Measuring Higher Education Services Using the SERVQUAL Model

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Abstract:

Research Question (RQ): In this research analysis, SERVQUAL tool was used with higher education institutions (HEIs) to measure service quality as well as to compare them. HEIs were compared to see the service quality dimensions that need improvements in public HEI verses private HEIs. More specifically, to examine if there is a common trend with public universities in specific quality service dimensions that were not expected and less perceived by students.

Purpose: Quality of service in a higher education institution is an essential aspect to ensure competency and attractiveness in the marketplace. Students are the primary stakeholders. Students expectations from an HEI and their perception of quality of service needs to be a strategic objective of an HEI. Public HEIs have a different strategy from private ones. In this research study, such a difference was examined to determine if it is reflected in a specific service quality dimension.

Method: The study is based on a comparative literature review of SERVQUAL instrument used in measuring service quality in HEIs. Results obtained from the review of literature were triangulated and examined for specific quality dimensions that were common in public HEIs that need improvement.

Results: Students' perception was less than expected in the quality of service provided. Public HEIs should consider reliability and responsiveness as a priority and along with other dimensions to improve service quality. SERVQUAL could be used to examine and measure students' perspective and measure periodical and implemented strategic objectives of higher education.

Organization and Society: The research impact is mainly on HEIs, their managers, and their plans for quality improvements.

Originality: The findings of the measuring tool SERVQUAL was compared among different HEIs from the review of literature using triangulation techniques.

Limitations / Further research: Limitations of the study are concerned mostly with the different data collected among different HEIs in different geographical regions. Triangulation of the same scale excluded many related studies which used different scale measures or further specified quality dimensions yielding fewer studies that could be triangulated. Further research could be conducted by collecting data on public and private HEIs in the same region and time and then repeated at different time intervals to examine any progress.

Keywords: SERVQUAL, Higher education, Public HEI, Triangulation, Service Quality, strategic objectives, students' perceptions, students' expectations.

1 Introduction

Quality in service is as vital as quality in products in the industrial sector. Service quality as a sector by its own entity was not regarded as such until recently. Service assessed by itself was not a primary focus even in research till the late 1970s. However, since then, the service sector has demonstrated its significant effect on the economy. It had become a vital topic for study, and thus its measurement becomes imperative. However, the measurement of service quality is not straightforward, and often it is done indirectly by measuring a byproduct or tangible output. Therefore, it is essential to study the assessment and measurement of service quality (Abdullah, 2006).

Higher education is regarded as a service sector and an indispensable part of the commercial service sector. Its quality is a primary concern for its competitiveness and effectiveness. To maintain and ensure its quality, government requirements and accreditation standards were assigned to higher education. The assessments of these requirements and standards have placed more attention on curricula or tangible aspects than directly assessing service quality. The direct measurement of service quality will fill this gap of ensuring quality in service institutions. The assessment of quality service has to be done continuously for continuous improvement (Çerri, 2014). Assessment and measurement of service quality need to be executed from the perspective of primary stakeholders. As discussed in Douglas, McClelland, and Davies (2008) the primary stakeholders in higher education are the students.

Having the above in mind, in this study, Higher Education Institutions (HEIs) were compared to see the service quality dimensions that need improvements in public HEIs verses private HEIs. More specifically, for this paper to examine if there is a common trend with public universities in specific quality service dimensions that were not expected and less perceived by students.

SERVQUAL is a research instrument that measures customers' perception of service quality and their expectation of the service. It then measures the difference between the expectation and perception to see if the perception is higher or lower than the expected. When it is lower, improvements need to be conducted in that quality dimension. In the case of higher education, it measures the perception of students with regards to the quality of service of higher education institutions. This research aims to do a comparative literature review of several higher education institutions that had used the SERVQUAL research instrument to determine if there is consistency in the findings regarding which dimension of service is lacking in public institutions in general. The method to be used is the triangulation of results from different public institutions of the data collected by SERVQUAL in several public and private higher education institutions.

Leisyte and Westerheijden (2014) state that students who are regarded as equal partners, i.e., as stakeholders, are more involved in determining the institution's strategy. Through measurement of student's perception and expectation of quality service, the obtained results

can then be included in the strategic objectives of the institution. The purpose of quality assurance is to ensure that higher education institution meets its strategic objectives. They need to have input for internal and external evaluations, quality assurance, curriculum, and other factors (Kettunen, 2012). Therefore, the measurement of student's perception of quality service, and their involvement in strategic management completes the circle in the institution's back and forth measurement and input of quality.

2 Theoretical framework

2.1 Definition of Service Quality

From a theoretical standpoint, there is no universal definition of quality - it may be defined as the conformance of a requirement, being fit to use (Parasuraman, Zeithaml, & Berry, 1985; Zeithaml, 1988). Moreover, measuring the quality of a service can be a challenging exercise. Unlike products where there are specific specifications such as length, depth, width, weight, color, and so on, a service has many intangible or qualitative specifications. Also, there is an expectation of the customer with regards to the service, which can vary considerably based on a range of factors such as prior experience, personal needs, and what other people may have told them (Grönroos, 1984).

