Measuring Service Quality in The Context of Higher Education in Vietnam

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Abstract

This paper focuses on the understanding of service quality in the context of Vietnamese universities. It proposes an approach for measuring the quality of the higher education service provided by universities in Vietnam. Firstly, an exploratory study was conducted. Then, the set of items which were generated became the subject of a questionnaire that was then administered to 675 students of a Vietnamese university to determine the dimensions of higher education service quality in this context. The obtained results permit us to appropriate a measurement scale which is slightly different from the SERVQUAL scale widely known as the standard for measuring service quality. The results also show that tangible elements, responsiveness and assurance seem to be three specific dimensions of the higher education service of Vietnamese universities.

Keywords: Higher education, service quality, SERVQUAL, SERVPERF, Vietnam.

1. Introduction

Service quality is regularly considered as a crucial determinant of success and an effective and competitive tool for all service companies. Today, this tool is also used by numerous universities around the world to increase their competitiveness. Indeed, in recent decades, universities have increasingly faced many issues, including the trend of globalization. Facing this reality, they have changed their actions. They think more about students, consider them as major customers and try to satisfy them. Like other service companies, they make efforts to improve the quality of their services. Vietnamese universities are also following this trend. Thus, measuring service quality becomes essential for them, because it ensures the implementation of their actions and strategies to satisfy customers. However, it is unfortunate that such work does not seem to be recognized by most Vietnamese universities yet.

This research aims to analyze service quality in the higher education sector in Vietnam in order to have a better understanding of Vietnamese students' perception of higher education service quality. In addition, through this work, we would like to test the stability of SERVQUAL - the scale developed by Parasuraman et al (1988) for measuring service quality. To achieve these goals, the research is organized around three parts. We firstly present the theoretical framework related to service quality in marketing. Secondly, the methodological choices will be presented and then followed by a discussion of the main results. Finally, we discuss the contributions, limitations and perspectives of present research.

2. Literature review

2.1. Service quality

Service quality is a concept that attracts the attention of many marketing researchers and professionals due to its importance. However, researchers usually deal with great challenges and difficulties in their work of conceptualizing and measuring this concept. One of the first researches which take into account service quality is that of Grönroos (1984). In this research, service quality is understood to depend on two variables: expected service and perceived service. Service quality is then defined as the difference between expectation and service perceived by customers (Parasuraman et al, 1985, 1988; Brown and Swartz, 1989; Teas, 1993). According to this conceptualization, service quality is considered close to the concept of satisfaction that creates the confusion between these two concepts (Cronin and Taylor, 1992). This paradigm of conceptualizing service quality is more dominant in the literature.

Another stream of conceptualizing service quality has emerged from the famous researches of Grönroos (1984) and Parasuraman et al (1985, 1988, 1991a, 1991b). These suggest that service quality can be considered simply as perceived quality, the overall assessment of judgments about service vis-a-vis its relative superiority (Zeitham, 1988, Richard and Robert, 1996), or as an assessment of service excellence (Olivier, 1993). Therefore, when evaluating the service quality of a company, customers implicitly compare their perception to expectation.

2.2. Measuring service quality: SERVQUAL vs. SERVPERF

Despite numerous attempts, it seems that researchers have not been able to arrive at a consensus on the measurement of service quality because of the intangibility, heterogeneity and inseparability of service. A famous measurement tool, which is the most widely used in many studies and in various contexts, is the SERVQUAL scale developed by Parasuraman et al (1988). This tool is designed based on the idea that quality is formed by a comparison between performance and expectation (Parasuraman et al, 1985, 1988).

In their first exploratory research which focuses on the concept of functional quality mentioned by Grönroos (1984), Parasuraman et al (1985) identified ten dimensions of service quality with 97 items (service attributes). Each dimension is formulated by differentiating customer's perception and expectation. The purification of this scale of measurement was then carried out by an empirical research (Parasuraman et al, 1988). This work has allowed researchers to retain 22 items reflecting service quality. These items are grouped into five dimensions: tangibility, reliability, responsiveness, assurance, and empathy. This scale is called SERVQUAL.

