



OPEN ACCESS

EDITED BY

John Tremblay,
Southern New Hampshire University,
United States

REVIEWED BY

Jeffrey F. Mallert,
University of Lapland, Finland
Jenni Nieminen,
HAMK Häme University of Applied
Sciences, Finland

*CORRESPONDENCE

Kevin Fuchs
kevin.f@phuket.psu.ac.th

SPECIALTY SECTION

This article was submitted to
Higher Education,
a section of the journal
Frontiers in Education

RECEIVED 21 June 2022

ACCEPTED 03 August 2022

PUBLISHED 20 September 2022

CITATION

Fuchs K, Fangpong K and Southam A
(2022) The perceived service quality
in higher education: An empirical study
using the SERVPERF dimensions.
Front. Educ. 7:954797.
doi: 10.3389/feduc.2022.954797

COPYRIGHT

© 2022 Fuchs, Fangpong and
Southam. This is an open-access
article distributed under the terms of
the [Creative Commons Attribution
License \(CC BY\)](#). The use, distribution
or reproduction in other forums is
permitted, provided the original
author(s) and the copyright owner(s)
are credited and that the original
publication in this journal is cited, in
accordance with accepted academic
practice. No use, distribution or
reproduction is permitted which does
not comply with these terms.

RETRACTED: The perceived service quality in higher education: An empirical study using the SERVPERF dimensions

Kevin Fuchs^{1*}, Keerati Fangpong² and Ashleigh Southam³

¹Faculty of Hospitality and Tourism, Prince of Songkla University, Phuket, Thailand, ²Faculty of Management Sciences, Ubon Ratchathani University, Ubon Ratchathani, Thailand, ³Faculty of Arts and Education, Deakin University, Warrnambool, VIC, Australia

Students have become more concerned about their university selection and are more demanding of the universities they chose. In this highly competitive environment, universities need to understand these expectations. This study examines how undergraduate students perceived the service quality in their higher education institution. To answer that question, a questionnaire was developed and was distributed amongst tourism and hospitality students in Thailand. A variety of statistical techniques was used to analyze the 208 eligible responses. The results revealed that year of study is a significant factor on students reported levels of service quality, whereas gender and nationality were not. This study emphasizes the need to consider the student's year of study (e.g., age) when policymakers and educators evaluate students' needs in undergraduate tourism education. The article concludes by presenting implications for educators, policymakers, and education researchers.

KEYWORDS

service quality, tourism education, higher education, undergraduate, SERVPERF

Introduction

Ali et al. (2016) state that “determining and assessing student satisfaction based on their perception of the quality of a university's services may not be an easy task” (p. 89–90). However, it can be a helpful tool for the institution to build a stronger relationship with their existing and potential students. The higher education sector has become an increasingly competitive market with information detailing an institution's quality being readily available (Gul et al., 2019). Therefore, it is paramount that universities provide quality services and maintain a positive international reputation to attract and retain capable and valuable students (Gul et al., 2019). In order to do this, a university must undergo processes of evaluation of quality measurements to ensure its ability to compete in the education market. Students themselves are seeking quality institutions that can offer them valuable educational experiences and qualifications that are reputable (Abbas, 2020).

Students' learning is strongly linked to their contentment with their courses and the learning environment in which they find themselves (Osman and Saputra, 2019). Effective teaching is multidimensional and no single criterion is sufficient in itself (Rueda et al., 2017). It is defined by a number of characteristics, including demonstrating excitement, providing feedback to students, comprehending students' difficulties, and presenting subjects in an engaging manner. These factors result in real disparities in teaching quality, which can be measured (Alves and Raposo, 2009). The ability of organizations to create an overall positive image to prospective students through their various decision-making mechanisms, operating systems, and human resource practices is critical to the enhancement of higher education service quality (Khodayari and Khodayari, 2011).

This study aims to examine and identify students' perceived satisfaction with their educational institution. The literature provides a variety of suitable frameworks to measure service equality in higher education, however, the body of knowledge presently lacks empirical evidence as to what factors influence the perceived service quality by undergraduate hospitality and tourism students¹ in Thailand. It is the aim of this project to close this gap by achieving the following research objectives:

- (RO.1) To examine undergraduate hospitality and tourism students' perceived satisfaction with their higher education institution.
- (RO.2) To compare how socio-demographic factors (age, nationality, and gender) influence the perceived service quality amongst hospitality and tourism students.
- (RO.3) To provide a baseline for future research and identify practical implications that are useful for the administration as well as educational tourism researchers.

Literature review

Service quality measurements of universities and higher education institutions involve the measurement of factors such as organizational and methodological frameworks, reputational studies, learning environments, faculty research productivity, and student experiences and outcomes (Latif et al., 2019). Universities must frequently measure service quality in order to control and enhance the level of services provided (Latif et al., 2019). Service quality perceptions of academic institutions frequently differ based on the needs of the service's customer. In the educational setting, the customer can be seen as

the potential or existing student. A student may consider a certain class, curriculum, or university to be of high-quality, while another may regard the same experience to be ordinary (Quinn et al., 2009). To further complicate matters, industry-based quality measurements and procedures often focus on student.