Quality service is defined as the customers' perceptions of service performance that meets or exceeds their expectations of what the service organization provides. Thus, the service quality is to fulfill customer expectations (Pariseau & McDaniel, 1997).

Castleberry and McIntyre (2011) define the perceived quality of service as the belief about the excellence level of the service (p. 75). According to Zeithaml (1998), perceived quality of service is "the judgment of consumer on the superiority or the excellence of a product or service" (p. 3). Perceived quality of service differs from objective quality. Perceived quality of service is the consumers' perception, which is unequal to satisfaction obtained by comparing consumers' expectations from service and performance of the received service (Zeithaml, 1988). Perceived quality of service is an attitude that is related to but different than contentment, and it is attained by comparing the expectations with perceived performance (Parasuraman, Zeithaml, & Berry, 2002).

Parasuraman, Zeithaml, and Berry (1985, 1991) and Parasuraman, Berry, and Zeithaml (1991) developed a measurement tool entitled SERVQUAL, to be used in a variety of service industries. SERVQUAL has been tested in a number of service settings (Buttle, 1996; Ladhari, 2009; Lam & Woo, 1997). The SERVQUAL scale was developed to provide an instrument for measuring service quality to be applied to a broad range of services with minor modifications in the scale. There are five dimensions of service quality that apply to service-providing organizations in general.

2.2 Service Quality Determination

The SERVQUAL method consists of 5 quality dimensions (i.e., Tangible, Reliability, Responsiveness, Assurance and Empathy) and of 20 elements. The SERVQUAL instrument was used to measure the five quality dimensions of service quality. The five dimensions with the corresponding definition are listed in Table 1.

Table 1. The Five dimensions of SERVQUAL with Definitions

(1) Tangibles	Physical facilities, equipment and appearance of personnel.
(2) Reliability.	Ability to perform the promised service dependably and accurately.
(3) Responsiveness	Willingness to help customers and provide prompt service.
(4) Assurance	It includes competence, courtesy, credibility and security. It is the knowledge and courtesy of employees and their ability to inspire trust and confidence.
(5) Empathy	It includes access, communication, understanding the customer. It is the caring and individualized attention that the firm provides to its customers.

Note: Five Dimensions of SERVQUAL with Definitions. Adapted from "Five imperatives for improving service quality", by L. L. Berry, V. A. Zeithaml, and A. Parasuraman, 1990, *MIT Sloan Management Review, 31*(4), p. 29.

These five dimensions appear in the questionnaires used for SERVQUAL measurement and Figure 1 presents a summary of the critical factors in each of the five quality dimensions of service.
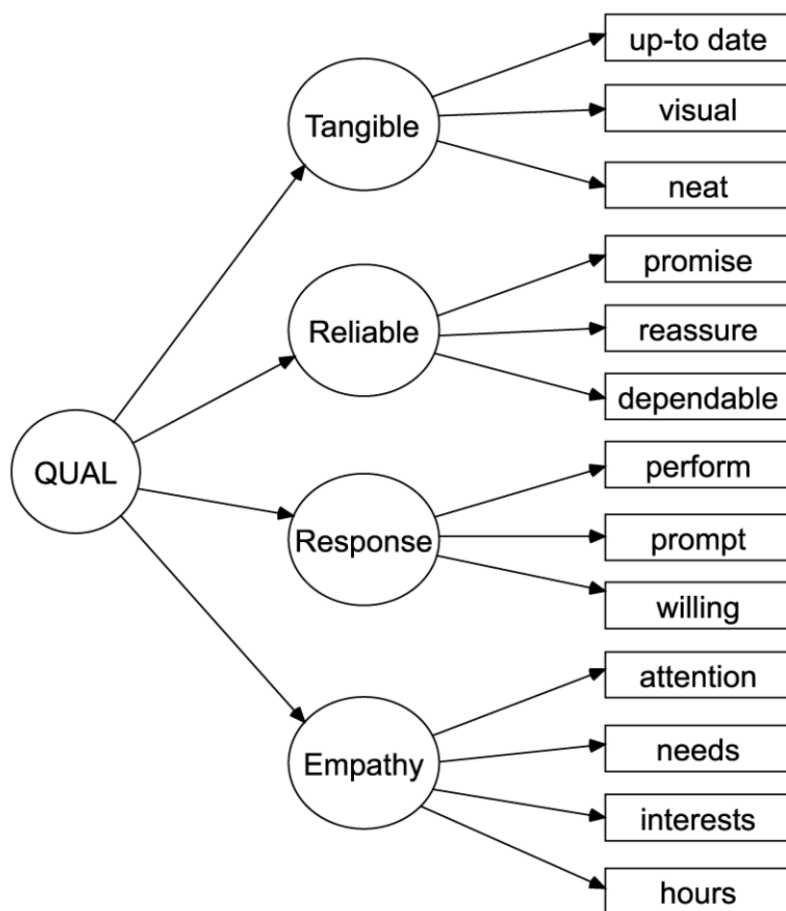
Figure 1. Factors incorporated in the five service quality dimensions. Adapted from The applicability of SERVQUAL in cross-national measurements. Kilbourne, Duffy, and Giarchi, (2004), *Journal of Services Marketing, 18*(7), p. 528

SERVQUAL contains 20 pairs of items (see example below). Half of these items are intended to measure consumers' expected level of service for a particular industry (Expectations). The other 20 matching items are intended to measure consumer perceptions of the present level of service provided by a particular organization (Perceptions).

