

Analysis of hotel services by their symmetric and asymmetric effects on overall customer satisfaction: A comparison of market segments

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ABSTRACT

This study aims to examine how performance of hotel services symmetrically and asymmetrically affects overall customer satisfaction. For this purpose, data were collected from Turkish, German and Russian hotel customers staying at a five-star golf hotel in the Belek area in Antalya-Turkey. Data were first analyzed by multi-variable regression analysis for clarifying the symmetric impacts of eight service dimensions on overall customer satisfaction. Results showed that *Entertainment Services*, *Restaurant Services*, *Cleaning of General Areas* and *Foreign Language Knowledge of Staff* had the highest influences on customer satisfaction. Penalty-reward-contrast analysis was performed for the same service dimensions to understand their asymmetric influences on customer satisfaction. Significantly different categorizations (i.e. satisfiers; dissatisfiers if absent; hybrids) were obtained for three major market segments. *Entertainment Services* had been the only dimension which was categorized as a 'dissatisfier if absent' for all markets. Additional comparisons were made among the first-time and repeat customers, whereas *Housekeeping Services* were identified as the 'dissatisfiers if absent' for both groups.

1. Introduction

Contemporary hospitality companies offer many services to customers beyond their 'core business', which is to 'shelter' the travellers. Nowadays, the capability, survival and financial performance of hospitality companies are directly dependent on achieving higher customer satisfaction than their competitors (Deng et al., 2008), since service variety and competition have significantly increased in the global marketplace. In hotel management, managers attempt to offer services meeting the needs and expectations of the customers which are presumed to linearly affect overall customer satisfaction. However, 'symmetric' relationships between product/service attributes and customer satisfaction should not be seen as guaranteed, since it was shown by researchers that product/service attributes may also have 'asymmetric' influences on customer satisfaction.

The perspective of asymmetric impacts is firstly proposed by Kano et al. (1984) in the quality management literature (Füller and Matzler, 2008). The five quality element categories (one-dimensional, must-be, attractive, indifferent, and reverse) in the Kano model are determined by the customers' objective performance perceptions about a product or service attribute's expected benefits/values, both in the cases of its fulfillment (function) and non-fulfillment (dysfunction) (Mikulić and Prebežac, 2011b). Each classified attribute is expected to have a

different effect on customer satisfaction depending on its characteristic, and be used for analysing the multi-factor structure of satisfaction with regard to examined attributes (Alegre and Garau, 2011). This approach is widely used by the researchers in various study settings (Lai and Hitchcock, 2017; Kocabulut and Albayrak, 2017; Bodet et al., 2016; Albayrak and Caber, 2014; Albayrak, 2015; Marković and Janković, 2013; Slevitch and Oh, 2010; Kuo et al., 2010; Matzler et al., 2006; Fuchs and Weiermair, 2003).

Since three categories (as they are named: must-be or basic, one-dimensional or performance, and attractive or excitement) are mainly used by the researchers in the application of this method, it is widely known as the Three-Factor Theory of Customer Satisfaction in the academic area. Inspiring from the Three-Factor Theory of Customer Satisfaction, some techniques are also derived with the purpose of identifying product/service attributes' asymmetric relationships with customer satisfaction such as the critical incidents technique (Backhause and Bauer, 2001; Tontini et al., 2017), dual importance mapping (Alegre and Garau, 2011), and penalty-reward-contrast analysis (Albayrak, 2015; Zhang and Cole, 2016).

In the current study, the authors aimed to contribute the development of this literature by determining both symmetric and asymmetric effects of service attributes on overall customer satisfaction in the hotel context. In addition, the study compares the categorization of the

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service attributes and determines the differences based on customers' nationality and loyalty. With these purposes, a survey was performed at a five-star golf hotel in the Belek area, Antalya-Turkey with the participation of Turkish, German and Russian hotel customers. Symmetric impacts of the hotel service attributes on overall customer satisfaction were analyzed with individual regression analyses for each market segment, while their asymmetric impacts were examined with separate penalty-reward-contrast analyses. The main contribution of the present study is to determine and to compare hotel service attributes' symmetric and asymmetric influences on overall customer satisfaction. Additional market segment comparisons are presumed to highlight whether categorization of the service attributes may change depending on customer characteristics.