According to the SERVQUAL model, the gap between customers' expectations and perceptions of service is measured by a survey in which customers are invited to respond to a standard questionnaire. This includes two main parts: (1) customers' expectations vis-a-vis a specific service, and (2) their evaluation (perception) of the service offered by a company. SERVQUAL's questionnaire is developed on a seven-point Likert scale, which is designed following the procedure suggested by Churchill (1979).

After these first efforts to measure service quality, a large number of studies on service quality were conducted by using the SERVQUAL scale (Crompton and Mackay, 1989; Webster, 1989; Woodside et al, 1989; Bruhn and Georgi, 2000; Candido and Morris, 2000) or by testing its reliability and validity (Babakus and Boller, 1992; Carman, 1990; Finn et al, 1991; Parasuraman et al, 1991a, 1991 b).

However, the generalization of the SERVQUAL scale in different cultural contexts and on various types of service shows its conceptual and methodological problems. The operationalization of service quality and the formula "Perception - Expectation" in the SERVQUAL model have been debated (Carman, 1990; Finn et al, 1991; Vandamme and Leunis, 1993; Peter et al, 1993). Specifically, Cronin and Taylor (1992) find that service quality can be directly influenced by customers' perception of service. It is therefore unnecessary to measure customers' expectation of service quality. The authors have proposed another measure of service quality called SERVPERF, which is seen as a variant of SERVQUAL. By retaining only the part of service experience in SERVQUAL, the advantage of this abbreviated scale is to eliminate half of the items, and thus increase the accuracy of empirical research, as well as the explained variance of service quality. The conclusion of Cronin and Taylor (1992) also received a response from Parasuraman et al

(1994). Indeed, through their research to reassess customers' expectation (which are seen as the standard of comparison for measuring service quality), Parasuraman et al (1994) point out that improving service quality needs to bridge the gap between customers' expectation and their perception score of the service, not the perception itself. Up to now, although numerous studies on service quality have been undertaken to assess the superiority of the two scales, consensus continues to elude us as to which one is the better scale.

2.3. Measuring service quality in the education sector

In recent years, the service quality offered by universities has increasingly attracted the attention of researchers in marketing. Most researchers agree that students are the main consumer group of universities and that universities need to improve the quality of their educational service. In order to do this, they must understand the attributes of quality adopted by their customers (students) (Chua, 2004).

By taking into account the need and the importance of measuring service quality in the education sector, many researches have been conducted (Carman, 1990; Bolton and Drew, 1991; Pariseau and McDaniel, 1997; Ruby, 1998; Barnes, 2007). Most of these researchers use the SERVQUAL model proposed by Parasuraman et al (1988). They focus mainly on the operationalization of service quality or the original dimensions of SERVQUAL/SERVPERF in specific contexts. Some researchers use the adapted version of SERVQUAL to measure students' experience of educational service (Hill, 1995; Cuthbert,

1996). In the researches conducted, the stability of the scale for measuring service quality in different contexts is also discussed differently. However, researchers seem to agree that SERVQUAL and its variant SERVPERF are powerful tools for measuring and assessing service quality in higher education sector (Barnes, 2007).

3. Methodology

This research aims to understand the perception of service quality and to test the stability of SERVQUAL in the higher education sector in Vietnam. More specifically, it aims to verify the adequacy of the five dimensions of service quality identified by Parasuraman et al (1988) in this context. Such research requires the adaptation and validation of the measurement instrument. Therefore, a methodological approach inspired by the paradigm of Churchill (1979) is chosen. Thus, this research is divided into two phases. The first phase is an exploratory study supported by an extensive review of the literature. This phase is necessary because up to now, very little research on service quality in the Vietnamese educational sector has been conducted. A multifaceted research on this topic can help us better understand students' perceptions of higher education service in the Vietnamese context. In addition, this exploratory phase is also important to adapt the measurement instrument to the research context. In the second phase, which is quantitative by nature, a survey was conducted. This phase's goal is to validate the measurement instrument built in the first phase.