Example of a pair of items:

Expectation items (1-20)
1- Excellent Higher education institutions must have attractive buildings
　　　　1　　　2　　　3　　　4　　　5
2- ....

Perception items (1-20)

1- Higher education institution X has attractive buildings
　　　　1　　　2　　　3　　　4　　　5
2- ....

Both sets of items are presented in five-point Likert response format, with the range between 5 as 'strongly agree,' and 1 as 'strongly disagree'. Service quality is measured on the basis of the different scores by subtracting Expectation scores from the corresponding Perception scores.

Putting service quality into operation as a difference or 'gap' score is a consistent extension of the theoretical work of Parasuraman and his colleagues (1985, 1988) on the determinants of service quality. It is unique in the sense that the definition of the construct is based on the difference between expectations and perceptions. The construct is differentiated from consumer satisfaction in a way that defines the expectations/ perceptions 'gap' as an enduring perception of the overall excellence of a particular firm.

A structured survey questionnaire was developed according to SERVQUAL scale. It consists of 20 statements with two columns.

For each pair of statements listed in the SERVQUAL instrument, a score was computed as follows: Service quality (SQ) = Perception (P) –Expectation (E). For example, if a perception of a statement on Empathy scored a 3 and the corresponding statement for expectation scored a 5 then, SQ = P (3)-E (5) = -2. The service quality of the higher education institution is assessed along each of the five dimensions by averaging the SERVQUAL scores on the statements making up the dimension measures.

The SERVQUAL scale is analyzed based on the gap-based principal. The service quality based on the gap for each dimension is calculated with the following equation (Sánchez Pérez, Carlos Gázquez Abad, María Marín Carrillo, & Sánchez Fernández, 2007):

$$GSQ_I = \frac{\sum_{I=1}^{n}\left(P_{ij} - E_{ij}\right)}{n_i}$$

In this formulation;

$P_{ij} = $ the perceived (experience) level of service for the ith aspect at the jth dimension,

$E_{ij} = $ the expected level of service for the ith aspect at the jth dimension,

$n_i = $ number of observations.

Zeithaml, Berry, and Parasuraman (1993) state that the only criterion for measuring service quality is the match between the service provided and the consumers' expectation (i.e., the stakeholder in our research) of quality. More specifically, the definition of quality of service is determined by the consumer (Quester & Romaniuk, 1997). In the service sector, the consumer (i.e., stakeholder) determines not only the quality of service but also its limits. Therefore, the quality of service and its limits are consumer stakeholder-oriented.

3 Method

3.1 Data Collection

The study is based on the comparative literature review of the SERVQUAL instrument used in measuring service quality in higher education institutions (HEI). Results obtained in the literature were triangulated and examined for specific quality dimensions that were common in public HEIs that need improvement.

Data collected was through the review of literature. Articles were selected using the following criteria:

- SERVQUAL instrument is used in a higher education institution,
- It is evident that the institution is a public or private institution,
- The quality dimensions used are the five original dimensions with no further elaborated dimension,
- The measurement is the original measurement: Gap = Expectation – Perception,
- The findings in the article are actual numbers which can be used and calculated in a way that suits our study.

The triangulation of data from the articles requires the presence of sufficient data inside the article reaching data saturation. Several articles were eliminated as they did not fit the criteria above. Table 2 lists the articles that were selected for data collection.

Table 2. Articles included in Data Analysis

No.	Public/ Private	Country	University	Faculty	Article
PB1	Public	Bosnia and Herzego vina	University of Tuzla	Faculty of Economics	Đonlagić, S., & Fazlić, S. (2015). Quality assessment in higher education using the SERVQUAL model. Management: Journal of contemporary management issues, 20(1), 39-57.
PB2	Public	Iran	Zanjan University of Medical Sciences		Mohammadi, A., & Mohammadi, J. (2014). Educational Service Quality in Zanjan University of Medical Sciences from Students' Point of View. World Journal of Education, 4(5), 86.
PB3	Public	Croatia	University J.J.Strossmay er,	Faculty of Law in Osijek	Legčević, J. (2010). Quality gap of educational services in viewpoints of students. Ekonomska Misao i Praksa(2)279.
PB4	Public	Iran	Hormozgan University of Medical Sciences		Aghamolaei, T., & Zare, S. (2008). Quality gap of educational services in viewpoints of students in Hormozgan University of medical sciences. BMC Medical