Student learning is influenced more by their perceptions on the learning context than by the learning context itself (Trautwein and Bosse, 2017). As a result, the learning and teaching issue is influenced not only by how teachers plan and structure their subjects and courses, but also by how students perceive and interpret this design and structure (Rueda et al., 2017). Students' constructs of learning in tourism education are generally based on their interpretations of task needs, evaluation, and the teaching and learning environment (Fuchs, 2021a).

Higher education, like many other service industries, has had a difficult time measuring service quality. Abbas (2020) claimed that in order to preserve quality, a steady and deliberate effort is required (Abbas, 2020). People, procedures, and systems at educational institutions are dedicated to continuous training and improvement (Gupta and Kaushik, 2018; Latif et al., 2019). Therefore, continuous improvement is an important aspect to the sustainability of service quality. Measuring service quality can be categorized into five key factors that relate to teaching and learning, they are; tangibles, reliability, responsiveness, assurance, and empathy (Latif et al., 2019). Tangibles refer to aspects of a student's learning experience such as the facilities, the campus, technology and the quality of learning materials (Latif et al., 2019). It is also necessary to analyze the institutions reliability and responsiveness (Gupta and Kaushik, 2018), which is not limited to but includes items such as consistent grading criteria, precise student records, or conduct by staff.

Developing quality assurance refers communication from staff and faculty to the students and the ability of academic staff to professionally answer questions posed to them (Hwang and Choi, 2019). It also refers to the knowledge of academic personnel as well as their capacity to provide a high-quality standard of teaching (Gul et al., 2019). Another factor that reportedly has an impact on the perception of service quality is empathy (Latif et al., 2019). Empathy in the context of the student experience is defined as the ability to connect with and affirm a student's feelings, even if the academic staff are unable to resolve the problem (Gul et al., 2019). Empathy involves allowing the learner to feel heard by acknowledging their sentiments, hence improving their learning experience (Hwang and Choi, 2019; Fuchs, 2021b).

The meaning of quality education is pedagogically and developmentally sound and educates the student in becoming an active member of society (Ewell, 2010). International bodies, researchers, and stakeholders in the field of higher education tend to define the term "quality in higher education" in different settings because it is a compound concept that depends on

¹ To simplify the manuscript and improve the readability, the authors intentionally use the term *tourism students*, which in the context of the study always refers to *hospitality and tourism undergraduate students*.

many dimensions (Duque, 2021). For the assessment of quality status at the institute of higher education, certain criteria are required to be fixed first, and then the present status is required to be assessed both qualitatively and quantitatively (Seyfried and Pohlenz, 2018; Turyahikayo, 2019). Management of quality in higher education is a complex phenomenon and involves many separate units, departments and teams (Beerrens, 2018). These units and departments consist of academic units, which comprise of faculty and students, administrative units and departments that support student admission and registration, and, other support services such as laboratory and library facilities (Alzafari and Ursin, 2019).

In recent literature, Camilleri (2021) conducted a comprehensive review suggesting that institutions in higher education can use different performance indicators and metrics to evaluate their service quality in terms of “their resources, student-centered education, high-impact research, and stakeholder engagement” (p. 268). By doing so, it allows them to evaluate the perceived service quality, which is potentially altered as a result of migrating the delivery of higher education services from traditional and blended learning approaches to fully virtual and remote course delivery during the first wave of COVID-19 (Camilleri, 2021). Moreover, Borishade et al. (2021) suggest that a significant association between service quality and student loyalty exists, wherein this relationship is “mediated by student satisfaction” (p. 7). Demir et al. (2020) agree with Borishade et al. (2021) and further suggest “a direct relationship between quality and willingness to pay”

(p. 1,436), proposing that service quality does not only indicate educational reputation but also influences students’ willingness to pay different levels of tuition (Demir et al., 2020).

