

Evaluating Service Quality at Malaysian Public Universities: Perspective of International Students by World Geographical Regions

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Abstract— Recently, the issue of international students' perceptions on service quality offered by Malaysian public universities has been debated among practitioners and academicians. The international students may experience different educational services in the host country compared to their home country due to cultural and values differences. In addition, the existing research has reported that the perceptions of international students towards services at Malaysian public universities are only at moderate level. Thus, the aim of this research is to determine the perceptions of international students towards service quality at Malaysian public universities according to world geographical regions, namely Asia, Middle East, and Africa. This research was conducted at Malaysian public universities. An online questionnaire was utilized as a research instrument. The stratified sampling technique was applied to gather the data among international students. The descriptive and one-way ANOVA techniques were performed to analyze the data. Based on the mean results, the Asian students were more satisfied with service offered by Malaysian public universities. The one-way ANOVA analysis result revealed the perceptions of international students towards service quality experienced at Malaysian public universities is significantly different across Asia, Middle East, and Africa regions. This research has an important implication for practitioners. Knowledge concerning the concept of service quality will assist practitioners to manage the service delivery at Malaysian public universities from the international students' perspectives.

Keywords— *Service quality, service delivery, HedPERF model, higher education*

1. Introduction

In today's global knowledge economy, the internationalization of higher education is viewed as a crucial indicator for universities to obtain recognition and competitive advantage at the

international education market [1], [2]. Internationalization has brought universities into a new stage of educational system characterized by complexity, interconnectedness, and diversity [3]. Consequently, several national strategic agendas for internationalization in Malaysian higher education have been implemented, including National Higher Education Strategic Plan (NHESP), National Key Economic Area (NKEA) of Education, The Eleventh Malaysia Plan (11MP) 2016–2020, and New Economic Model. In 2011, the Ministry of Malaysia Higher Education (MoHE) has developed the Internationalization Policy for Higher Education. The policy comprises six critical elements of internationalization, including student mobility, staff mobility, academic programs, research and development, governance and autonomy, social integration, and community engagement. Nevertheless, the international student mobility is a crucial element of internationalization of higher education due to the growing numbers of global student mobility [4], [5], [6], [1], [7].

The international student is defined as an individual who leaves his or her country of origin and travels to another country for study purposes [8]. The Ministry of Higher Education aims to attract 200,000 international students to study in Malaysia by 2020 [1]. As reported in 2016, about 31,926 registered international students are actively studying at Malaysian Public Universities [9]. The international students came from almost 68 countries worldwide which can be categorized into three geographical regions, namely Asia (26%), Middle East (58%), and Africa (15%). Nevertheless, dealing with international students adds additional responsibilities and expectations to the universities. The international students may experience different educational services in the host country compared to their home country due to aspects such as cultural and languages [10], [11], [12]. In addition, the existing research has reported

that the perceptions of international students towards services at Malaysian public universities are only at moderate level [13], [14], [15], [16]. Therefore, the aim of this research is to determine the perceptions of international students towards service quality at Malaysian public universities. Interestingly, this research also investigates the perceptions of service quality among international students according to world geographical regions, namely Asia, Middle East, and Africa.

2. Literature Review

2.1 Theory underpinning the service quality phenomenon

Expectancy-Disconfirmation Paradigm (EDP) is the most widely applied theory used to assess service quality and customer satisfaction within the service context [17], [18], [19], [20]. This theory defined service quality as the discrepancy between customers' perceptions of actual service experience and their expectations of service offered.

2.2 Conceptualization and operationalization of service quality

The concept of service quality has received tremendous attention in service research since 30 years ago. Generally, service quality is defined as a customers' evaluation of an entity's overall excellence or superiority [21]. Based on EDP paradigm, SERVQUAL (service quality) scale was developed and extensively used to gauge quality attributes in multi-services settings [22], [23], [24]. SERVQUAL consists of 22 indicators representing five dimensions, namely reliability, responsiveness, assurance, empathy, and tangibles. Service quality is measured based on a gap analysis (perceptions (P) – expectations (E)). Despite its popularity, SERVQUAL has been subjected to a number of theoretical and operational criticisms [25]. Several researchers have emphasized the problems with SERVQUAL scale, including ambiguous conceptual definition, unclear theoretical justification of expectations in measuring service quality, and the redundancy of definition between service quality and satisfaction/dissatisfaction [26], [27], [28].