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					Education, 8(1), 34.
PB5	Public	Brazil	São Paulo State University (UNESP)	Production Engineer program	De Oliveira, O. J., & Ferreira, E. C. (2009). Adaptation and application of the SERVQUAL scale in higher education. Paper presented at the Proceedings of POMS 20th Annual Conference Orlando, Florida USA.
PB6	Public	Albania	Aleksandër Xhuvani University (UNIEL)		Çerri, S. (2012). Assessing the quality of higher education services using a modified SERVQUAL scale. *Annales Universitatis Apulensis: Series Oeconomica, 14*(2), 664.
PB7	Public	Poland	Czestochowa University of Technology	Faculty of Management	Ulewicz, R. (2014). Application of Servqual method for evaluation of quality of educational services at the university of higher education. Polish Journal of Management Studies, 9, 254--264.
PR1	Private	Iran	Islamic Azad University-Khorasgan Branch		Abari, A. A. F., Yarmohammadian, M. H., & Esteki, M. (2011). Assessment of quality of education a non-governmental university via SERVQUAL model. Procedia-Social and Behavioral Sciences, 15, 2299-2304.
PR2	Private	Thailand	Khon Kaen University		Yousapronpaiboon, K. (2014). SERVQUAL: Measuring higher education service quality in Thailand. Procedia-Social and Behavioral Sciences, 116, 1088.
PR3	Private	Dubai	Manipal University Dubai Campus		Datta, K. S., & Vardhan, J. (2017). A SERVQUAL-Based Framework for Assessing Quality of International Branch Campuses in UAE: A Management Students' Perspective. SAGE Open, 7(1).

3.2 Data Analysis: Triangulation of Data

The measurement findings of the quality dimensions of SERVQUAL were triangulated from different HEIs. The numbers were compared, and the magnitude for each parameter was examined. Then the ranked quality dimensions that were in the first rank and last rank were also compared. Each of these triangulated data is presented consecutively.

SERVQUAL uses the Likert-type scale to measure the importance of a quality measure to the student. Each quality dimension tangibles, reliability, responsiveness, assurance, and empathy is measured by several questions in the questionnaire on a scale of 1 to 5. Various articles used in the data analysis used different scales, which were either 1 to 5, 1 to 7, or 1 to 9. The results were converted by using a conversion formula (see Table 3).

Each one of the five dimensions with their questions has an average measurement for Expectation, Perception, and then the Gap (Gap = P - E). In this study, the total average of Expectations, Perceptions, and Gaps was triangulated and compared, collected from each articles' findings.

3.3 Reliability and Validity of Data

All findings from the dataset have a reported acceptable validity and reliability values. The validity and reliability of this research in comparing and triangulating findings was completed by paralleling and choosing literature that used a similar scale and provided sufficient data for further calculating needed measurements.

The limitations of the study were mostly with the different data collected among various HEI in different geographical regions. Triangulation at the same scale excluded many related studies that used different scale measures or further specified quality dimensions yielding fewer studies that could be triangulated. Further research could be done by collecting data on public and private HEIs in the same geographical region and time and then repeated at various times to examine any progress.

4 Results

4.1 Triangulation of Average Measurements of Expectation, Perception, and their Gap

Data triangulation of the average expectations, perceptions, and gaps of the ten articles, of which seven represented public HEIs and three private HEIs, are presented in Table 3. The mean ($\bar{x}$) expectation and the mean ($\bar{x}$) perception are listed along with the gap of each mean ($\bar{x}$). Some of these measurements were calculated from the data present in the respective articles. The data were regarded as a whole mean ($\bar{x}$) of findings and not by dimension to obtain a holistic view of the data. Each column then has its respective mean ($\bar{x}$) to be compared. Expectation column then has its mean ($\bar{x}$) for the public HEI vs. mean ($\bar{x}$) of the expectation column for private HEIs. Similarly, this was computed for perception and gap columns (Table 3).

Table 3. Mean Expectation, Perception, and Gap Measurements for 10 HEIs.

HEI Public/ Private	Likert Scale	$\bar{x}$ Expectation Original	$\bar{x}$ Expectation Converted*	SD	$\bar{x}$ Perception Original	$\bar{x}$ Perception Converted *	SD	$\bar{x}$ Gap (P-E)	The New $\bar{x}$ Gap (P-E)	SD
PB1	7*	6.35	**4.58**		3.86	**2.91**		-2.49	**-1.66**	
PB2	5	4.44	**4.44**		2.84	**2.84**		-1.60	**-1.59**	
PB3	5	4.38	**4.38**		3.11	**3.11**		-1.30	**-1.27**	
PB4	5	4.03	**4.03**		3.13	**3.13**		-0.89	**-0.89**	
PB5	7*	5.35	**3.90**		4.50	**3.33**		-0.85	**-0.57**	
PB6	7*	6.01	**4.34**		5.43	**3.95**		-0.58	**-0.39**	
PB7	7*	Not available	Not available		Not available	Not available		-0.43	**-0.43**	
Total Average Public			**<u>4.28</u>**	0.237		**<u>3.22</u>**	0.366		**<u>-1.06</u>**	0.5
PR1	5	4.03	**4.03**		3.51	**3.51**		-0.52	**-0.52**	
PR2	9*	7.12	**3.69**		4.56	**2.57**		-2.56	**-1.13**	
PR3	9*	7.10	**3.68**		4.28	**2.44**		-2.81	**-1.24**	
Total Average Private			**<u>3.80</u>**	0.163		**<u>2.84</u>**	0.477		**<u>-0.96</u>**	0.317