3.1. Exploratory study

3.1.1. Qualitative phase

In this exploratory phase, we performed a qualitative study for the first step. The goal of this study is to gather ideas to adapt the original scale SERVQUAL to our research context. Thus, ten individual semi-structured interviews were conducted with students of University A - a public university located in Hanoi[1]. The interviews were focused on five dimensions of service quality taken from the literature. Each interview was conducted and recorded by the researcher herself. The records were then manually transcribed, and analyzed using a thematic content analysis framework. In this phase, we conducted both vertical and horizontal analysis, which has allowed us to identify common themes and differences between participants (Bardin, 2007).

Through this qualitative exploratory study, we find that all five dimensions of service quality identified by Parasuraman et al (1988) seem to be found in the Vietnamese higher education context. However, the statements reflecting emerged dimensions are different from those identified in SERVQUAL and the number of items we have obtained is much larger (the number of items identified in SERVQUAL is 22, while 54 emerged in this qualitative study). These differences can be explained by the exploratory nature of this research phase.

3.1.2. Quantitative exploratory phase

The results of the qualitative study allowed us to develop a questionnaire which was administered to students of University A during the last three weeks of September 2010. This exploratory quantitative study aimed to test the first version of the measurement tool to make sure of its quality and to improve it, if needed. The objective was then to purify items by eliminating those that are biased and non-parametric and to examine the quality of questions in this first version of the questionnaire. In order to do this, a descriptive statistical analysis and a test of normality using the Skewness and Kurtosis of the distribution were done. Then, the exploratory factor analysis (EFA) by the method of principal component analysis (PCA) with varimax rotation was conducted using SPSS 16.

By taking into account the results of the quantitative exploratory study, we reduced the number of items reflecting different dimensions of service quality from 54 to 32. All items selected were introduced in a new version of the questionnaire using a seven-point Likert scale. We then conducted a pretest of the questionnaire in which the questionnaire was administered to three students to recheck for specific wording problems. We finally obtained the final questionnaire which was used in our official survey.

3.2. Definitive quantitative research

3.2.1. Data collection

The final questionnaire was self-administered to 675 students from second to fourth year at University A in November 2010. There were 581 completed questionnaires returned, but only 394 of them were usable for data analysis.

3.2.2. Quality of the measurement instrument

In this definitive quantitative phase, we aimed to test the purification of the measurement instrument. Following the

Table 1: PCA's results and measurement reliability

Factorial axes	Items	Communalities	Factor loading	Cronbach's alpha
F1 (Assurance)	Professors/lecturers have a lot of experience (Q1)	0.609	0.771	0.716
	Professor/lecturers have good professional knowledge (Q27)	0.548	0.724	
	Professors/lecturers have good teaching skills (Q10)	0.568	0.707	
	Professors/lecturers are enthusiastic (Q19)	0.539	0.676	
F2 (Tangibles elements)	The university's courtyard is small (Q3)	0.714	0.830	0.750
	The university's library is small compared to the number of its students (Q7)	0.655	0.790	
	The campus is small compared to the number of students (Q12)	0.661	0.769	
F3 (Responsiveness)	Employees in administrative services are not enthusiastic (Q30)	0.691	0.820	0.719
	Employees in administrative services are not friendly (Q28)	0.686	0.811	
	The university's administrative procedures are complicated (Q11)	0.550	0.677	
F4 (Responsiveness)	Security guards are responsible (Q14)	0.773	0.870	0.690
	Security guards are enthusiastic (Q5)	0.756	0.862	
	Cleaners are enthusiastic (Q23)	0.583	0.534	
F5 (Assurance)	Professors/lecturers respond insufficiently to students' questions (Q17)	0.670	0.792	0.602
	Students' questions are not answered in a timely manner by Professors/lecturers (Q8)	0.698	0.793	

recommendations of Anderson and Gerbing (1988) and Gerbing and Hamilton (1996), we firstly conducted an exploratory factor analysis, and then a confirmatory factor analysis.

Exploratory factor analysis

The objective of exploratory factor analysis (EFA) is to reduce the number of dimensions necessary to describe the relationships among variables. In other words, in the exploratory quantitative phase, we performed an EFA in order to eliminate items which do not strongly reflect service quality and identify its dimensions in our research context. However, in their work to update the paradigm of Churchill (1979), Anderson and Gerbing (1988) and Gerbing and Hamilton (1996) suggest that researchers can conduct a series of EFA before the confirmatory analysis phase. For this reason, in this definitive quantitative research, we decided to make another EFA by the technique principal component analysis (PCA) with varimax rotation to purify the irrelevant items. This EFA is important because the EFA conducted during the exploratory quantitative phase did not allow us to eliminate irrelevant items because of the small sample.