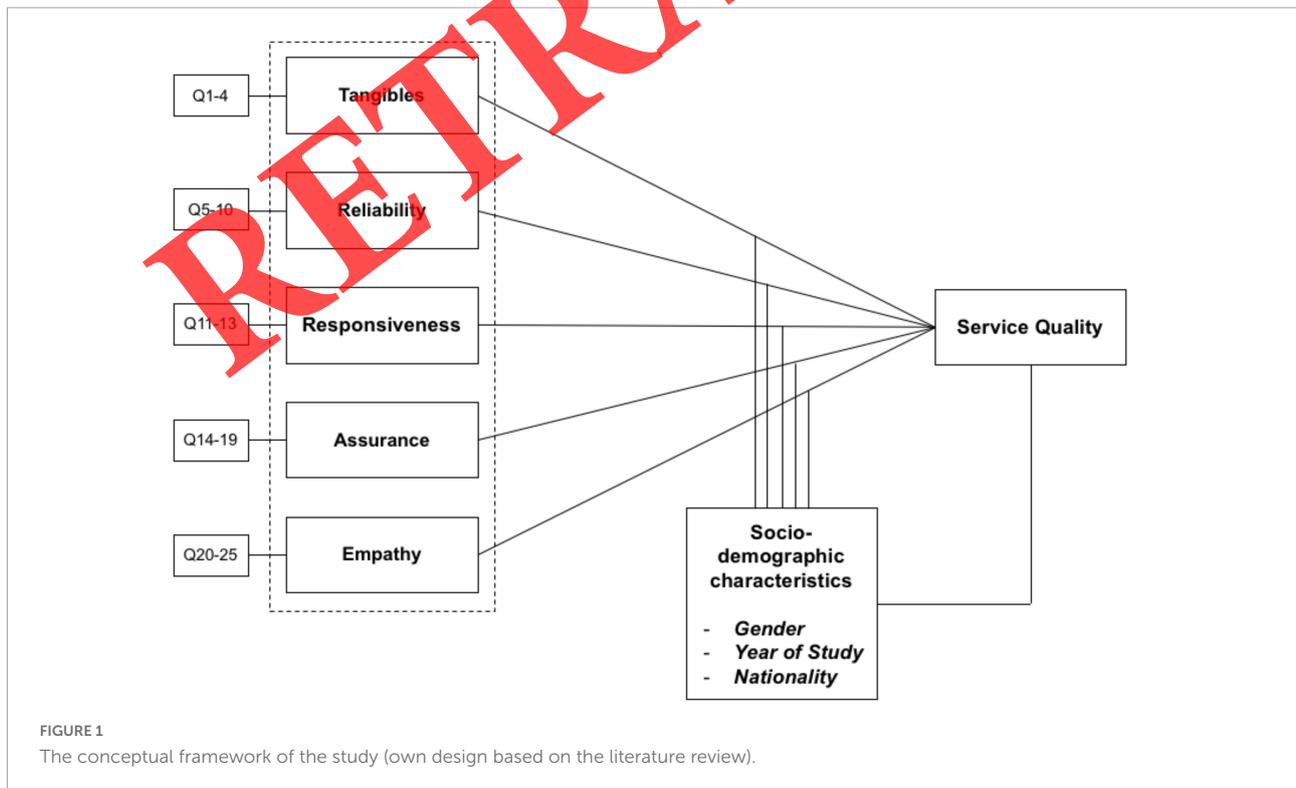
A range of studies (Ham and Hayduk, 2003; Min and Khoon, 2014; Ada et al., 2017; Gul et al., 2019; Skarpeta et al., 2019) suggest that socio-demographic characteristics such as age and gender influence the perceived service quality in higher education. It is noted that the year of study and nationality play a significant role concerning the perceived service quality in the educational context (Min and Khoon, 2014; Gul et al., 2019). However, at present, there appears to be a significant gap in the literature on how socio-demographic factors affect the way tourism students evaluate service quality. Henceforth, the last hypotheses of this study will examine the moderating role of gender, year of study, and nationality toward the perception of students on service quality in their educational institution.

The following conceptual framework guides the research project based on the reviewed literature to sufficiently answer the research objectives that were set forth (Figure 1).

Methodology

Research instrument

The most widely used technique for measuring service quality (Parasuraman et al., 1988; Leonard, 2018; Gregory, 2019) is the SERVQUAL model. The study



adopted a modified version of a SERVQUAL questionnaire (i.e., SERVPERF, the component that measures only the performance) that was previously used to measure service quality in higher education (Fuchs and Fangpong, 2021). The choice between SERVQUAL and SERVPERF metrics for service quality measurement is often subjective (Rodrigues et al., 2011). The SERVQUAL scale possesses higher diagnostic power to pinpoint areas for improvement, whereas the SERVPERF metrics are more efficiently administered (Sohail and Hasan, 2021). Silva et al. (2017) and Sydorov et al. (2020) suggest that evaluating for validity, reliability, and methodological soundness of service quality the SERVPERF scale is superior for these metrics.

The questionnaire was adapted to fit the context of this study while maintaining the original scale. The questionnaire contains twenty-five items split into five factors (Table 1). The factors *Tangibles*, *Reliability*, *Responsiveness*, *Assurance*, and *Empathy* are designed to examine the service quality. According to Heo et al. (2015) a Cronbach's Alpha value larger than 0.80 ($\alpha \geq 0.8$) suggests good internal consistency. The Cronbach's Alpha was calculated and quantified with 0.809 for the overall reliability of all 25 items. Moreover, the students were asked to report their level of satisfaction concerning the 25 statements on a forced-options scale (i.e., Likert-type scale) ranging from (1) Strongly Disagree, (2) Somewhat Disagree, (3) Neutral, (4) Somewhat Agree, and (5) Strongly Agree. Furthermore, the questionnaire was professionally translated into Thai and administered bilingual (with both language options showing simultaneously).

Lastly, the questionnaire was tested for comprehension with a limited sample ($n = 12$), though these responses from the pilot were not included in the final data analysis.

Sampling

The data was collected from tourism and hospitality students at the Faculty of Hospitality and Tourism, Prince of Songkla University in Phuket, Thailand. At the time of sampling, the participants were fulltime undergraduate degree students specializing either in Tourism Management and Hospitality Management. In addition to the 25 statements of the SERVPERF instrument, the students were asked to report their socio-demographic information relative to age, year of study, nationality, and gender (Table 2). Based on the 208 eligible responses, it can be noted that 75% ($n = 156$) of the respondents were female, whereas 25% ($n = 52$) were male. Furthermore, the age of the participants ranged from 18 to 26 years of age with a mean value of 20.45 years. Lastly, the majority of students are Thai nationals with 91% ($n = 189$), whereas the remainder is foreign degree students (9%; $n = 19$). The exact socio-demographic characteristics of the participants can be seen in Table 2. At the time of sampling, there were 460 undergraduate students enrolled at the faculty, which indicates

that the sample represents 45% of the entire student population. Moreover, the ratios with regard to gender and nationality are representative for the overall population of the faculty based on current student enrollment demographics.

