

Investigating CTQs for International Students: A Malaysian Case

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Abstract

A review of related literature indicates limited research on critical factors that have impact on perception of higher education services in the context of Asia Pacific countries. As such, one of the aims of this study is to gain deeper insight and developing constructs and categorization regarding critical to quality (CTQs) for international students based on interview data. Consequently, the purpose of this article is to identify the service "factors" that postgraduate students use in their evaluation of service quality within the context of Malaysian universities.

Key Words: International students, critical to quality, SERVQUAL, Malaysia

Introduction

In today's competitive academic environment where students have many options available to them, factors of service quality that are significant from the view of students should be seriously investigated. It has been found that when making the tentative decision of choosing a university, "the student will look for the evidence of service quality", validating its importance in the university's function (Donaldson and McNicholas, 2004, p.349). The first step for delivering quality service is recognizing customer expectations. Zeithaml *et al.* (1990) quoted that knowing what customers expect is the first and probably the most significant step in delivering quality. In line with this thinking, clarifying students' expectations is fundamental for delivering quality services within the higher education context (Yeo, 2008).

The main aim of this article is to present the Critical-to-Quality (CTQs) for international students studying in Malaysian public universities. In the other words, this article seek to present answers to this question: What are the underlying factors of service quality for postgraduate students?

CTQs have been defined as the specific needs of customers from a service or product that the customer considers important. In other words, CTQs are quantifiable features whose functioning standards must be convened to satisfy customer requisites (Yang, 2008). According to Yang (2008), recognizing CTQs are significant for developing services that customers really want.

Literature Review

Extant literature provides little about identification of critical aspects of the service delivery in higher education. Angel *et al.* (2008) conducted a research in UK universities and found 20 factors used by postgraduates in their quality evaluations. They suggested that evaluation of quality must be conducted from the students perspective. By using a sequential exploratory research, Lagrosen *et al.* (2004) examined the dimensions which constitute quality in higher education and then compared these with the dimensions of quality that have been developed in general service quality research. They identified 11 factors and then compared these factors with dimensions reported by Zeithaml *et al.* (1990) and Gronroos (2007).

Academics have also been at variance in the decision to use SERVQUAL or SERVPERF in a higher education setting, and which factors, or combines factors, most applicable to describe its evaluation in that context. Both SERVQUAL and SERVPERF have been cited extensively. Although both measures are not flawless and have been criticized by many, their contributions to our understanding of service quality are significant. SERVPERF (Service Performance, was developed primarily by Cronin and Taylor (1992)), but recent academic endeavors have focused on the merits of SERVQUAL (Ham and Hayduk, 2003; Markovic, 2006; Ruby, 1996; Yang, 2008). Proponents of SERVQUAL such as Jain and Gupta (2004) believed that SERVPERF was incapable of diagnosing shortfalls in the desired levels of service quality, as a result of the absence of the "disconfirmation" approach. Oliver (1981), Churchill and Suprenant (1982) and Bearden and Teel (1983) emphasized the advantage of SERVQUAL based on the disconfirmation notion, i.e., the mental process consumers use to compare what is expected with what is actually received. Based on a study of higher education institutions in three countries by Lee (2007), the SERVQUAL instrument is rated as better than the SERVPERF instrument for measuring service quality in cross-cultural contexts.

In addition, when applied to multinational contexts, an incorporation of the impact from the cultural differences seems to explain the variations of service quality more accurately (Donthu and Yoo, 1998). Based on the aforementioned arguments, the SERVQUAL was selected to compare criterions emerged from this study.

SERVQUAL, developed by Parasuraman et al. (1988) was selected to compare with the CTQs. SERVQUAL was developed in 1985, by a series of studies by Parasuraman *et al.* (1985) for evaluating organizational performance, rather than financial or operational measures, to answer the question “How do customers see us?” It has five generic dimensions or factors and are stated as follows (van Iwaarden *et al.* , 2003):

- (1) *Tangibles* (including physical facilities, equipment and appearance of personnel).
- (2) *Reliability* (including ability to perform the promised service dependably and accurately).
- (3) *Responsiveness* (including willingness to help customers and provide prompt service).
- (4) *Assurance* (including competence, courtesy, credibility, security, knowledge and courtesy of employees as well as ability to inspire trust and confidence).
- (5) *Empathy* (including access, communication, and understanding the customer as well as caring and individualized attention that the firm provides to its customers).

Methodology

Yang (2008) argues that much effort must be spent to capture what customers really want. The study utilized qualitative convergent in-depth interviews approach. This approach is useful for identifying the service features considered important to postgraduate students when rating their service expectations and experiences. The advantage of using a qualitative paradigm is its ability to generate theory and gain a background understanding of social phenomena (Bryman, 2008).

