

Measuring Perceived Service Quality Using SERVQUAL: A Case Study of the Croatian Hotel Industry

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The purpose of the study is to examine customers' perceptions of service quality in the Croatian hotel industry. The aim is to assess the perceived service quality of hotel attributes and to determine the factor structure of service quality perception. A modified SERVQUAL scale was used to assess service quality perceptions from the perspective of domestic and international tourists. Data were collected in 15 hotels in the Opatija Riviera (Croatia), using a self-administered questionnaire. Descriptive statistical analysis, exploratory factor analysis and reliability analysis were conducted. The study results indicate the rather high expectations of hotel guests regarding service quality. 'Reliability,' 'empathy and competence of staff,' 'accessibility' and 'tangibles' are the key factors that best explained customers' expectations of hotel service quality. The results of the quantitative assessment of perceived service quality may provide some insights on how customers rate the service quality of a particular hotel. Thus, the findings can be used as a guide for hotel managers to improve the crucial quality attributes and enhance service quality and business performance.

Key words: service quality, SERVQUAL, factor analysis, reliability analysis, hotel industry

Introduction

In the highly competitive hotel industry, service becomes one of the most important elements for gaining a sustainable competitive advantage in the marketplace. Consequently, the efforts of service managers and academic researchers are directed towards understanding how customers perceive the quality of service.

Customers are likely to view services as a variety of attributes that may, in different ways, contribute to their purchase intentions and perceptions of service quality. Although researchers (Grönroos 1984; Parasuraman, Berry and Zeithaml 1985, Parasuraman, Zeithaml and Berry 1988; Zeithaml, Parasuraman and Berry 1990) have focused

on different aspects of service quality, they all agree that the emphasis should be on customers. The most common definition of the concept is attitude, which results from a comparison of customers' expectations with perceptions of performance (Parasuraman, Berry and Zeithaml 1985, Parasuraman, Zeithaml and Berry 1988). What is more, customers perceive service quality as a multidimensional concept.

The specific nature of services makes it difficult to provide, measure and maintain their quality. However, Parasuraman Berry and Zeithaml and Parasuraman, Zeithaml and Berry (1985, 1988) presented the *SERVQUAL* scale, which became the most popular instrument for measuring service quality. The model has been applied in various service industries, including tourism and hospitality. In most of the researches the instrument was modified to suit the features of a specific service.

The study has several objectives. The first objective is to determine the level of perceived service quality in Croatian hotels. The second aim is to establish the number of dimensions of perceived service quality in the hospitality industry, using the modified *SERVQUAL* model. Finally, the third objective is to test the reliability of the modified *SERVQUAL* model.

Conceptual Background

PERCEIVED SERVICE QUALITY

The service quality construct is mostly conceptualized in the context of service marketing literature (Lee, Lee and Yoo 2000). Therefore, it deals with the concept of perceived service quality. According to Zeithaml, Parasuraman and Berry (1990), perceived service quality is the extent to which a firm successfully serves the purpose of customers.

Customers determine the perceived or cognitive value of service based on their experience with the service delivered. Ghobadian, Speller and Jones (1994) stated that customers' expectations, service delivery process and service outcome have an impact on perceived service quality. Yoo and Park (2007) found that employees, as an integral part of the service process, are a critical element in enhancing perceived service quality. Furthermore, Edvardsson (2005) pointed out that service quality perceptions are formed during the production, delivery and consumption process. The author concluded that customers' favorable and unfavorable experience, as well as their positive and negative emotions may have an important impact on

perceived service quality. Similarly, O'Neill and Palmer (2003) have reported that customers' perceptions of service quality may, to a large extent, be influenced by the degree of their prior experience with a particular service.

In the hospitality industry, several studies have examined hotel attributes that guests may find important when evaluating the performed service quality. Literature review suggests that cleanliness (Atkinson 1988; Knutson 1988; Gundersen, Heide and Olsson 1996), security and safety (Atkinson, 1988; Knutson, 1988; Gundersen et al. 1996), employees' empathy and competence (Atkinson 1988; Knutson 1988; Barsky and Labagh 1992; Gundersen, Heide and Olsson 1996; Choi and Chu 2001; Marković 2004), convenient location (Knutson 1988; Barsky and Labagh 1992), value for money (Atkinson 1988; Gundersen, Heide and Olsson 1996; Choi and Chu 2001) and physical facilities (Choi and Chu 2001; Marković 2004) are attributes that hotel guests perceive as being important.