*NB: conversion formula was used to calculate 7 and 9 Likert Scale to a 5 point scale.
newscore = (1+ 2/3(oldscore-1)) for the 7 Likert Scale [6 parts for 7 scale to 4 parts for 5 scale]
newscore = (1+ 1/2(oldscore-1)) for the 9 Likert Scale [8 parts for 9 scale to 4 parts for 5 scale]

Interpretation:

With all 10 HEIs, each expectation exceeds perception of the services provided. This is interpreted as the primary stakeholders (i.e., the students) in all of the examined HEIs do not have a met expectation. As such, the findings showed unmet expectations as perceived by students. When perception scale was subtracted from the expectation scale, a negative measurement is obtained, indicating a presence of a gap, which means the students' perceive the service provided at a lesser level than what they would expect. None of the HEIs (i.e., private or public) has met expectations. All of them had a negative gap when P - E was calculated.

Comparing the total average Expectation of the students of public HEI with that of the Expectations of students of private HEIs, the public HEI showed a higher value; this means that the total Expectation of students from public HEIs is greater than that of the total Expectation of students from private HEIs.

Such a higher result was not expected as students pay for private institutions and thus they tend to expect more.

4.2 Triangulation of the Highest and Lowest Rank for Expectations

Another triangulation comparison was conducted regarding the highest and lowest rank for expectation. The ranking of the five-quality dimension: tangibles, reliability, responsiveness, assurance, and empathy are a finding in each of the studies. In each study, the findings included the quality dimension of one or more of the five that needed prioritized improvement. The quality dimension that had the most significant negative gap number was the one selected in ranking as number one, then followed by a list of five that were ranked, consecutively for the remaining quality dimensions. The same was completed for the expectation and perception measurements. In this research, the results for each HEI was collected and tabulated. It was also triangulated and compared in each aspect of expectation, perception, and gap. Table 4, 5, and 6 presented the comparison of all 10 HEIs.

Table 4. Highest and Lowest Rank for Expectation

HE Public/ Private	Highest Rank Expectation	Lowest Rank Expectation
PB1	Empathy	Tangibles
PB2	Reliability and Empathy	Tangibles
PB3	Reliability	Tangibles
PB4	Assurance	Responsiveness
PB5	Responsiveness	Tangibles
PB6	Assurance	Empathy
PB7	n/a	Empathy
PR1	Responsiveness	Tangibles
PR2	Responsiveness	Empathy
PR3	Assurance	Responsiveness

In Table 4, the public and private HEIs are listed with the highest ranked quality dimension in the expectation scale for each one. Then another column was added for the least ranked dimension in the SERVQUAL expectation findings for each HEI.

Interpretation

It was observed that the public HEIs (PB1→PB7) have in the first rank different dimensions which include Reliability, Empathy, and Assurance. Tangibles were never in the first rank of any of the public or private expectation priorities. These results indicate that it was not in the interest of students in either public or private HEIS to prioritize tangibles. Students did not consider a high priority much the facilities' equipment, building, and the appearances of staff. In public HEIs, students expected less from the dimension of Empathy along with tangibles. They did not expect individualized attention from faculty, staff, and administration.

With private HEIs (PR1 → PR3) the first ranked dimension was Responsiveness. The students expected prompt service from the institution's staff and faculty. Students paying tuition expected to receive swift and willing service from the staff and faculty.

4.3 Triangulation of the Highest and Lowest Rank for Perception

Table 5. Highest and Lowest Rank for Perception

HE Public/ Private	Highest Rank Perception	Lowest Rank Perception
PB1	Reliability	Responsiveness
PB2	Reliability	Responsiveness
PB3	Tangibles	Empathy
PB4	Reliability	Responsiveness
PB5	Assurance	Empathy
PB6	Responsiveness	Empathy
PB7	n/a	n/a
PR1	Assurance	Responsiveness
PR2	Reliability	Empathy
PR3	Assurance	Empathy

As with Table 4, Table 5 lists the first in rank for each HEI for perception. Perception is the received service and how student see it if it is sufficient enough or not from their perspective.

Interpretation

Perception of quality of service in public HEIs from the students' point of view was that they did receive trusted information and service (Table 5) which is considered under the dimension of Reliability. This dimension was perceived in the first rank of most of the public HEIs. Reliability is the trust and assurance of service. Moreover, Responsiveness and Empathy were the least perceived by students in public HEIs. Responsiveness is prompt service that is done quickly, willingly, with good-performance, while Empathy is the individualized personal help given to students.