In this line, international postgraduate students from Universiti Teknologi Malaysia (UTM) were interviewed using a semi-structured interview technique. Interviewees were selected by age, gender, country of origin and level of study (master or PhD). According to Yang (2008), generally 9 to 20 in depth interviews are enough to gain the most insight from the participants. In this line, a quota sample of 15 interviewees was selected to identify the service attributes considered important to postgraduate students when rating their service expectations and experiences. Table I exhibits background of interviewees. As Table I exhibits, majority of interviewees were male students (80%). Also, all of interviewees had Asian culture background. About two third of participants had less than 30 years old, indicating their youthfulness. More than half of interviewees were master students. In next step, the transcribed data was analyzed using the qualitative approach. Content analysis was mainly used to retrieve constructs for service quality, and then these constructs were compared with SERVQUAL dimensions offered by Parasuraman et al. (1988).

One of the techniques that have been used frequently in service research to explore service research issues through interview is the Critical Incident Technique (CIT). CIT is a method that relies on a set of procedures to collect, content analyze, and classify observations of human behavior (Gremler, 2004). A critical incident usually is expressed as one that makes a significant contribution to a movement or occurrence (Bitner *et al.*, 1990; Grove and Fisk, 1997). In service research, while critical incidents can be gathered in various ways, the usual approach is to ask respondents to tell a story about an experience they have had (Gremler, 2004). Once the scenarios have been collected, content analyses of the stories occur. In this stage, two tasks have to be undertaken: the decision about a general framework of reference to describe the incidents and the inductive development of main and subcategories. In performing these tasks, the researcher thought about the general goal of the study, the veracity of classifying the incidents, and the relation to formerly developed classification schemes in this area (Neuhaus, 1996).

For detaining needs of the students, interview tool was selected. General questions like “Why did you choose to go to this university?” and “If you were admitted at one of the universities in your country, would you attend?”, as well as the critical incidents in choosing your university produced more engaged discussion than the one elicited by close-ended or structured questions. At the end, students were asked the questions on a checklist about their background. Information contained in the scenarios is carefully examined to recognize data categories that explain the incidents (Grove and Fisk, 1997; Stauss and Hentschel, 1992). The main categories of classification can either be inferred from theoretical models or formed on the basis of inductive interpretation (Stauss and Hentschel, 1992). Generally, the goal of content analysis is a classification system to provide insights regarding the frequency and patterns of factors that affect the phenomenon of interest. A non-mathematical procedure was applied to produce the findings from the interviews, along with some limited observations, and documents pertaining to post graduate international students' circumstances. Through a systematic collection and analyses of data the researcher constructed an inductively derived pattern of the area under study (Strauss and Corbin, 1990) which is presented through a narrative of the situation studied.

The data, in the form of transcribed interviews, were coded. The coding, which loosely followed the guidelines described by Strauss and Corbin (Strauss, 1998) separated sections of data based on responses to similar questions. Because the open ended questions asked during the interview process were mostly the same for all respondents, the answers were similar enough in many cases to draw comparisons based on the responses generated by the respondents.

Findings

The analysis of qualitative data uncovered seven constructs: education, social, supplementary services, human resource, financial issues, administration and information issues. With regards to the CTQs in human resource context, it can be respected twofold: staff and academic. In addition, the in-depth interviews elicited 12 service attributes, rated as important by the postgraduates who participated. Each of these service attributes are listed in Table II. These findings will be discussed in the following section.

Discussion

First category of CTQs that was revealed by the study was human resource. With regards to the CTQs in human resource context, it can be respected twofold: staff and academic. Regarding staff, the study revealed that the students stated issues such as helpful and respectful staff, giving accurate information and supporting students, and prompt services. These attributes can be capsulated as professional staff. This finding concurs with findings by Yeo (2008), who reported that prompt assistance by staff must be provided whenever required and training staff to be student-centered is vital for achieving long term quality.

Regarding CTQs about academics, the study exposed related issues such as good access to lecturers, qualified academic with theoretical and practical knowledge, up-to-date academic and capability of communication. This finding concurs with finding by Arambewela and Hall (2009), who reported “good access to lecturers” as one item of responsiveness, and “high standard teaching with quality lecturers” as another item of reliability of SERVQUAL in international postgraduate education context. In addition, this finding agrees with findings by Angell *et al.* (2008), who reported skilled and engaging teachers as one of the attributes of service quality in postgraduate students.