It should be noted that according to some authors, perceived service quality has been accepted as an antecedent of customer satisfaction (Churchill and Suprenant 1982; Oliver 1997). What is more, Rowley (1998) argued that perceived service quality is an attitude related to, but not the same, as satisfaction. It is evident that the relationship between these two concepts is complex and that they have a causal ordering.

SERVICE QUALITY MEASUREMENT

One of the main research instruments for measuring quality in service industries is the SERVQUAL model, developed by Parasuraman Berry and Zeithaml and Parasuraman, Zeithaml, and Berry (1985; 1988). The model contains 22 items for assessing customer perceptions and expectations regarding the quality of service. A level of agreement or disagreement with a given item is rated on a seven-point Likert-type scale. The level of service quality is represented by the gap between perceived and expected service. The SERVQUAL model is based on five service quality dimensions, namely tangibles (physical facilities, equipment and personnel appearance), reliability (ability to perform the promised service dependably and accurately), responsiveness (willingness to help customers and provide prompt service), assurance (knowledge and courtesy of employees and their ability to gain trust and confidence) and empathy (providing individualized attention to the customers).

During the last few years a variety of service quality studies have been conducted (Ladhari 2008). Among others, service quality was

measured in: accounting and audit firms (Ismail 2006), health spas (Snoj and Mumel 2002; Marković, Horvat and Raspor 2004), higher education (Russel 2005; Marković 2006), hotels (Marković 2003, 2004; Juwaheer 2004; Wang, Wang and Zhao 2007; Raspor 2009), insurance (Tsoukatos, Marwa and Rand 2004), public-transport (Sánchez Pérez 2007), restaurants (Andaleeb and Conway 2006; Namkung and Jang 2008), travel agencies (Martinez Caro and Martinez Garcia 2008), and web-sites (Parasuraman, Zethaml and Malhotra 2005; Nusair and Kandampully 2008).

Despite its wide usage, the model has been criticized by a number of academics (Carman 1990; Babakus and Boller 1992; Teas 1994). Criticism was directed at the conceptual and operational base of the model, mostly its validity, reliability, operationalization of expectations, and dimensional structure. However, there is general agreement that *SERVQUAL* items are reliable predictors of overall service quality (Khan 2003).

As a result of these criticisms, alternative measures of service quality for specific service settings were developed. In the tourism and hospitality industry, Knutson et al. (1991) developed *LODGSERV*, a model utilized to measure service quality in the lodging industry. The model is based on five original *SREVQUAL* dimensions and contains 26 items. Getty and Thompson (1994) introduced another specific model for hotel settings, called *LODGQUAL*, as did Wong Ooi Mei, Dean and White (1999) who developed a *HOLSERV* model. The *LODGEQUAL* model identified three dimensions, namely tangibles, reliability and contact. On the other hand, the *HOLSERV* model includes 27 items, grouped in five original *SERVQUAL* dimensions. Furthermore, *DINESERV* is a model used for measuring restaurant service quality (Stevens, Knutson and Patton 1995). It contains 29 items and five *SERVQUAL* dimensions. O'Neill et al. (2000) developed the *DIVEPERF* model for assessing perceptions of diving services. The model consists of five *SERVQUAL* dimensions and 27 items. *ECOSERV* was introduced by Khan (2003). It was utilized to measure service quality expectations in eco-tourism, using 30 items and five *SERVQUAL* dimensions. All of these models represent modifications of the *SERVQUAL* instrument, aiming to improve its original methodology.

However, Cronin and Taylor (1992) argued that performance is the measure that best explains customers' perceptions of service quality, so expectations should not be included in the service quality measurement instrument. They developed a performance-only scale called *SERVPERF* and tested it in four industries. Results indicated

that the SERVPERF model explains more of the variation in service quality than SERVQUAL; it had an excellent fit in all four industries and it contains only half the number of items that must be measured. These results were interpreted as additional support for the superiority of the SERVPERF approach to the measurement of service quality.

Several authors used the performance-only approach to assess service quality in tourism and hospitality settings. Travelers' perceptions of hotel attributes were measured in Hong Kong's hotels (Choi and Chu 2001), hotels of Mauritius (Juwaheer 2004) and Malaysian hotels (Poon and Lock-Teng Low 2005).

The question of whether service quality should be measured as the difference between customers' perceptions and expectations, or whether some alternative approach is more appropriate remains part of an extensive debate in service quality literature.