The 32 items remaining after the exploratory quantitative phase were introduced in this phase of EFA. The result of the PCA led us to retain five factorial axes including 15 items reflecting service quality. These five factors explain 63.97% of the total variance. The reliability indicator - Cronbach's alpha - of each factor is greater than 0.6. Based on the definition of service quality dimensions provided by Parasuraman et al (1988), we have found that the retained factors (Table 1) tend to replicate three dimensions of service quality in the SERVQUAL scale: Assurance (F1, F5), Tangible Elements (F2), Responsiveness (F3, F4). However, the items constituting these dimensions in our research context are different from the original SERVQUAL items. Two other dimensions, namely reliability and empathy, did not emerge in our study.

Confirmatory factor analysis

In order to validate the service quality measurement instrument identified through EFA, we conducted a confirmatory factor analysis (CFA) on AMOS software (version 16.0). This analysis is an application of the methods of structural equations which can certify the psychometric quality of the results obtained from the EFA. Since the result of PCA shows that the dimensions of assurance and responsiveness of service quality seem to be bi-dimensional constructs, the measurement model of service quality in our research context is then of second order. This model was estimated by the method of maximum likelihood. For assessing the structural model fit to the data, we used various indicators: absolute fit indices (CMIN/DF, GFI, AGFI, and RMSEA), incremental fit (CFI) and parsimony fit index (CAIC).

After the procedure of CFA[2], one factor (F4) and six other items (Q19 and Q11) were rejected in order to perform the model fit. We finally obtained the measurement model of service quality in our research context with four factors and 10 items which are grouped in three dimensions. In fact, the result of the measurement model testing shows that those factors of the measurement model are

Figure 1: Measurement model of higher education service quality
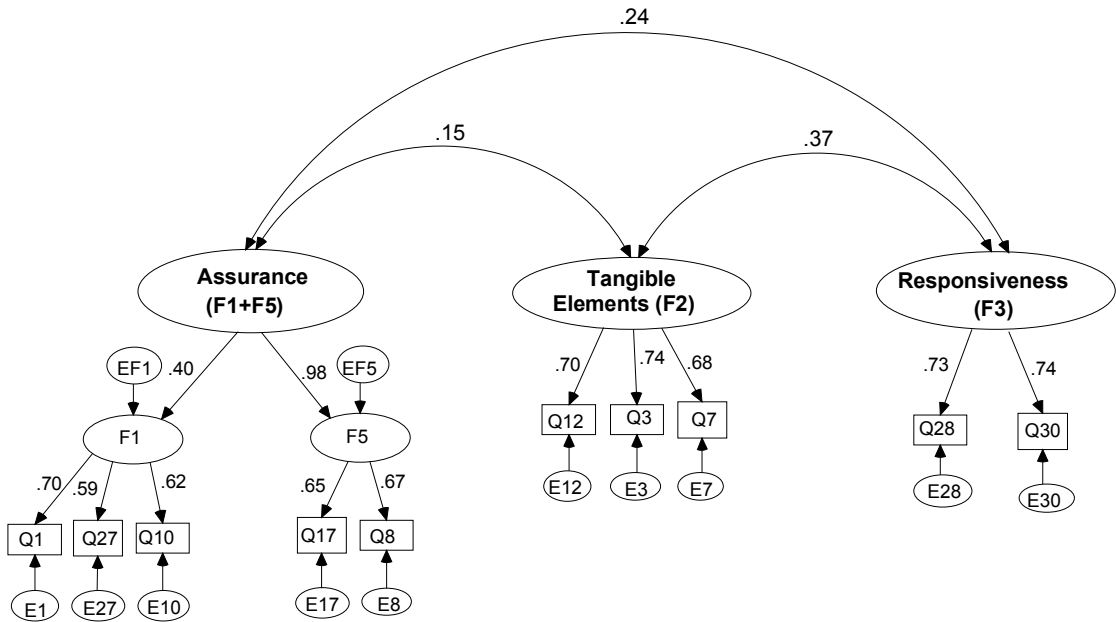
correlated with each other (Figure 1). Moreover, all fit indices exceed the acceptable thresholds we proposed (Table 2).