The operationalization of the SERVQUAL has continued to evoke discussion. [26] refuted the SERVQUAL scale and developed an alternative method of operationalizing service quality using SERVPERF (service performance) scale. According to SERVPERF, service quality is a measure based on the customers' perceptions only. Literature has supported the validity of perceptions-only measure due to its ability to produce a better

result compared to perception-expectation measure (gap analysis) [29], [30]. However, SERVQUAL and SERVPERF scales could not be replicated in the context of higher education. According to [27], [29], higher education and commercial setting are two different environments. Consequently, the attributes of these scales may not be accurate in measuring service quality in higher education. [31] affirmed that service quality dimensions vary across service type, firms, provider, industry, and even culture.

HedPERF (higher education performance) is a scale developed to measure service quality within higher education sector [32], [33]. This scale emphasizes quality delivery activities in higher education including academic and non-academic aspects from the students' standpoint. According to the HedPERF scale, service quality is conceptualized as an assessment of the total higher education service environment based on the students' experience. Service quality is measured using 41 indicators representing five dimensions, namely non-academic aspect, academic aspect, reputation, programs issue, and access. The HedPERF instrument has been empirically tested for unidimensionality, reliability, and validity using both exploratory and confirmatory factor analyses (CFA) [32]. [34] conducted a research to compare five alternative measures of service quality in higher education including service quality (SERVQUAL), importance-weighted SERVQUAL, service performance (SERVPERF), importance-weighted SERVPERF, and higher education performance (HEdPERF). The research concluded that SERVPERF and HEdPERF have the best measurement capability in higher education setting. However, HEdPERF presented a higher level of internal consistency.

3. Methodology

3.1 Population, sample and sampling technique

This research was conducted in the selected Malaysian public universities. As reported by [9], 31,926 international students had registered at Malaysian public universities. The required sample size for this research was 379 international students. The sample size determination is according to the table for determining sample size by [35]. The sample demographics indicated that 99% of international students at Malaysian public universities came from three main regions, namely Asia (26%), Middle East (58%), and Africa (15%), whereas only 1% of international students came from other regions such as Europe, European Union, Oceania, and Northern America. Table 1

presents the list country of international students categorized by three world geographical regions. In this research, the stratified sampling technique by three main world geographical regions (strata), namely Asia, Middle East, and Africa was employed to ensure that the selected elements include all international students in the population.

Table 1 The List of Countries by World Geographical Regions

(Strata) Geographical regions	Countries
Asia	Afghanistan, Azerbaijan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Japan, Kazakhstan, Korea (South), Laos, Maldives, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Tajikistan, Thailand, Timur Leste, Turkmenistan, Uzbekistan, Vietnam.
Middle East	Bahrain, Iraq, Iran (Islamic Republic of), Jordan, Kuwait, Oman, Palestine, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen.
Africa	Djibouti, Eritrea, Ethiopia, Kenya, Mauritius, Rwanda, Somalia, Tanzania (United Republic of), Uganda, Cameroon, Chad, Algeria, Egypt, Libyan Arab Jamahiriya, Morocco, Sudan, Tunisia, Botswana, South Africa, Swaziland, Zambia, Gambia, Ghana, Guinea, Mauritania, Nigeria, Senegal, Sierra Leone.

3.2 Instrumentation

In this research, the self-administered questionnaires that completed online were used as the survey instrument. The questionnaire consisted of two sections. Section I contained the statements regarding the international students' perceptions of service quality towards the service experience at the present university. This research adopted HedPERF (higher education performance) scale developed by [32]. HedPERF is a multi-dimensional scale specifically developed to capture the attributes of quality within the higher education context. HedPERF measures the quality of service delivery process in higher education from the students' perspective. 41 items extracted from the original HedPERF scale were used to measure different aspects of higher education service offering. These items were categorized into five dimensions, namely academic aspects, reputation, program issues, non-academic aspects, and access. No modification required as the items were generated and validated within the higher education context (see Appendix A). Section II contained 10 questions assessing respondent's demographic profile and other information such as gender, age, marital status, and nationality.

3.3 Data Collection

Once the list of email addresses of international students at each research university had been arranged by geographical regions, a random sample was selected using the Random Number Generator program [36]. An invitation letter was sent randomly through the selected emails. It contained a short introduction to the research, a request to participate and the hyperlink to the online questionnaire. The international students who agreed to participate in this survey were asked to click on a URL address that led them to an online survey.