Methodology

Hotel guests' perceptions were measured with a self-administered questionnaire. The questionnaire was developed on the basis of a literature review and adopted to suit the specific features of a hotel setting (Parasuraman, Zeithaml and Berry 1988; Zeithaml et al. 1990; Snoj and Ogorelc 1998; Pizam and Ellis 1999; Marković 2003). As a foundation for questionnaire development, the SERVQUAL model was used. The original items were slightly modified to suit the hospitality setting. For example, instead of 'xyz Company has modern-looking equipment,' the statement was modified to the 'Hotel has modern-looking equipment.' The original item 'Guests feel safe in their transactions with employees' was replaced by the item 'Guests feel safe and secure in their stay.' The reason for this change is the confusing meaning of the word 'transactions' and the fact that safety and security are regarded as an important factor in a hotel stay. Moreover, in order to measure attributes specific to the hotel environment, the following items were added: 'parking area' (Pizam and Ellis 1999), 'appropriate location,' 'available and clear information,' 'variety of facilities' (Snoj and Ogorelc 1998), 'clean and tidy hotel,' 'feeling safe and secure,' 'ease of finding a way around the hotel' and 'typical service quality for hotel category' (Marković, 2003). All the statements in the questionnaire were positively worded. Finally, the modification resulted in the deletion of one original SERVQUAL item and the inclusion of eight new items, leaving a total of 29 hotel attributes. These attributes represented seven dimensions: five original SERVQUAL dimensions (tangibles, reliability, responsiveness, as-

surance, empathy) and two new dimensions, named as accessibility and output quality.

The questionnaire consisted of two parts. The first part measured guests' perceptions of hotel attributes using a modified SERVQUAL model. Service quality perceptions were measured on a seven-point Likert-type scale ranging from 1 'strongly disagree' to 7 'strongly agree.' The second part was designed to capture respondents' demographic and traveling characteristics, which included country of residence, age, gender, purpose of visit, duration of staying at a hotel, level of education, and hotel category.

The target population of the survey was guests staying in hotels on the Opatija Riviera (Croatia) during the summer of 2007. Questionnaires were distributed in 15 (2-, 3- and 4-star) hotels, after hotel managers agreed to participate in the study. Reception desk employees were asked to administer the questionnaires to guests during their hotel stay, and to collect them after completion. In each hotel questionnaires were randomly distributed to the guests. Of 265 returned questionnaires, 12 were not included in the analysis because of incompleteness. Thus, data analysis is based on a sample of 253 valid questionnaires. The response rate was 26 per cent.

Descriptive statistical analysis was used to describe respondents' demographic characteristics and to evaluate service quality perceptions of hotel guests. An exploratory factor analysis was performed on the 29 perception attributes included in the questionnaire in order to determine underlying dimensions of hotel service quality perceptions. Principal component analysis with varimax rotation was conducted. Items with eigenvalues equal to or greater than 1, factor loadings above 0.4, and factors which contain at least three items were retained (Hair et al. 2006). Furthermore, a reliability analysis was performed to test the reliability of the scale and inner consistency of extracted factors. For this purpose, Cronbach's alpha coefficients were calculated.

Results

In order to achieve the study's goals, descriptive analysis, factor analysis, and reliability analysis were performed. The results are presented as follows. First, respondents' demographic and traveling characteristics are provided. Next, the results of descriptive analysis of guests' perceptions are presented. Third, the results of factor and reliability analyses are interpreted. The statistical analysis was conducted on 253 valid questionnaires.

The demographic and traveling characteristics of the respondents

TABLE 1 Demographic profile of the respondents

Items	Percentage	Items	Percentage
<i>Gender</i>		<i>Age</i>	
Male	51.8	16–25	3.6
Female	48.2	26–35	15.4
<i>Purpose of visit</i>		36–45	26.1
Business	9.1	46–55	19.4
Visit friends, relatives	4.3	56–65	25.7
Vacation	86.2	66 and above	9.9
Others	0.4	<i>Country of residence</i>	
<i>Level of education</i>		Austria	11.1
Primary school	3.6	Croatia	16.6
Secondary school	29.2	Italy	20.9
Higher education	24.1	Germany	14.6
University and above	36.4	Others	36.8
Others	6.7	<i>Hotel category</i>	
<i>Duration of staying at a hotel</i>		4-star	53.3
1–3 days	19.0	3-star	33.3
4–7 days	49.8	2-star	13.4
8–15 days	28.1		

are presented in table 1. The sample included domestic (16.6 per cent) and international tourists (83.4 per cent). There were slightly more males (51.8 per cent) than females (48.2 per cent), and most of the respondents (55 per cent) were older than 46 years. More than 60 per cent of hotel guests in the sample had a university or college education. About 86 per cent of the respondents indicated that the main purpose of their visit was vacation. Most of them stayed at a 4-star hotel, for between four and seven days.