Reliability and validity of the measurement scale

With the results of the CFA, we finally assessed the reliability and validity of measurement scales by calculating:

- Jöreskog's rho coefficient (Jöreskog, 1971) (ρ): this coefficient allows us to justify the reliability of the internal validity of the measurement scale. According to Roussel et al (2007), in order to ensure the reliability of the measurement instrument, this indicator must be greater than or equal to 0.7.

-The Rho of convergent validity (Fornell and Larker, 1981) (ρvc) which is the average variance extracted (AVE) value of constructs

-The discriminant validity which is assessed by comparing the average extracted variance

Table 2: Fit indices of the measurement model

Indices	Chi square	Degree of freedom	P	CMIN/DF	CFI	RMSEA
Acceptable threshold	>>	> 0	≤ 0.05	≤ 3	≥ 0.9	≤ 0.08
Value	34.050	30	.000	1.135	.994	.019

Table 3: Scale for measuring the quality of higher education service

Measurement scales	Reliability	Converg validity	Discrim validity
	ρ	ρvc	$\rho vc - \varphi^2$
➢ **Tangible elements (F2)**	**0.752**	**0,502**	**0.480** *(a)*
1. The university's courtyard is small (Q3)			**0.366** *(b)*
2. The university's library is small compared to the number of its students (Q7)			
3. The campus is small compared to the number of students (Q12)			
➢ **Responsiveness (F3)**	**0.704**	**0,543**	**0.486** *(c)*
1. Employees in administrative services are not enthusiastic (Q30)			**0.406** *(d)*
2. Employees in administrative services are not friendly (Q28)			
➢ **Assurance (F1+F5)**	**0,784**	**0,421**	**0.399** *(e)*
			0.363 *(f)*
F1 (ρvc =0,409)			*0,259*
1. Professors/lecturers have a lot of experience (Q1)			
2. Professor/lecturers have good professional knowledge (Q27)			
3. Professors/lecturers have good teaching skills (Q10)			
F5 (ρvc =0,442)			*0,292*
1. Professors/lecturers respond insufficiently to students' questions (Q17)			
2. Students' questions are not answered in a timely manner by Professors/lecturers (Q8)			

Note:

- *(a): Difference between the variance explained by the dimension of tangible elements and the variance this construct shares with the dimension of assurance.*

- *(b): Difference between the variance explained by the dimension of tangible elements and the variance this construct shares with the dimension of responsiveness.*

- *(c): Difference between the variance explained by the dimension of responsiveness and the variance this construct shares with the dimension of assurance.*

- *(d): Difference between the variance explained by the dimension of responsiveness and the variance this construct shares with the dimension of tangible elements.*

- *(e): Difference between the variance explained by the dimension of assurance and the variance this construct shares with the dimension of tangible elements.*

- *(f): Difference between the variance explained by the dimension of assurance and the variance this construct shares with the dimension of responsiveness.*

of each latent variable with the squared correlation ($\varphi2$) shared with other latent variables (Fornell and Larker, 1981).

Table 3 summarizes the number of items and the results of the reliability and validity tests. The indicator of internal consistency reliability (ρ) of all instruments in our research is greater than 0.7, which shows that items specified in the measurement models of these constructs represent them well. In addition, the test of discriminant validity of these constructs is positive: the explained variance is greater than the variance shared with other constructs in the concept's measurement model. It means that these constructs can be grouped with other constructs to provide a more reliable measure of the concept.

4. Results and discussion

Many methodological approaches have been developed and implemented to validate the scale for measuring service quality in the context of the Vietnamese higher education sector. The obtained results show that the scale measuring service quality developed in our research is not completely consistent with the scales developed in the literature. The study results have allowed us to better understand Vietnamese students' perception of the quality of higher education service.