 The private HEIs had received Assurance, Confidentiality, and Securities of services, but did not receive a high assessment on the dimensions of Empathy and Responsiveness.

4.4 Triangulation of the Highest and Lowest Rank for Gap

SERVQUAL's main measurement is the gap values (Table 6). The gap value indicates the precise value from the point view of the stakeholder, the students. Therefore, findings of SERVQUAL are mainly the gap measurement and the level of negativity it measures. The measurement of the gap is the difference between Expectation and Perception (P - E). It views the gap as a more leveled value to consider. It relies on the dimension that has the highest gap and should be worked on for improvement in a quicker manner than with the other dimensions.

Similar to the above tables, Table 6 lists the negative gaps for each HEI. Observation was conducted to determine the triangulated findings comparison of the most negative result with each HEI and with the least.

Table 6. Highest and Lowest Rank for Gap

HE Public/ Private	Most Negative Gap	Least Negative Gap
PB1	Empathy	Reliability
PB2	Responsiveness	Reliability
PB3	Reliability	Tangibles
PB4	Responsiveness	Reliability
PB5	Responsiveness	Tangibles
PB6	Reliability	Responsiveness
PB7	Reliability	Assurance
PR1	Responsiveness	Reliability
PR2	Tangibles	Reliability
PR3	Assurance	Empathy

Interpretation

Public HEIs have a gap in Responsiveness and Reliability, two major service quality dimensions that need immediate improvement. It could be stated that such results are typical of governmental institutions where procrastination is the most flawed quality (Furusawa & Lai, 2011).

Public HEIs with governmental employees may lack promptness to student needs. Moreover, their service could be viewed as not reliable, depending on the competition of the intuition. However, the Reliability dimension could be least prioritized when a public institution is seen as dependable, assuring and confident. Moreover, students who are in public universities did not assess Tangibles as an essential issue.

Private HEIs have mixed gap dimensions that need to be improved ahead of other dimensions. However, it is interesting that Reliability and Empathy were the last on the list to be improved.

5 Discussion

5.1 Short Description of the Results

In our findings of the current research, all HEIs studied failed to have a positive gap between expectation and perception of quality services in the view of the students in public and private institutions. Quality of service was less than expected as perceived by the primary stakeholders, the students.

Moreover, students in public HEIs have cumulatively more expectations than students from private HEIs but have a greater value in the perception of services. On the other hand, the gap difference between cumulative perception and expectation was greater for public HEIs than with private HEIs. Quality of service needs more prioritized improvement in the public sector.

The dimensions of quality of service: Tangibles, Reliability, Responsiveness, Assurance, and Empathy were ranked for each HEI in the studies examined. Findings of the first in rank of quality dimension in each institution revealed that the expectation of students in public HEIs constitutes mainly with Reliability, Empathy, and Assurance. Tangibility is a dimension both in private and public sector that had no priority. Private institutions' first in rank was the Responsiveness dimension.

5.2 Discussing the Results & Research Question

The perception first in rank in public HEIs was Reliability. Students at public HEIs receive a better reliability quality of service in their perception, but less quality in Responsiveness and Empathy. Private HEI students, on the other hand, had perceived Assurance as number one for service and Empathy as the last ranking.

Reliability and Responsiveness have the highest ranking in the gap of service in public institutions. Both of these quality dimensions are needed to be improved and prioritized. Gap of service is the difference between perception and expectation of quality of service from the main stakeholders of the HEIs, the students. At the same time, Reliability was the least ranked dimension in certain public and private HEIs. As such, based on the findings from this study, public HEIs have shown a trend in specific dimensions that commonly needs improvement.

5.3 Authors' Opinion

Outside features of private and public institutions can be easily spotted; however service quality is not as easy to determine. The dimension of service quality remains questionable with the lack of proof to whether service is provided as expected from its customers. SERVQUAL helps in providing additional evidence with indications of which dimension of quality to improve.

6 Conclusion

6.1 Summary of the Results

In conclusion, findings from the dataset revealed that students' Perception was less than the Expectation in the quality of service provided. Public HEIs need to consider Reliability and Responsiveness as a priority and along with the other dimensions to improve service quality. SERVQUAL could be used to examine and measure students' perspective, measure it periodically, and the findings into the strategic objectives of higher education.

6.2 Contribution to the Profession

Service quality in higher education is a valuable competitive asset. As public and private HEIs are flourishing in numbers, their quality has to be in perspective to enhance and maintain competitiveness. Students' point of view has to be considered in the strategic plan of higher education institutions as quality is defined in achieving strategic goals and incorporated stakeholders' perspective in the strategic management of an organization.

6.3 Influence on Managers, Management and Organizations

Public HEIs have a shared context that differs from private HEIs. In this research, an attempt was made to see which quality dimensions are in priority to be improved by public HEIs. These results help the government and management of these institutions to make more educated choices of incorporating these dimensions in their strategic planning. Moreover, students always want reliable and responsive services from HEIs. Other quality service dimensions are needed as well. Student perception of quality service means incorporating all dimensions of service quality with the prominence of reliability and responsiveness in their strategic objectives.