Data collection and ethics

The researchers used convenience sampling to distribute paper questionnaires in the students' classrooms and arbitrarily recruit them to voluntarily participate in the study. All participants of the research were given informed consent about their rights and the scope of the study. A total of 350 questionnaires were distributed and 223 questionnaires were collected in February 2022. After discarding 15 incomplete questionnaires, a total of 208 questionnaires were included in the study, corresponding to a response rate of 59.4%

TABLE 1 The questionnaire consisting of 25 items grouped by their respective factor (adopted from Fuchs and Fangpong, 2021).

Tangibles	
1	The faculty has modern technical equipment in the classrooms for the education process
2	The building and premises of the faculty are modern and visually likeable
3	Academic staff, support staff and management of the faculty appear professional and neat
4	Teaching materials are easily available and up-to-date (e.g., brochures, student guides)
Reliability	
5	Classes are held in accordance with the schedule of lectures and without delays
6	Working hours of the Academic Office are in accordance with students' needs
7	Staff and the faculty provide support and help to students
8	Academic staff have precise records of students' activities (e.g., exam results, attendance)
9	Academic staff apply consistent grading criteria
10	Students are informed about the realization of extracurricular activities in a timely manner
Responsiveness	
11	Inquiries, requests, and claims of students are handled and resolved promptly
12	Academic staff conduct themselves in students' best interests
13	Academic staff provide help to students in resolving their problems
Assurance	
14	Academic staff have the necessary knowledge adequate communication skills
15	The faculty implements educational programs with clear aims for each specialization
16	Quality of education processes is at a high level
17	Staff conduct fills students with confidence
18	The reputation and position of the faculty in the environment is adequate
19	Academic staff provide professional answers to students' questions
Empathy	
20	Academic staff understand students' needs
21	Academic staff show positive attitudes toward students
22	Academic staff treat students equally and with respect
23	Academic staff are available for consultations and are forthcoming with students
24	The faculty value and acknowledge feedback from students for improving processes
25	Staff are polite, kind, and professional in communications with students

TABLE 2 Socio-demographic profile of the participants (summarized from the questionnaires).

Characteristic (total $n = 208$)	Frequency	Percentage (%)
Gender¹		
Female	156	75
Male	52	25
Year of study		
First year	43	21
Second year	54	26
Third year	75	36
Fourth year	36	17
Age range		
18–19 years old	53	26
20–21 years old	113	54
22–23 years old	35	17
24 years or above	7	3
Nationality		
Thai	189	91
Foreign	19	9

¹For the socio-demographic profile of the participants, the following options relative to gender were offered: *male, female, others* and *do not wish to say*, where in the last two options were removed from Table 2 as they did not yield any responses.

(= 208/350). The paper questionnaires were converted into a spreadsheet that allowed further purification and analysis of the data. For ethical considerations and to protect the identity of the participants, some specific information in the socio-demographic profile was generalized before disclosure in this paper, namely some specific minority nationalities were labeled as “foreign” instead of displaying the particular nationality, which could potentially allow exposing the identity of the participant.

Data analysis and results

The responses were examined using JASP to obtain for each item a mean value, median value, and standard deviation. To answer the previously stated research objectives as well as hypotheses, several statistical analyses were carried out. A series of *t*-test and ANOVA were performed to test differences in factors between groups of students based on their socio-demographic characteristics. The findings are discussed and interpreted in the following sections of this report.

Table A1 (in the Appendix) reports the distribution of responses including the mean rating, median rating, and standard deviation for each item. The mean ratings (x) range from 3.77 (Q11) to 4.17 (Q4) with a standard deviation (s) ranging from 0.93 (Q14) to 1.13 (Q1). The summary revealed that the students have the highest level of satisfaction with the items “Teaching materials are easily available and up-to-date, e.g., brochures, student guides” (Q4; $x = 4.17$; $SD = 1.08$) and “Staff and the faculty provide support and help to students” (Q7; $x = 4.12$; $SD = 1.08$). Conversely, the lowest level of satisfaction

TABLE 3 Top three and bottom three items based on their mean (summarized from the survey questionnaire).

Item	Statement	Factor	Rank	Mean	SD
Top three					
Q4	Teaching materials are easily available and up-to-date, e.g., brochures, student guides	Tangibles	1	4.17	1.08
Q7	Staff and the faculty provide support and help to students	Reliability	2	4.12	1.08
Q15	The faculty implements educational programs with clear aims for each specialization	Assurance	3	4.11	1.00
Q19	Academic staff provide professional answers to students' questions	Assurance	3	4.11	1.03
Bottom three					
Q22	Academic staff treat students equally and with respect	Empathy	23	3.88	1.12
Q12	Academic staff conduct themselves in students' best interests	Responsiveness	24	3.83	1.04
Q11	Inquiries, requests, and claims of students are handled and resolved promptly	Responsiveness	25	3.77	1.04

was recorded for the items “Inquiries, requests, and claims of students are handled and resolved promptly” (Q11; $x = 3.77$; $SD = 1.04$) and “Academic staff conduct themselves in students' best interests” (Q12; $x = 3.83$; $SD = 1.04$) as summarized in Table 3.