4.1. Important aspects of higher education service

Responsiveness, tangible elements and assurance seem to be important aspects of service quality in our research context, while other aspects (empathy and reliability) which regularly appeared in the literature, did not emerge in our research. The characteristics of

the higher education service in Vietnamese context could explain this difference. Indeed, the Vietnamese higher education sector is not yet competitive and Vietnamese universities are not real service companies. The services offered by these universities mainly includes core services which aim to satisfy students' basic need, and some peripheral services. Vietnamese students themselves do not expect too much of peripheral services (such as those which constitute the dimensions of reliability and empathy of service quality) provided by universities.

4.2. Students evaluation of service quality

This research also shows that students at University A are, in general, slightly satisfied with the higher education service they received (mean score (r) = 4.49). Among three dimensions of service quality, they are most dissatisfied with tangible elements (r = 3.44). Their undervaluation is associated with the university's campus, courtyard and library. However, students are slightly happy with the dimension of responsiveness (r = 4.40). Specifically, they are strongly satisfied with the dimension of assurance (r = 6.30).

The collected data, which is quite abundant, allowed us to exploit further results. Indeed, from this data, we can classify students in our sample into different groups according to their promotion and faculty. The t-test for independent samples (Independent sample t test) was performed. The obtained results show the difference in the evaluation of two dimensions (tangible elements and responsiveness) of the higher education service quality between students of different levels. The fourth-year students seem to perceive the dimension of responsiveness less

positively than other student groups. Nevertheless, for them, the tangible elements are perceived more positively than for students of other levels. The test's results also show that there was no significant difference in evaluating the quality of higher education service between students from different faculties.

5. Contributions, limitations and prospects for future research

From a managerial point of view, the scale for measuring service quality developed in this research could be a useful tool to help Vietnamese university managers control the quality of their higher education service. Indeed, our research shows that Vietnamese students pay attention to three dimensions in assessing their university's service quality: responsiveness, tangible elements and assurance. The dimension of responsiveness of service quality refers to the willingness and readiness of staff to serve and respond to customers (Parasuraman et al, 1988). In our research context, it strictly concerns the attitude of a university's administrative employees. It suggests that in order to improve the quality of higher education service, Vietnamese university managers should focus more on measures to improve the attitude of their employees. Internal marketing activities should also be strengthened in Vietnamese universities. In addition, in order to minimize students' dissatisfaction due to their negative perception of higher education service quality, Vietnamese universities should improve tangible elements associated with their higher education service, such as the campus, court or library of the university. Finally, since Vietnamese students pay particular attention to lecturers' skills and competences, university managers should constantly seek measures to encourage lecturers to improve their skills and competences.

Thus, the scale developed in our research will provide a set of managerial contributions for universities. However, our research is still exploratory, due to its limitations. The main limitation of this work lies in our field of study. Indeed, in this empirical research, we have only worked on service quality perceived by students of one Vietnamese university (University A), which raises the question of generalizing the findings and then reduces the external validity of our research.

Another limitation of our study is related to the convergent validity (ρvc) of the constructed scale to measure the construct "assurance". In fact, its level of explained variance is less than 0.5. It means that over 50% of the items specified in the measurement model are not explained by this construct, which is a limit of our research.

The limitations we have presented give some perspectives for future researches. In fact, future researches may extend the research field. In this sense, they can diversify and expand the field of study, to other Vietnamese universities, for example. They could also investigate the perceived service quality of other university stakeholders, such as students in master's programs, parents of students... In addition, as we pointed out, the scale developed in this research needs to be improved. Since the measures relating to service quality are specific and contextual, it is necessary that future researches build multiple measures (several methods, several items), in order to ensure their quality (reliability and validity). Such researches will help further validate our findings by establishing the quality of higher education's criterion-based validity.

Notes:

1. University A is one of the top largest and most distinguished universities in Vietnam. Known as a Vietnamese multidisciplinary technical university, it has a total of 30,000 students both undergraduate and graduate. Although it now ranks first in technology training universities in Vietnam (its training include IT, Telecom technical, multimedia…), this university becomes more and more stronger in economic training area (business administration, marketing, finance…).

2. We conducted CFA for the dimensions of assurance (F1, F5) and responsiveness (F3, F4) for testing their measurement model before conducting CFA for testing the overall measurement model of service quality.

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