2. Symmetric and asymmetric impacts of product/service attributes on overall customer satisfaction

Customer satisfaction, which is defined as the general customer assessment of various attributes of products or services (Bartikowski and Llosa, 2007), is considered one of the most important determinants of company performance, competitiveness and profitability (Fuchs and Weiermair, 2003; Chen, 2012). Hence, it is possible for companies to target high customer satisfaction by improving the performance of product/service attributes (Anderson and Mittal, 2000). This is an important business objective, since many previous studies show that high customer satisfaction enables the companies to gain new customers (Ramanathan and Ramanathan, 2010; Kuo et al., 2010), to increase their financial performance by decreasing customers' price sensitivity and increasing cross-sales (Anderson and Mittal, 2000; Deng et al., 2008), and to provide customer recommendations (Busacca and Padula, 2005; Bartikowski and Llosa, 2007).

Since customer satisfaction plays an important role in the success of companies, there are many studies aiming to identify customer perceptions about products/services offered in hotels and the effects of these perceptions on overall customer satisfaction (Ramanathan and Ramanathan, 2010). In the majority of these studies, it has been acknowledged that there is a symmetric relationship between overall customer satisfaction and perceived performance of the service/product attributes (Busacca and Padula, 2005; Zhang and Cole, 2016). For example, Albayrak and Caber (2015) identified nine attributes that affect overall satisfaction of hotel guests and showed that personnel and food-drink quality are the attributes which have the greatest influence on satisfaction. In Marković and Janković's (2013) study, four attributes were identified as having an especially strong influence on customers' service quality perceptions. Among those, reliability and accessibility related attributes had a positive effect on overall customer satisfaction.

Mohsin and Lockyer (2009) revealed that reception services, room service and restaurant quality strongly influence customer satisfaction. Choi and Chu (2001) proposed that personnel services are one of the determinants of overall customer satisfaction. Gundersen et al. (1996) discovered that both the concrete services of the housekeeping department and the abstract services of reception have strong effects on customer satisfaction. Ekinici et al. (2008) identified the positive effects of physical equipments' quality and personnel behaviours on customer satisfaction.

Yung and Chan (2002) revealed that business centre, check-out and check-in encounters had the greatest effect on business travellers' satisfaction, while the room and restaurant encounters had the least impact on their satisfaction. Yang and Lau (2015) identified that quality of rooms and services are important for the hotel customers. Slevitch and Oh (2010) suggested that both core (e.g. cleanliness, bed/pillows, front desk, safety and security) and facilitating (e.g. personalized services, sauna, public areas, complementary snacks) attributes were important and influential on customer satisfaction. Chen et al. (2001) have examined the Norwegian tourists' perception about hotel service quality in the United States. They revealed that skilled and friendly staff, safety,

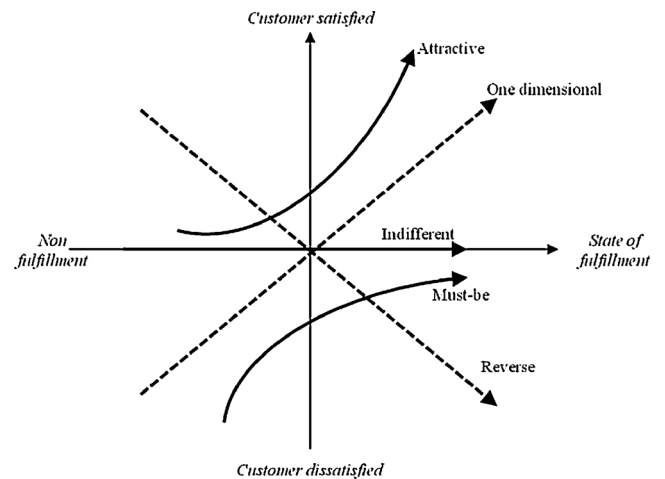


Fig. 1. Kano diagram.
(adapted from Kano et al., 1984).

and in-room facilities were the important attributes determining customer perceptions about overall hotel service quality.