Also, the findings confirm the study by Owlia and Aspinwal (1998). According to a framework developed by Owlia and Aspinwal (1998), such factors as theoretical/practical knowledge of academics, the extent that academics are up-to-date, and proficiency of academics in teaching/communication contribute to the service quality of higher education. Interestingly this finding conforms to a proposition by Yeo (2008), who proposed that competent human resources are fundamental for offering service quality and concluded assurance of SERVQUAL in higher education context is established by availability, service and utility. For instance, he highlighted the role of theoretical/practical capability of instructors for achieving quality of educational service.

A second category of CTQs that was revealed by the study was social concerns which in turn includes related issues such that hospitality, egalitarian issues, integration activities, and religion issues. This issue is not unanticipated, because international students can be considered as immigrants, who have lost the social support of their relatives. This finding concurs with findings by Angel *et al.* (2008), who reported social meeting places and opportunities for meeting peer students, are attributes of service quality by post graduate students. Also this finding conforms to study by Yeo (2008), in which he reported that service quality in higher education out of classroom learning and social interaction involving such facilities as sports, health care centers and cafeterias are significant consideration as well. The study also confirms the studies by Dunn (2001) and Houston and Rees (1999). Dunn (2001) reported that students may face a “culture shock” given the new environment in their selected university. In addition, Houston and Rees (1999) have provided proof on adjustment troubles related to both living support and language amongst postgraduate international students.

A third category regarding CTQs uncovered by the study was educational subjects. This category had related features such as variety of library books, suitable curricula, and connection with other universities, communities of practice and providing a quiet space to study. This finding concurs with finding by Arambewela and Hall (2009), who reported “modern and adequate library facilities” as one of the items of tangibles dimension of SERVQUAL in international postgraduate education context. In addition, one of the concerns about suitable curricula that were revealed by the study was university-industry linkage. This finding concurs with reports of experts of World Bank (Jimenez, 2007), about research issues and linkage with industry. These experts reported limited opportunities to interact with international students at home or in a host country and weak university-industry linkage, as two of the challenges for building a world class higher education in Malaysian universities.

In this connection, they recommended providing opportunities for students with exposure to international experience. Furthermore, this finding conforms to a proposition by Yeo (2008), who expressed that tangibility of SERVQUAL in a higher education context can be considered as turning knowledge into appropriate knowledge. In addition, perception of variety of library books as a CTQ is concurrent with study by Angell *et al.*, (2008), on the importance of a variety of library books and facilities in perceived SQ by postgraduate students. Also, providing offices for students to study, which was revealed by some students in this study, is in concurrence with findings by Angel *et al.* (2008), who reported a quiet study area as one of the items that have an impact on perceived service quality by international postgraduate students.

The fourth category of CTQs from the perspective of post graduate international students was financial issues. It is not unanticipated to perceive that financial issues were considered critical by post graduate students, as they usually live with their families during the studying period and they must pay for the costs. The concerns in this category can be encapsulated in three items: low cost of study, award of a research grant and casual jobs. This finding concurs with Angell *et al.* (2008), who reported reasonable price for tuition fees and casual jobs as two of the important items for service quality in higher education. Also, this finding is comparable with finding by Arambewela and Hall (2009), who reported cost of living as an item impacting on satisfaction level of international post graduate students.

A fifth category regarding CTQs dimensions that was indicated by the study was a supplementary system with features such as: accommodation, transportation issues, ergonomic issues, food issues and medical services. This finding concurs with finding by Arambewela and Hall (2009), who reported “Student accommodation at a reasonable cost” as one of the items of reliability dimension of SERVQUAL in international postgraduate context. This finding also conforms with the proposition by Yeo (2008), who reported that fulfillment of learning experience through supportive facilities, systems and processes, is vital for increasing satisfaction level of the students and concluded that reliability of SERVQUAL in higher education context can be measured by availability of resources and staff response. Also this finding is comparable with findings by Arambewela and Hall (2009) about factors influencing satisfaction level of international students in Australian universities. They reported eleven expected and perceived variables, including transportation and accommodation that influence satisfaction level of international students.

Apart from the various issues discussed above, the research also uncovered medical services as a new issue which has not received adequate discussion in the present SQ literature. This issue was not unexpected because international post graduate students enter a new environment with their families, where they may be treated by new diseases. The sixth category of CTQs that was revealed by the study was information issues. The study revealed related issues such as available IT facilities, and flow of information. This finding concurs with findings by Angell (2008), who reported good computing and web facilities as one of the important items for service quality in post graduate education. Also, this finding agrees with the finding by Arambewela and Hall (2009), who reported “modern and adequate computer facilities” as one of the items of tangibles of SERVQUAL, in international postgraduate education context. It is not unanticipated that constant use of computers is one of the requirements by most post graduate students because most subjects require computer applications and analysis. Also this finding is comparable by findings by World Bank experts about higher education systems in Malaysia (Jimenez, 2007), who reported poor dissemination of information as one of the shortcomings in Malaysian universities.