3.4 Data Analysis

In this research, data gathered were analyzed using two statistical techniques. First, descriptive technique was performed to describe the data through the mean and standard deviation values. Second, the inferential statistical technique, namely ANOVA was performed to measure the perceptions of international students on service quality rendered according to three geographical regions.

4. Results

4.1 Descriptive results

The total of 381 completed questionnaires was obtained via online. The descriptive results by respondents' gender were surprising. Although there is a concern issue about lacks of male students in education landscape [20], 57.5% of the international students who participated in this survey were male and 42.5% were female. Concerning the respondents' age, 76.1% of international students who participated in the survey were 31 years old and above. The results of descriptive analysis also indicated that 58% of international students were married and 48% were single. For the purpose of representative of the population, the countries were divided into three world geographical regions namely, Asia, Middle East, and Africa. The descriptive analysis also revealed that the international students who participated in this research came from Middle Eastern region (57.3%), followed by Asia (27%) and Africa (15.7%). The international students, especially Middle East students had preferred Malaysia for tertiary education due to affordable tuition fee and lower cost living, economic and political stability, and diversity of local cultures and customs [1]. As reported by descriptive analysis, 209 of international students were currently pursuing PhD degree, while 172 were pursuing their Master's degree.

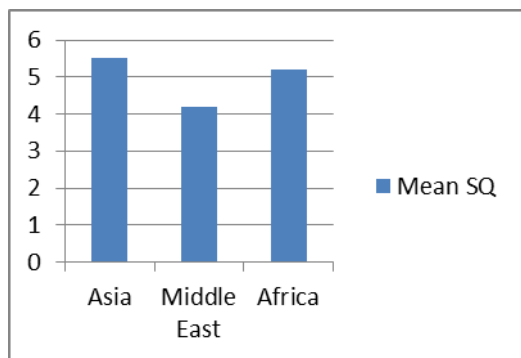


Figure 1: Service Quality (SQ) Mean According to Students' Regions

In this research, service quality was measured using HedPERF dimensions. The descriptive results as shown in Figure 1 indicated that international students from Asia region contributed the highest of mean value of service quality (5.50), followed by Africa region (5.20), and Middle East region (4.20).

4.2 Inferential statistical results

One-way ANOVA analysis was performed to investigate the comparison of mean service quality (SQ) across three international students' geographical regions. As shown in Table 2, the result of one-way ANOVA revealed the significant value, 0.000 which less 0.05 (observed sig.). This indicates that the perceptions of international students towards service quality offered by Malaysian public universities is significantly different across Asia, Middle East, and Africa regions.

Table 2: ANOVA Result

SQ					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.622	2	4.811	8.312	.000
Within Groups	218.771	378	.579		
Total	228.392	380			

Post Hoc Test – LSD multiple comparisons were performed to test the difference between each pair of means and yield a matrix where asterisks indicate significantly different group means at an alpha level of 0.05. Table 3 presents the results of Post Hoc Test –LSD multiple comparisons. The results of multiple comparisons are as follows:

- i. *There is a significant mean difference of SQ perceptions among international students from Asia and Middle East (Sig. = 0.001).*
- ii. *There is a significant mean difference of SQ perceptions among international students from Asia and Africa (Sig. = 0.000).*

- iii. *There is a significant mean difference of SQ perceptions among international students from Middle East and Asia (Sig. = 0.001).*
- iv. *There is no significant mean difference of SQ perceptions among international students from Middle East and Africa (Sig. = 0.194).*
- v. *There is a significant mean difference of SQ perceptions among international students from Africa and Asia (Sig. = 0.000).*
- vi. *There is no significant mean difference of SQ perceptions among international students from Africa and Middle East (Sig. = 0.194).*

Table 3: ANOVA - Multiple Comparisons Result

(I) GeoRegion	(J) GeoRegion	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
					Asia	Middle East
Asia	Africa	-.45229*	.12355	.000	-.6952	-.2094
Middle East	Asia	.30792*	.09096	.001	.1291	.4868
Middle East	Africa	-.14438	.11091	.194	-.3625	.0737
Africa	Asia	.45229*	.12355	.000	.2094	.6952
Africa	Middle East	.14438	.11091	.194	-.0737	.3625

* The mean difference is significant at the 0.05 level.