Although, many studies (Slevitch and Oh, 2010; Mikulić and Prebežac, 2011a, 2012; Chen, 2012; Lee and Min, 2013) in different service settings have been performed by following symmetric relationships approach, there is limited number of research yet addressing the hotel service attributes' asymmetric effects on overall customer satisfaction. These previous studies and the main principles of the Three-factor Theory of Customer Satisfaction are presented in the next section.

3. The three-factor theory of customer satisfaction

Unlike symmetric relationships approach, asymmetric relationships approach assumes that some product/service attributes' negative performance may have a much larger influence than its positive performance on overall customer satisfaction (Mittal and Baldasare, 1996). In other words, the effect and importance of a product/service on overall customer satisfaction may vary depending on the attributes' perceived performance (Albayrak and Caber, 2014). In the original Kano model, (Fig. 1) there are three main and two additional categories for defining the varying characteristics of the product/service attributes by their performance and influence on customer satisfaction. The main categories are as follows:

Basic attributes (Must-be factors or Dissatisfiers if absent): These are the basic needs which create dissatisfaction when they aren't offered and which don't lead to satisfaction when offered, because they consist of the minimum services customers expect to be delivered (Matzler and Sauerwein, 2002). For example, since putting towels in hotel rooms is already considered to be a service required to be rendered by the hotel, it doesn't create any satisfaction. However, absence of towels in rooms will lead to dissatisfaction.

Performance attributes (One-dimensional factors or Hybrids): These are the product/service attributes that have a symmetric relationship with customer satisfaction (Matzler and Sauerwein, 2002; Lai and Hitchcock, 2017). They create satisfaction when offered to customers and cause dissatisfaction when they aren't offered (Albayrak, 2015). The level of customer satisfaction will increase or decrease according to the extent to which the requirements in this category of products/services are met (Ilter et al., 2007). For example, while the hotel staff's friendliness creates customer satisfaction, a contrary attitude will lead to customer dissatisfaction.

Excitement attributes (Attractive factors or Satisfiers): These are the attributes that increase customer satisfaction when offered and that don't create dissatisfaction when they aren't offered (Matzler and

Sauerwein, 2002). Classified also as dreams of the customers (İlter et al., 2007), these factors are the unexpected and surprising values for the customers which make the most contributions to satisfaction (Zhang and Cole, 2016). Therefore, they have the potential to create high customer satisfaction. For example, serving fruit and wine to hotel customers at arrival may lead to high customer satisfaction, whereas absence of such service won't create dissatisfaction.

The additional two categories in the model indicate the product/service attributes that the customers perceive as indifferent or adverse. Principally, *Indifferent* attributes contain the features that the customers do not care whether they are present or not, while the absence of *Reverse* attributes may generate customer satisfaction and their presence may create a great level of customer dissatisfaction as they are not required (Palumbo, 2015).

The three-factor theory of customer satisfaction is based on Kano model, and classifies the product/service attributes simply as the basic, performance, and excitement, by taking into account of their asymmetric effects on customer satisfaction. This technique may serve as a means for companies to become more successful (Füller and Matzler, 2008), since it enable company managers to understand which product or service attributes have priority in improvement for increasing customer satisfaction (Zhang and Cole, 2016) and for generating the marketing strategies (İlter et al., 2007).

This theory has been examined in many research areas, such as banking (Johnston, 1995; Matzler et al., 2007; Arbore and Busacca, 2009), health (Mittal and Baldasare, 1996; Matzler and Sauerwein, 2002), the automotive sector (Mittal et al., 1998), human resources (Matzler and Renzl, 2007; Matzler et al., 2004) and business-to-business relationships (Falk et al., 2010; Busacca and Padula, 2005; Šerić et al., 2016; Füller and Matzler, 2008; Ting and Chen, 2002). In the field of tourism, plane ticket sales services (Mikulić and Prebežac, 2012), animation programs (Mikulić and Prebežac, 2011a), congress services (Lee and Min, 2013), food-drink services at restaurants (Chen, 2012), website contents (Zhang and Cole, 2016; Kocabulut and Albayrak, 2017) and destination attributes (Alegre and Garau, 2011; Albayrak and Caber, 2013b; Mikulić et al., 2015) have been examined in the context of asymmetric relationships.