Apart from the various dimensions discussed above, the research also uncovered a new dimension which has not received adequate discussion in the present SQ literature. This dimension encapsulated “Administration”, because students usually expect/perceive its items from the top management of a university. Study revealed related issues of this dimension, such as safety, bureaucracy, ranking of university and campus layout and landscape. Interestingly, these findings are consistent with findings by experts of World Bank (Jimenez, 2007). They stated that students are frequently confronted with a complex bureaucracy, for instance when they want to change courses, or for planning educational visits to various organizations. These findings also concur with finding by Arambewela (2009), who reported that comparing ranking with other universities is one of the features influencing expectations. Also, this finding is consistent with the finding by Angell *et al.* (2008), who reported safe location and attractive campus layout and appearance as two items of SQ in postgraduate education. Interestingly, Arambewela and Hall (2009) also reported safety as one of the items having an impact on international postgraduate students in Australian universities. In Table II, dimensions of SQ have been compared in terms of CTQs for post graduate students.

Table I Background of Interviewees

No.	Code of respondents	Gender	Country of origin	Degree Status	Age
1.	NATH	Female	Thailand	Master	29
2.	YIT	Male	Turkey	Master	25
3.	RAHI	Female	Iran	PhD	28
4.	EHMI	Male	Iran	Master	25
5.	INI	Male	Indonesia	PhD	41
6.	MON	Male	Nigeria	Master	29
7.	SABI	Male	Iran	PhD	36
8.	NAJI	Female	Indonesia	Master	28
9.	ZHC	Male	China	Master	25
10.	AGI	Male	Iran	PhD	26
11.	ZAIDI	Male	Iraq	Master	29
12.	ALI	Male	Iran	PhD	40
13.	YAT	Male	Turkey	Master	27
14.	FAL	Male	Libya	PhD	41
15.	EHC	Male	Iranian	Master	33

Table II Comparing SQ Dimensions in Terms of the CTQs

Dimensions retrieved	CTQs	SERVQUAL dimensions
1-Human resource	1-1: Good access to lecturers 1-2: Qualified academic with theoretical and practical knowledge 1-3: Up-to-date academic 1-4: Capability of communication 1-5: Professional staff	Responsiveness Reliability Reliability Empathy Assurance
2-Social	2-1: Egalitarian attitude by staff and academics 2-2: Free climate to practice religion ceremonies 2-3: Integration activities to share subjects 2-4: Hospitality behavior by local students	Empathy Assurance Empathy Empathy
3-Education	3-1: Variety of library books and subscribed journals 3-2: Suitable curricula to train students for international competitive 3-3: Connection with other universities 3-4: Community of practice for doing research 3-5: Providing offices for researchers to study	Tangibles Assurance Assurance Assurance Assurance
4-Financial issues	4-1: Low cost of study 4-2: Award a research grant 4-3: Causal Jobs	Reliability Assurance Assurance
5-Supplementary system	5-1: Good standard accommodation 5-2: Convenient public transportation 5-3: Restaurants offering customized food 5-4: Available standard medical services with reasonable cost 5-5: Ergonomically designed furniture	Reliability Empathy Empathy Empathy Tangibles
6-Information issues	6-1 Available IT facilities 6-2 Flow of information	Tangibles Reliability
7-Administrartion	7-1 Safety 7-2 Bureaucracy 7-3 Ranking of university 7-4 Campus layout and landscape	Assurance Reliability Assurance Tangibles

Conclusion

This research provides comprehension to the service quality factors of postgraduates in a Malaysian university. Unlike previous studies, which have focused mainly on the undergraduate segment, this research was designed to specifically target postgraduate students. Through qualitative methods 7 service attributes were identified as CTQs in the evaluation of service. Using qualitative analysis, these factors are categorized as education, social, supplementary system, human resource, financial issue, administration, and information issues.

These findings present a framework for other universities to refer for improving their service quality. This finding perhaps indicates that postgraduates see the postgraduate experience as a mean to a career, rather than the life experience opportunity often associated with undergraduate studies (Angell et al., 2008). It is suggested that service providers perform studies for uncovering CTQs periodically to better track their own students' needs. Whilst this study provides an initial step, further research is needed. It is suggested that such research concentrates specifically on postgraduate students covering a larger variety of universities to see if a consistent selection of service attributes/criteria becomes evident. Further the study should be conducted in other countries to establish the congruencies of the identified service CTQs.

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