Table 4 reports the *t*-test results comparing the five factors that contribute toward the perceived service quality between male and female hospitality and tourism students. Overall, male students report higher mean levels for factors tangibles (+0.115), reliability (+0.260), and assurance (+0.008), whereas female students report higher mean levels for responsiveness (+0.135) and empathy (+0.086). However, male and female students demonstrate statistically significant mean differences in only one factor, i.e., reliability. The finding illustrates that female students have lower mean levels of reliability ($t = -2.374$, mean = 3.962) as compared to their male peers (mean = 4.222).

As reported in Table 5, *t*-test results were conducted to test differences in mean values of the same set of service quality factors under study between Thai nationals and foreign students. Overall, the Thai students reported higher mean values for three factors, i.e., reliability (+0.002), responsiveness (+0.073), and empathy (+0.145). Conversely, the foreign degree students reported higher mean values for factors tangibles (+0.159), and assurance (+0.242) as well as a higher mean value for the overall service quality (+0.040). However, none of the factors were found to illustrate statistically significant differences in mean

TABLE 4 T-test of differences in factors tangibles, reliability, responsiveness, assurance, empathy, and overall service quality amongst male and female students.

Factor	Mean		T-Test		
	Male (M) (n = 52)	Female (F) (n = 156)	t	p	Mean difference (M–F)
Tangibles	4.139	4.024	−1.004	0.316	0.115
Reliability	4.222	3.962	−2.374	0.019	0.260
Responsiveness	3.737	3.872	1.012	0.313	−0.135
Assurance	4.084	4.076	−0.066	0.948	0.008
Empathy	3.891	3.977	0.858	0.392	−0.086
Service quality	4.038	3.992	−0.654	0.514	0.046

TABLE 5 T-test of differences in factors tangibles, reliability, responsiveness, assurance, empathy, and overall service quality amongst Thai and foreign students.

Factor	Mean		T-Test		
	Thai (T) (n = 189)	Foreign (F) (n = 19)	t	p	Mean difference (T–F)
Tangibles	4.038	4.197	−0.921	0.358	−0.159
Reliability	4.027	4.025	0.010	0.992	0.002
Responsiveness	3.845	3.772	0.366	0.715	0.073
Assurance	4.056	4.298	−1.356	0.176 ^a	−0.242
Empathy	3.969	3.824	0.960	0.338	0.145
Service quality	4.000	4.040	−0.383	0.702	−0.040

^aLevene's test is significant ($p < 0.05$), suggesting a violation of the equal variance assumption.

TABLE 6 Comparison in factors tangibles, reliability, responsiveness, assurance, empathy, and overall service quality based on the year of study.

Factor	Mean				F	p	Post-hoc (Gabriel)
	Year 1 (n = 43)	Year 2 (n = 54)	Year 3 (n = 75)	Year 4 (n = 36)			
Tangibles	4.076	3.894	4.193	3.972	2.043	0.109	3 > 2
Reliability	4.020	3.963	4.134	3.908	1.114	0.345	
Responsiveness	3.845	3.741	4.013	3.611	2.295	0.079	3 > 2.4
Assurance	4.182	3.979	4.211	3.824	2.881	0.037	
Empathy	3.969	3.848	3.980	4.051	0.846	0.470	
Service quality	4.034	3.901	4.110	3.897	3.411	0.018	3 > 2

scores between the two groups ($p \geq 0.176$). Furthermore, Levene's test is significant ($p < 0.05$) for the factor assurance ($p = 0.176$), suggesting a violation of the equal variance assumption.

In addition, ANOVA was performed to test differences in factors tangibles, reliability, responsiveness, assurance, and empathy toward perceived service quality amongst students in different years of study (Table 6). Overall, two factors were found to display statistically significant differences among the sample groups, including assurance ($F = 2.881$, $p = 0.037$) and perceived service quality ($F = 3.411$, $p = 0.018$). After inspecting the Gabriel *post-hoc* test results, there are patterns to suggest that third-year students tend to differ in three factors from students in years 2 and 4. The third-year students were found to have higher mean scores in factors tangibles (mean = 4.193), responsiveness (mean = 4.013), and overall service quality (mean = 4.110).

Discussion and conclusion²

The study aims to examine undergraduate hospitality and tourism students' perceived satisfaction with their educational institution. Three socio-demographic factors were used to compare their influence on the perceived service quality amongst hospitality and tourism students, these were gender, year of study (i.e., age) and nationality. Service quality was divided and categorized into five key factors, tangibles, reliability, responsiveness, assurance, and empathy. The analysis of the empirical data revealed a variety of noteworthy results. Overall, it is reasonable to assume that the students are modestly satisfied with the perceived service quality of their educational institution in general.

² Any opinions, recommendations, and conclusions expressed in this paper are solely the intellectual result of the authors and do not reflect the viewpoint of the Faculty or University.

One noteworthy result was that the factor *assurance* plays a significant role when comparing the influence of various factors by year of study (i.e., students' age). In detail, students in their third-year had higher mean ratings on all five factors compared to their peers in the second year. However, no particular evidence was found in the literature or discovered during the analysis that explained this observation. Giannakis and Bullivant (2016) added that the perceived service quality is also impacted by students' identities and past experiences. It is reasonable to hypothesize that they affect how students perceive the factors tangibles, reliability, responsiveness, assurance, and empathy. This may account for the result of this current research that student year of study influenced their perception of service quality.