6.4 Research Limitations

Limitations of the study are concerned mostly with the different data collected among different HEIs in different geographical regions. Triangulation of the same scale excluded many related studies which used different scale measures or further specified quality dimensions yielding fewer studies that could be triangulated.

6.5 Suggestions for Further Research

Further research considering SERVQUAL needs to be conducted in the same country with identical questionnaires for both public and private HEIs. Namely to parallel the findings as well as to conduct the study intermittently to measure the progress and change, which occurred overtime with HEIs.

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Appendix A: Questionnaire SERVQUAL adapted to higher education

	Expectation (E)	Performance (P)
Tangibility	1 – Excellent Higher education institutions must have modern equipment, such as laboratories. 2 – Higher education institution installations must be well conserved. 3 – Employees and teachers at excellent institutions of Higher education must present themselves (clothes, cleanliness, etc.) in an appropriate manner for their position. 4 - The material associated with the service provided in excellent institutions of Higher education, such as journals, printed matter, must have a good visual appearance and be up to date.	1 – Your Higher education institution has modern equipment, such as laboratories. 2 – Your Higher education g institution installations are well conserved. 3 – The employees and teachers at your institution of Higher education present themselves (clothes, cleanliness, etc.) in an appropriate manner for their position. 4 - The material associated with the service provided in your institution of Higher education, such as journals, printed matter, has a good visual appearance and is up to date.
Reliability	5 – When excellent institutions of Higher education promise to do something in a certain time, they must do so. 6 – When a student has a problem, excellent institutions of Higher education demonstrate sincere interest in solving it. 7 – Excellent of institutions of Higher education will do the job right the first time and will persist in doing it without error.	5 – When your institution of Higher education promises to do something in a certain time, it does so. 6 – When you have a problem, your institution of Higher education demonstrates sincere interest in solving it. 7 – Your institution of Higher education will do the job right the first time and will persist in doing it without error.
Responsibility	8 – Employees and teachers at excellent institutions of Higher education promise their clients the services within deadlines they are able to meet. 9 – The employees and teachers at excellent institutions of Higher education are willing and available during service providing. 10 – The employees and teachers at excellent institutions of Higher education will always show good will in helping their students. 11 – The employees at excellent institutions of Higher education are always willing to explain doubts their students may have.	8 – Employees and professors at your institution of Higher education promise you the services within deadlines they are able to meet. 9 – The employees and teachers at your institution of Higher education are willing and available during service providing. 10 – The employees and teachers at your institution of Higher education always show good will in helping. 11 – The employees and teachers at your institution of Higher education are always willing to explain your doubts.
Security	12 - The behavior of employees and teachers at excellent institutions of Higher education must inspire confidence in the students. 13 – Students at excellent institutions of Higher education feel safe in their transactions with the institution. 14 - The employees and teachers at excellent institutions of Higher education must be polite to the students. 15 – The employees and teacher at excellent institutions of Higher education must have the knowledge needed to answer student questions.	12 - The behavior of employees and teachers at your institution of Higher education inspire confidence. 13 – You feel safe in your transactions with your institution of Higher education. 14 – The employees and teachers at your institution of Higher education are polite. 15 – The employees and teachers at your institution of Higher education have the knowledge needed to answer your questions.
Empathy	16 – Excellent institutions of Higher education must have convenient business hours for all students 17 – Excellent institutions of Higher education must have employees and teachers who provide individual attention to each student. 18 – Excellent institutions of Higher education must be focused on the best service for their students. 19 – Excellent institutions of Higher education must understand the specific needs of their students.	16 – Your institution of Higher education has convenient business hours for all students. 17 – Your institution of Higher education has employees and teachers who provide individual attention to each student. 18 – Your institution of Higher education is focused on the best service for its students. 19 – Your institution of Higher education understands the specific needs of its students.