The results of the descriptive statistical analysis of guests' perceptions in the hotel industry are shown in table 2.

The range of service quality perceptions items was from 1 (very low perceptions) to 7 (very high perceptions). The mean scores of guests' perceptions ranged from 4.77 to 6.34. The lowest perception item was 'offering a variety of facilities,' which indicates that hotels do not provide enough suitable facilities that could enhance hotel quality. On the other hand, hotel guests' highest perceptions were regarding the 'ease of finding a way around the hotel,' Furthermore, guests highly assessed the following hotel attributes: 'feeling safe and secure,' 'willingness for helping guests' and 'courteous hotel staff.' These indicate that a hotel's staff has one of the crucial roles in

TABLE 2 Average scores of service quality perceptions in hotel settings

Attributes	Mean	St. dev.
v1 Modern-looking equipment	5.31	1.48
v2 Visually appealing physical facilities	5.53	1.23
v3 Neat hotel staff	6.13	0.90
v4 Visually appealing materials (pamphlets, web-sites)	5.53	1.23
v5 Clean and tidy hotel	6.06	1.05
v6 Appropriate location	6.19	1.00
v7 Parking area	4.96	1.87
v8 Performing service in the promised time	5.98	0.93
v9 Interest in solving guests' problems	6.09	1.00
v10 Performing services right the first time	5.99	0.89
v11 Service without delays	6.02	0.84
v12 Error-free service	5.81	0.98
v13 Knowing the exact time when service will be performed	6.00	0.90
v14 Hotel staff provides prompt service	5.98	0.91
v15 Willingness to help guests	6.25	0.80
v16 Hotel staff has time to answer guests' questions	6.13	0.94
v17 Hotel staff instills confidence	6.14	0.92
v18 Courteous hotel staff	6.25	0.82
v19 Hotel staff has knowledge to answer questions	5.99	0.90
v20 Feeling safe and secure	6.29	0.81
v21 Providing individual attention	5.81	1.03
v22 Convenient opening hours	5.94	1.01
v23 Hotel staff provides personal attention	5.86	0.98
v24 Guests' best interests at heart	6.02	0.87
v25 Understanding guests' specific needs	5.86	1.01
v26 Ease of finding one's way around the hotel	6.34	0.85
v27 Available and clear information in the hotel	6.17	0.89
v28 Offering a variety of facilities	4.77	1.66
v29 Typical service quality for hotel category	6.03	1.09
Overall mean for 29 attributes	5.92	

performing high service quality. The overall mean score for service quality perceptions items was 5.92. This score indicates rather high perceptions of hotel guests regarding service quality.

The exploratory factor analysis extracted five factors, which accounted for 65.1 per cent of variance in the data. Since the fifth factor contained only two items, it could not be considered as a factor and is not interpreted. The results are presented in table 3.

Most of the factor loadings were greater than 0.60, implying a rea-

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Factor analysis and reliability analysis results of hotel guests' perceptions ($n = 253$)

Items ($n = 29$)	Factors					Communalities
	F1	F2	F3	F4	F5	
v9	0.751					0.688
v12	0.732					0.703
v13	0.671					0.595
v11	0.658					0.675
v10	0.648					0.615
v14	0.623					0.664
v22	0.623					0.557
v8	0.586					0.584
v3	0.505					0.614
v25		0.731				0.793
v16		0.725				0.748
v23		0.723				0.776
v21		0.713				0.711
v19		0.688				0.616
v17		0.632				0.688
v27		0.622				0.683
v6			0.693			0.580
v26			0.686			0.625
v20			0.618			0.679
v18			0.554			0.685
v5			0.549			0.509
v24			0.537			0.632
v29			0.529			0.447
v15			0.482			0.598
v2				0.784		0.778
v1				0.748		0.723
v4				0.501		0.562
v28					0.771	0.684
v7					0.675	0.669
Eigenvalue	5.551	4.953	4.284	2.577	1.514	18.879
% of Variance	19.142	17.079	14.774	8.887	5.222	65.104
Cronbach alpha	0.916	0.917	0.869	0.785	—	0.953
Number of items	9	7	8	3	2	

sonably high correlation between extracted factors and their individual items. The communalities of 29 items ranged from 0.447 to 0.793 indicating that a large amount of variance has been extracted by the factor solution. Only one item ('typical service quality for hotel category') was below the suggested value of 0.50 (Hair et al., 2006).