It is possible that the more junior students in the earlier years of their study need additional support and assistance from their program and their university and faculty (Lee et al., 2016). This could be provided in the form of financial assistance such as scholarship and funding options as well as academic, by providing tutoring services and writing services to the more inexperienced university students. By supporting developing students and improving their connection to the university, the reported service quality of newer university students may be improved. Faculty could provide information for contacts who can identify and assist students who may need support financially, academically, socially, and mentally so students are better integrated into university life and their study program. Student year of study and its relationship to service quality could be an area of further research.

In the context of perceived service quality in higher education in this study, some notable differences were observed based on the gender of the students. For example, the factor reliability was rated higher amongst male students compared to their female peers, which is in contrast to the findings by Twaissi and Al-Kilani (2015) who reported "no differences on the perceived service quality in higher education based on gender" (p. 88). A possibility to reinforce reliability, and associated quality assurance practices, can be the pursuit of accreditation or academic audit through an official body (Ewell, 2010). These essentially generic processes can be conducted voluntarily under the auspices of academic professional organizations and demonstrate a high level of reliability to external stakeholders (Seyfried and Pohlenz, 2018).

Ensuring the students' satisfaction has another important dimension for the higher education system in Thailand. The number of high school graduates has been decreasing gradually over the last decade, whereas the number of available undergraduate places has increased through the introduction of new study programs or increased competition in the form of private universities. For institutions in higher education to remain competitive it is important to evaluate the needs of current and future students, as well as, act upon the students' responses to continuously improve the service quality (Quinn et al., 2009).

Establishing and sharing a transparent and standardized method of how study programs are being evaluated will create value for their stakeholders. It allows the institutions to benchmark their performance to similar programs or institutions in order to identify areas of improvement (Chui and Ahmad, 2016). Finally, creating an internal quality culture that facilitates an institution's organizational innovation can also promote the development of individuals—for academic personnel as well as students (Yingqiang and Yongjian, 2016).

The outcomes of this empirical study must be weighed against certain limitations, as acknowledging these boundaries may lead to new research directions in the future. Firstly, the results of this study are not generalizable to other industries since the methodology and its associated findings are for this particular service setting. Another drawback concerns SERVPERF's measurement items, which were all stated in positive terms, perhaps leading to "yes-saying." In most cases, including both positively and negatively worded items is considered excellent research practice (Salazar, 2015).

However, respondents who make comprehension errors and take longer to read the questionnaire may suffer as a result of this technique. In terms of future study areas, developing a measuring instrument from other perspectives, such as internal customers, employers, government, parents, and the general public, may be worthwhile. Although students are the key customers in higher education (Quinn et al., 2009; Mark, 2013), the industry generally has many complementary and contradictory customers. This study has concentrated on the students as customers only, but it is recognized that education has other customer groups which must be satisfied.

Data availability statement

The empirical raw data supporting the conclusions of this article will be made available by the corresponding author upon reasonable request.

Ethics statement

The studies involving human participants were reviewed and approved by the Research Committee of the Faculty of Hospitality and Tourism, Prince of Songkla University. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Author contributions

KFu and KFa collected the empirical data and analyzed the data. KFu prepared the first draft of the manuscript. AS made substantial contributions to the final version of the manuscript.

All authors contributed to the conceptualization of the study, read, and approved the final version.

Funding

The Faculty of Hospitality and Tourism, Prince of Songkla University supported this research project under the Fast Track Data Collection Grant.

Acknowledgments

We thank the participants who participated in the study by sharing their views through the survey questionnaire.