5. Discussion and Conclusion

This research was conducted to determine the perceptions of international students towards service quality at Malaysian public universities according to the world geographical regions, namely Asia, Africa, and Middle East. The descriptive results of mean values revealed that the Asian students were more satisfied with service offered by Malaysian public universities due to similarities in terms of cultural and values. On the other hand, students from Africa and Middle East regions were less satisfied with services rendered as compared to the students from Asia. The students from Africa and Middle East regions were reported to have higher expectations and demands with the services offered by Malaysian public universities. As stated by [15], "In the case of Malaysian universities, the Iranian students may consider Western universities in America and Europe as a general class for higher education, and benchmark Malaysian universities with these institutions which are very well established" (p. 20). The one-way ANOVA analysis result revealed that the perceptions of international students towards service quality experienced at Malaysian public universities was significantly different across three regions (Asia, Middle East and Africa). To gather an insights interpretation, Post Hoc Test-LSD multiple comparisons were

conducted to compare each pair of means of service quality perceptions across regions. The results indicated that the multiple comparisons between students' perceptions towards service quality experienced at Malaysian public universities for Asia and Middle East, as well as between Asia and Africa, were significantly different. On the other hand, the multiple comparisons between students' perceptions towards service quality experienced at Malaysian public universities for Africa and Middle East were not significantly different. This indicates that Asian students have different perceptions on service rendered at Malaysian public universities as compared to African and Middle Eastern students. This research provides an important implication for practitioners. Knowledge concerning the concept of service quality will assist practitioners to manage the service delivery at Malaysian public universities from the international students' perspectives.

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Appendix A: Measurement Items

Service Quality (SQ)

Academic Aspects (SQA)

SQ1: Academic staff has the knowledge to answer my questions relating to the course content.

SQ2: Academic staff deals with me in a caring and courteous manner.

SQ3: Academic staff is never too busy to respond to my request for assistance.

SQ4: When I have a problem, academic staff shows a sincere interest in solving it.

SQ5: Academic staff show positive attitude towards students.

SQ6: Academic staff communicates well in the classroom.

SQ7: Academic staff provides feedback about my progress.

SQ8: Academic staff allocates sufficient and convenient time for consultation.

SQ9: Academic staff is highly educated and experience in their respective field.

Reputation (SQR)

SQ10: The university has a professional appearance/image.

SQ11: The hostel facilities and equipment are adequate and necessary.

SQ12: Academic facilities are adequate and necessary.

SQ13: The university runs excellent quality programs.

SQ14: Recreational facilities are adequate and necessary.

SQ15: Class sizes are kept to minimum to allow personal attention.

SQ16: The university has an ideal location with excellent campus layout and appearance.

SQ17: The university offers highly reputable programs.

SQ18: The university's graduates are easily employable.

SQ19: Health services are adequate and necessary.

Programs Issues (SQPI)

SQ20: The university offers a wide range of programs with various specializations.

SQ21: The university offers programs with flexible syllabus and structure.

Non Academic Aspects (SQNA)

SQ22: When I have a problem, administrative staff shows a sincere interest in solving it.

SQ23: Administrative staff provides caring and individual attention.

SQ24: Inquiries/complaints are dealt with efficiently and promptly.

SQ25: Administrative staff is never too busy to respond to a request for assistance.

SQ26: Administration offices keep accurate and retrievable records.

SQ27: When the staff promises to do something by a certain time, they do so.

SQ28: The opening hours of administrative offices are personally convenient for me.

SQ29: Administrative staff show positive work attitude towards students.

SQ30: Administrative staff communicates well with students.

SQ31: Administrative staff has good knowledge of the systems/procedures.

SQ32: I feel secure and confident in my dealings with this university.

SQ33: The university provides services within reasonable/expected period.

Access (SQACC)

SQ34: Students are treated equally and with respect by the staff.

SQ35: Students are given fair amount of freedom.

SQ36: The staff respects my confidentiality when I disclosed information to them.

SQ37: The staff ensures that they are easily contacted by telephone.

SQ38: The university operates excellent counselling services.

SQ39: The university encourages and promotes the setting up of student's union.

SQ40: The university values feedback from students to improve service performance.

SQ41: The university has a standardized and simple service delivery procedure.