Appendix B: Example of Data Tabulation

		Expectations								Perceptions								
		Frequency of Responses								Frequency of Responses								
		1	2	3	4	5	6	7	Average	1	2	3	4	5	6	7	Average	(P-E)
Tangibility	1	0	0	1	2	11	9	5	5.536	6	5	10	8	5	1	0	3.114	**-2.421**
	2	0	0	1	2	7	11	7	5.750	3	6	10	8	3	4	1	3.514	**-2.236**
	3	5	7	7	3	4	0	2	3.071	0	1	4	4	8	14	4	5.200	**2.129**
	4	1	2	2	3	9	6	5	4.964	0	2	2	9	11	9	2	4.829	**-0.136**
															Average tangibility =			**-0.666**
Reliability	5	0	0	0	0	10	7	11	6.036	0	2	7	5	8	11	1	4.647	**-1.389**
	6	0	1	1	5	8	7	6	5.321	1	2	5	10	8	7	2	4.457	**-0.864**
	7	2	1	3	5	6	8	3	4.714	1	1	6	10	11	5	1	4.371	**-0.343**
															Average reliability =			**-0.865**
Promptness	8	0	0	3	0	5	11	9	5.821	0	1	2	13	7	11	1	4.800	**-1.021**
	9	0	2	1	3	1	14	7	5.607	0	1	4	6	11	12	1	4.914	**-0.693**
	10	0	0	1	5	5	8	9	5.679	1	2	8	5	10	8	1	4.400	**-1.279**
	11	0	0	1	2	6	7	12	5.964	1	0	4	7	7	9	7	5.114	**-0.850**
															Average promptness =			**-0.961**
Security	12	0	0	1	2	4	16	5	5.786	2	0	3	10	11	6	3	4.657	**-1.129**
	13	0	0	2	2	5	10	9	5.786	0	1	1	9	9	11	4	5.143	**-0.643**
	14	1	1	2	7	10	4	3	4.714	0	1	5	6	15	3	4	4.765	**0.050**
	15	0	0	1	0	1	6	20	6.571	0	1	2	9	9	10	4	5.057	**-1.514**
															Average security =			**-0.809**
Empathy	16	1	1	2	3	9	8	4	5.071	7	2	6	4	9	4	3	3.857	**-1.214**
	17	4	4	2	5	10	2	1	3.821	2	0	9	8	8	5	3	4.343	**0.521**
	18	0	1	1	2	2	8	14	6.036	1	1	7	10	11	3	2	4.314	**-1.721**
	19	0	0	2	4	10	6	6	5.357	1	4	8	11	7	2	2	3.943	**-1.414**
															Average empathy =			**-0.957**
									Overall average = -0.852									

Povzetek:
Merjenje kakovosti storitev visokošolskih zavodov z modelom SERVQUAL

Raziskovalno vprašanje (RV): V tej raziskovalni analizi smo uporabili orodje SERVQUAL za merjenje kakovosti storitev visokošolskih zavodov (HEIs). Visokošolske zavode smo primerjali z namenom, da ugotovimo, katere so tiste dimenzije kakovosti storitev, ki so potrebne izboljšav v javnih visokošolskih zavodih ter pri zasebnih visokošolskih zavodih. Natančneje smo preučili ali obstajajo skupni trendi pri določeni dimenziji kakovosti storitev, ki jih študentje niso pričakovali in jih tudi manj zaznali.
Namen: Kakovost storitev visokošolskih zavodov je pomemben vidik, ki zagotavlja konkurenčnost in privlačnost na trgu. Študenti so primarni deležniki, zato morajo biti njihova pričakovanja in zaznavanje kakovosti storitev strateški cilj visokošolskega zavoda. Javni visokošolski zavodi imajo drugačno strategijo od zasebnih visokošolskih zavodov. V tej raziskavi smo preučevali to razliko z namenom ugotoviti ali se odraža v določeni dimenziji kakovosti storitev.
Metoda: Raziskava temelji na primerjalnem pregledu raziskovalnih študij, kjer se je uporabljal instrument SERVQUAL za merjenje kakovosti storitev v visokošolskih zavodih. Rezultati, pridobljeni s pregledom literature, so bili triangulirani in analizirani za dimenzije kakovosti storitev, ki so bile skupne pri javnih visokošolskih zavodih in so potrebni izboljšav.
Rezultati: Percepcija študentov pri zagotavljanju kakovosti storitev je bila nižja od pričakovanega. Javni visokošolski zavodi bi morali prednostno obravnavati zanesljivost in odzivnost ter skupaj z drugimi dimenzijami izboljšati kakovosti storitev. SERVQUAL se lahko uporablja za preučevanje in merjenje perspektive študentov, periodično merjenje ter za uresničitev strateških ciljev visokošolskega izobraževanja.
Organizacija in družba: Vpliv raziskave na organizacije in družbo je predvsem pri visokošolskih zavodih, njihovih vodstvenih delavcih ter njihovih načrtih in ciljih za izboljšanje kakovosti.
Originalnost: Ugotovitve na podlagi merilnega orodja SERVQUAL smo primerjali med različnimi visokošolskimi zavodi s pregledom literature s triangulacijskimi tehnikami.
Omejitve/nadaljnje raziskovanje: Omejitve raziskave se nanašajo predvsem na različne podatke, zbrane med različnimi visokošolskimi ustanovami, v različnih geografskih regijah. Triangulacija istega obsega je izključila številne povezane študije, ki so uporabile drugačna merilna orodja oz. dodatne dimenzije kakovosti, kar je onemogočalo vključevanje več raziskav, ki bi se lahko triangulirale. Nadaljnje raziskave bi lahko potekale z zbiranjem podatkov o javnih in zasebnih visokošolskih zavodih v isti regiji in času ter nato ponovitev v različnih časovnih presledkih, z namenom preučevanja napredka oz. spremembe.

Ključne besede: SERVQUAL, visoko šolstvo, javne visokošolske ustanove, triangulacija, kakovost storitev, strateški cilji, percepcije študentov, pričakovanja študentov.

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