References

- Abbas, J. (2020). HEISQUAL: A modern approach to measure service quality in higher education institutions. *Stud. Educ. Evaluat.* 67:100933. doi: 10.1016/j.stueduc.2020.100933
- Ada, S., Baysal, Z. N., and Erkan, S. S. S. (2017). An Evaluation of Service Quality in Higher Education: Marmara and Nigde Omer Halisdemir Universities' Department of Education Students. *Univ. J. Educ. Res.* 5, 2056–2065. doi: 10.13189/ujer.2017.051122
- Ali, F., Zhou, Y., Hussain, K., Nair, P. K., and Ragavan, N. A. (2016). Does higher education service quality effect student satisfaction, image and loyalty? A study of international students in Malaysian public universities. *Qual. Assuran. Educ.* 24, 70–94. doi: 10.1108/QAE-02-2014-0008
- Alves, H., and Raposo, M. (2009). The measurement of the construct satisfaction in higher education. *Serv. Industr. J.* 29, 203–218. doi: 10.1080/02642060802294995
- Alzafari, K., and Ursin, J. (2019). Implementation of quality assurance standards in European higher education: does context matter? *Q. Higher Educ.* 25, 58–75. doi: 10.1080/13538322.2019.1578069
- Beerkens, M. (2018). Evidence-based policy and higher education quality assurance: progress, pitfalls and promise. *Europ. J. Higher Educ.* 8, 272–287. doi: 10.1080/21568235.2018.1475248
- Borishade, T. T., Ogunnaikpe, O. O., Salau, O., Motilewa, B. D., and Dirisu, J. I. (2021). Assessing the relationship among service quality, student satisfaction and loyalty: the NIGERIAN higher education experience. *Heliyon* 7:e07590. doi: 10.1016/j.heliyon.2021.e07590
- Camilleri, M. A. (2021). Evaluating service quality and performance of higher education institutions: a systematic review and a post-COVID-19 outlook. *Int. J. Qual. Serv. Sci.* 13, 268–281. doi: 10.1108/IJQSS-03-2020-0034
- Chui, T. B., and Ahmad, M. S. (2016). Evaluation of service quality of private higher education using service improvement matrix. *Proc. Soc. Behav. Sci.* 224, 132–140. doi: 10.1016/j.sbspro.2016.05.417
- Demir, A., Maroof, L., Khan, N. U. S., and Ali, B. J. (2020). The role of E-service quality in shaping online meeting platforms: a case study from higher education sector. *J. Appl. Res. Higher Educ.* 13, 1436–1463. doi: 10.1108/JARHE-08-2020-0253
- Duque, J. F. (2021). A comparative analysis of the Chilean and Colombian systems of quality assurance in higher education. *Higher Educ.* 82, 669–683. doi: 10.1007/s10734-020-00633-z
- Ewell, P. (2010). Twenty years of quality assurance in higher education: What's happened and what's different? *Qual. Higher Educ.* 16, 173–175. doi: 10.1080/13538322.2010.485728
- Fuchs, K. (2021a). Advances in Tourism Education: A Qualitative Inquiry about Emergency Remote Teaching in Higher Education. *J. Environ. Manag. Tourism* 12, 538–543. doi: 10.14505/jemt.v12.2(50).23
- Fuchs, K. (2021b). Innovative Teaching: A Qualitative Review of Flipped Classrooms. *Int. J. Learn. Teach. Educ. Res.* 20, 18–32. doi: 10.26803/ijlter.20.3.2
- Fuchs, K., and Fangpong, K. (2021). Using the SERVQUAL Framework to Examine the Service Quality in Higher Education in Thailand. *Educ. Q. Rev.* 4, 363–370. doi: 10.31014/aior.1993.04.02.286
- Giannakis, M., and Bullivant, N. (2016). The massification of higher education in the UK: Aspects of service quality. *J. Further Higher Educ.* 40, 630–648. doi: 10.1080/0309877X.2014.1100280
- Gregory, J. L. (2019). Applying SERVQUAL: Using service quality perceptions to improve student satisfaction and program image. *J. Appl. Res. Higher Educ.* 11, 788–799. doi: 10.1108/JARHE-12-2018-0268
- Gul, S., Jan, S., and Shah, F. A. (2019). The impact of service quality on students satisfaction in higher education institutes of Khyber Pakhtunkhwa. *Rev. Econ. Devel. Stud.* 5, 217–224. doi: 10.26710/reads.v5i1.589
- Gupta, P., and Kaushik, N. (2018). Dimensions of service quality in higher education—critical review (students' perspective). *Int. J. Educ. Manag.* 32, 580–605. doi: 10.1108/IJEM-03-2017-0056
- Ham, L., and Hayduk, S. (2003). Gaining competitive advantages in higher education: analyzing the gap between expectations and perceptions of service quality. *Int. J. Value Based Manag.* 16, 223–242. doi: 10.1023/A:1025882025665
- Heo, M., Kim, N., and Faith, M. S. (2015). Statistical power as a function of Cronbach alpha of instrument questionnaire items. *BMC Med. Res. Methodol.* 15:86. doi: 10.1186/s12874-015-0070-6
- Hwang, Y. S., and Choi, Y. K. (2019). Higher education service quality and student satisfaction, institutional image, and behavioral intention. *Soc. Behav. Personal.* 47, 1–12. doi: 10.2224/sbp.7622
- Khodayari, F., and Khodayari, B. (2011). Service quality in higher education. *Interdisc. J. Res. Bus.* 1, 38–46.
- Latif, K. F., Latif, I., Farooq Sahibzada, U., and Ullah, M. (2019). In search of quality: measuring higher education service quality (HiEduQual). *Total Qual. Manag. Bus. Excell.* 30, 768–791. doi: 10.1080/14783363.2017.1338133
- Lee, M. J., Huh, C., and Jones, M. F. (2016). Investigating quality dimensions of hospitality higher education: From students' perspective. *J. Hospital. Touris. Educ.* 28, 95–106. doi: 10.1080/10963758.2016.1163499
- Leonnard, L. (2018). The performance of SERVQUAL to measure service quality in private university. *J. Effic. Responsibil. Educ. Sci.* 11, 16–21. doi: 10.7160/eriesj.2018.110103
- Mark, E. (2013). Student satisfaction and the customer focus in higher education. *J. Higher Educ. Policy Manag.* 35, 2–10.
- Min, S., and Khoon, C. C. (2014). Demographic factors in the evaluation of service quality in higher education: A Structural Equation Model (SEM) approach. *Int. J. Marke. Stud.* 6, 90–102. doi: 10.5539/ijms.v6n1p90
- Osman, A. R., and Saputra, R. S. (2019). A pragmatic model of student satisfaction: A viewpoint of private higher education. *Qual. Assur. Educ.* 27, 142–165. doi: 10.1108/QAE-05-2017-0019

