customer satisfaction, other critical dimensions are also to be considered. The study used data from one university rather than a number of universities. This enables the results to be generalized only for the case university. The situations may be different for different universities in different zones. Similar research can also be conducted in different universities with larger sample sizes to test these dimensions.

An extension of the study may include other factors than the ones discussed in this paper, a larger sample from different universities, and other measures such as student loyalty and student recommendations to other students to join the university.

Acknowledgement

The researcher acknowledges the help of the eminent scholar Prof. Mohamed Youssef of the University of Dubai, who has helped me with the methodology and the interpretation of the results. This enhanced the quality of my paper a great deal.

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