The four remaining factors are labeled as follows: F_1 – ‘reliability’ (solving guests’ problems and performing error-free service at promised time), F_2 – ‘empathy and competence of staff’ (staff knowledge and ability to provide individual attention), F_3 – ‘accessibility’ (appropriate location of the hotel and ease of communication and finding the way around the hotel) and F_4 – ‘tangibles’ (appearance of the facilities, equipment and communication materials). The first factor contains most of the items and explains most of the variance. Thus, hotel service reliability is an important determinant of perceived service quality.

The results of the reliability analysis showed that Cronbach’s alpha coefficients of the extracted factors ranged from 0.785 to 0.917. That is well above the minimum value of 0.60, which is considered acceptable as an indication of scale reliability (Hair et al. 2006). Thus, these values suggest good internal consistency of the factors. Finally, Cronbach’s alpha value for the overall perception scale is 0.953 and indicates its high reliability.

Discussion and Conclusion

Perceptions of hotel service quality are the degree to which hotel guests find various hotel attributes important in enhancing their satisfaction with the hotel stay. In the present study, it was revealed that the main dimensions of perceived service quality in hotels are ‘reliability,’ ‘empathy and competence of staff,’ ‘accessibility,’ and ‘tangibles.’ Two of these are similar to the *SERVQUAL* model, while others overlap with the original *SERVQUAL* dimensions.

However, the studies conducted in the hotel sector identified different outcomes with regard to the number and interpretation of dimensions guests use to assess perceived hotel service quality. Akan (1995) reported a seven-dimension structure, labeled as ‘courtesy and competence of the personnel,’ ‘communications and transactions,’ ‘tangibles,’ ‘knowing and understanding the customer,’ ‘accuracy and speed of service,’ ‘solutions to problems’ and ‘accuracy of hotel reservations.’ Wong Ooi Mei et al. (1999) identified ‘employees,’ ‘tangibles’ and ‘reliability’ as key dimensions of service quality in the hospitality industry. Moreover, Choi and Chu (2001) reported the following seven dimensions: ‘staff service quality,’ ‘room qualities,’ ‘general amenities,’ ‘business services,’ ‘value,’ ‘security’ and ‘*1DD* facilities,’ Marković (2003) identified a three-dimension solution, interpreted as ‘empathy and assurance of hotel staff,’ ‘reliability,’ and ‘physical quality.’ This implies that the number and definition of the dimensions depend on the measurement context.

Furthermore, the findings of this study reveal that among the four dimensions, 'reliability' has emerged as the most important predictor of perceived service quality. In the hospitality industry, this dimension refers to solving guests' problems, performing error-free service at the promised time, providing prompt service, convenient opening hours of hotel facilities. This finding is similar to Knutson et al. (1991) and Juwaheer's (2004) research conducted in hotel settings.

The indicators of factor and reliability analyses are also consistent with similar studies conducted in the hospitality industry. The proposed factor structure of the present study, as well as in the studies conducted by Choi and Chu (2001) and Marković (2003) have explained the rather high percentage of variance in original data – 65.1 per cent, 67.2 per cent and 73.9 per cent, respectively. The Cronbach alpha values are 0.95 (this study), 0.94 (Choi and Chu 2001) and 0.92 (Marković 2003) and indicate high reliability of the instruments.

It can be concluded that the modified version of the SERVQUAL model is suitable for use by hotel managers in gaining easily interpretable and reliable data on hotel guests' attitudes regarding perceived service quality. The results of this study suggest that solving guests' problems, performing error-free service, employees' attitude, appropriate location, and the appearance of the facilities are the key attributes for a hotel's success on the Opatija Riviera. Thus, the findings can be used as a guide for hotel managers to improve crucial quality attributes and enhance service quality and business performance.

There are several limitations that need to be acknowledged. The data were collected in a small although important tourist destination in Croatia. The questionnaires were distributed during the summer months. Thus, the results' interpretation should be limited to this group of hotel guests. It is possible that guests staying in hotels out of the main tourist season might have different perceptions of the service quality. Also, the measurement of hotel guests' perceptions was limited to 29 hotel attributes. Even though these attributes were included in other studies as well, there could be other relevant hotel attributes that are likely to influence hotel guests' perceptions.

In order to be able to generalize the findings, it is suggested that similar studies be conducted in other Croatian tourist destinations as well. Moreover, this study was focused only on hotels. Future research should test whether the factor structure proposed in this study is valid in other types of accommodation in the region (e.g. camps, private accommodation, hostels). Additionally, future research could also assess hotel staffs' perceptions of service per-

formance and compare them with guests' perceptions in order to identify the differences.

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