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

- Parasuraman, A., Zeithaml, V. A., and Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Retail. Reader* 64, 12–40.
- Quinn, A., Lemay, G., Larsen, P., and Johnson, D. M. (2009). Service quality in higher education. *Total Qual. Manag.* 20, 139–152. doi: 10.1080/14783360802622805
- Rodrigues, L. L., Barkur, G., Varambally, K. V. M., and Motlagh, F. G. (2011). Comparison of SERVQUAL and SERVPERF metrics: an empirical study. *TQM J.* 23, 629–643. doi: 10.1108/17542731111175248
- Rueda, L., Benitez, J., and Braojos, J. (2017). From traditional education technologies to student satisfaction in Management education: A theory of the role of social media applications. *Inform. Manag.* 54, 1059–1071. doi: 10.1016/j.im.2017.06.002
- Salazar, M. S. (2015). The dilemma of combining positive and negative items in scales. *Psicothema* 27, 192–199. doi: 10.7334/psicothema2014.266
- Seyfried, M., and Pohlenz, P. (2018). Assessing quality assurance in higher education: quality managers' perceptions of effectiveness. *Europ. J. Higher Educ.* 8, 258–271. doi: 10.1080/21568235.2018.1474777
- Silva, D. S., de Moraes, G. H. S. M., Makiya, I. K., and Cesar, F. I. G. (2017). Measurement of perceived service quality in higher education institutions: A review of HEdPERF scale use. *Qual. Assur. Educ.* 25, 415–439. doi: 10.1108/QAE-10-2016-0058
- Skarpeta, K., Koemtzi, M., and Aidonis, D. (2019). Measuring internal service quality: the case of the Greek public higher education institutions. *TQM J.* 32, 268–287. doi: 10.1108/TQM-02-2019-0061
- Sohail, M. S., and Hasan, M. (2021). Students' perceptions of service quality in Saudi universities: the SERVPERF model. *Learn. Teach. Higher Educ.* 17, 54–66. doi: 10.1108/LTHE-08-2020-0016
- Sidorov, M., Salnikova, S., Savelyev, Y., and Oliinyk, O. (2020). Modified SERVPERF and Normalized SERVQUAL Models in Estimation of Service Quality in Higher Educational Institutes. *Sociol. Stud.* 1, 29–39. doi: 10.29038/2306-3971-2020-01-29-39
- Trautwein, C., and Bosse, E. (2017). The first year in higher education—critical requirements from the student perspective. *Higher Educ.* 73, 371–387. doi: 10.1007/s10734-016-0098-5
- Turyahikayo, E. (2019). The Influence of Knowledge Management on Internal Quality Assurance in Higher Education Institutions. *Higher Educ. Res.* 4, 80–87. doi: 10.11648/j.her.20190406.11
- Twaissi, N. M., and Al-Kilani, M. H. (2015). The Impact of Perceived Service Quality on Students' Intentions in Higher Education in a Jordanian Governmental University. *Int. Bus. Res.* 8, 81–92. doi: 10.5539/ibr.v8n5p81
- Yingqiang, Z., and Yongjian, S. (2016). Quality assurance in higher education: Reflection, criticism, and change. *Chin. Educ. Soc.* 49, 7–19. doi: 10.1080/10611932.2016.1192382

RETRACTED

Appendix

TABLE A1 Distribution of responses, mean value, median value, and standard deviation (summarized from 208 questionnaires).

Factor	No.	Distribution of responses*					Mean (x)	Median (x _b)	SD (s)
		1	2	3	4	5			
Tangibles	Q1	7	16	42	47	96	4.00	4	1.13
	Q2	5	12	46	70	75	3.95	4	1.02
	Q3	4	8	39	73	84	4.08	4	0.96
	Q4	5	14	34	42	113	4.17	5	1.08
Reliability	Q5	2	11	57	60	78	3.97	4	0.97
	Q6	5	8	42	65	88	4.07	4	1.00
	Q7	8	9	36	53	102	4.12	4	1.08
	Q8	4	11	52	51	90	4.02	4	1.04
	Q9	6	5	43	81	73	4.01	4	0.96
	Q10	9	14	34	67	84	3.98	4	1.11
Responsiveness	Q11	4	18	63	60	63	3.77	4	1.04
	Q12	5	16	55	65	67	3.83	4	1.04
	Q13	4	13	46	79	66	3.91	4	0.98
Assurance	Q14	1	10	46	66	85	4.08	4	0.93
	Q15	6	5	42	62	93	4.11	4	1.00
	Q16	7	10	42	53	96	4.06	4	1.08
	Q17	6	4	45	65	88	4.08	4	0.99
	Q18	8	9	41	61	89	4.03	4	1.07
	Q19	7	7	38	61	95	4.11	4	1.03
Empathy	Q20	4	6	55	72	71	3.96	4	0.95
	Q21	8	2	46	66	86	4.06	4	1.01
	Q22	9	13	52	55	79	3.88	4	1.12
	Q23	5	9	57	63	74	3.92	4	1.01
	Q24	9	9	46	70	74	3.92	4	1.07
	Q25	6	8	48	64	82	4.00	4	1.02

*Ratings obtained on a five-point forced-option scale ranging from lowest rating to highest rating, i.e., Strongly Disagree (1), Somewhat Disagree (2), Neutral (3), Somewhat Agree (4), and Strongly Agree (5).