Previous studies related to international hotel management have also addressed the asymmetrical relationships between service attributes and overall customer satisfaction. For example, Tontini et al. (2017), who examined the effects of hotel service attributes on customer satisfaction, classified personnel attitudes and room comfort as basic factors that had important effects on satisfaction, but found that other services did not have a statistically significant effect on customer satisfaction. Matzler et al. (2006) classified personnel attitude, reception services and room as the basic factors and restaurant services as the excitement factor. In their study, in which they examined the asymmetric effects of nine service attributes in hotels, Albayrak and Caber (2015) classified personnel, food-drink quality, room decoration, general cleaning and animations and activities for children as the basic factors, and only beach, as the excitement factor.

Penalty-reward-contrast analysis, which is one of the methods used for the identification of asymmetric relationships between product/service attributes and overall customer satisfaction, has been more popular than a variety of others (e.g. critical incidents technique and dual importance mapping), because it relies on the data obtained from customer satisfaction measurements (Albayrak, 2015) and is easier to adapt to a three-factor structure (Busacca and Padula, 2005; Alegre and Garau, 2011). In this method, regression analysis with dummy variables is used for the identification of asymmetric effects on overall customer satisfaction (Mikulić and Prebežac, 2012). As first suggested by Brandt (1987; citing Tontini et al., 2017), regression analysis with dummy variables can be used for obtaining beta coefficients to show product/service attributes' impacts on overall customer satisfaction at low (i.e. penalty indice) and high (i.e. reward indice) performance levels. Afterwards, attributes can be classified as basic, performance or

excitement by comparing their penalty and reward indices (Albayrak and Caber, 2013a).

In the examination of asymmetric relationships by penalty-reward-contrast analysis, Mikulić and Prebežac (2011b) argue that the use of same category names as same as in the Kano model may be misleading since these methods have varying characteristics. Therefore, rather than using the Three-factor Theory of Customer Satisfaction categories (basic, performance, and excitement), in this study, the authors adapted to use of 'satisfiers' (for excitement/attractive factors); 'dissatisfiers if absent' (basic/must-be factors); and 'hybrids' (for performance/one-dimensional factors) as recommended by Mikulić and Prebežac (2011b). This is a similar technique as used in the Lai and Hitchcock, (2017) study, where asymmetric impacts of the hotel services on the new, repeat and frequent customers' satisfaction were revealed by a partial least squares (PLS) impact-asymmetry analysis. In their study, these authors showed that many of the services were 'satisfiers' for the new customers, while many of the services were 'hybrids' for the repeat and frequent customers.

4. Method

4.1. Measurement instruments

The data in the present study were gathered through a survey that contained two sections. The first section included five questions about participant demographics. The second section consisted of 30 items regarding the performance of hotel services. The items were selected from previous studies (Gundersen et al., 1996; Kandampully and Suhartanto, 2000), and included after the meetings with hotel managers and academics according to their suggestions. Items measure the level of perceived performance levels of the hotel services by a 5-point scale ranging from 1: very bad to 5: very good. In addition, one item measuring overall level of satisfaction of participants was included in the survey. This item is measured by a 5-Likert type of scale ranging from 1: completely dissatisfied, 5: completely satisfied. The questionnaire was first prepared in Turkish, translated then into English, German and Russian languages by professional translators.

4.2. Sample and data collection

For data collection, the authors got the support of a five-star golf hotel located in Belek area, Antalya-Turkey. A convenience sampling approach was used; customers who were departing from the hotel were approached and told about the aims of the study and asked, if they would like to participate in it. A total of 692 questionnaires were collected between September and October 2017. After the elimination of partly answered or duplicate 71 forms, the remaining 621 data were used in the analyses.

5. Results

5.1. Demographics of the participants

Participants were predominantly (64.1%) between 31 and 45 years of age. The majority were married (75.9%) and male (59.1%). First-time customers comprised 65.6% of the total sample, while the remaining 34.4% were repeat customers. By nationality, the major customer groups were German (40.2%), Russian (20.5%), and Turkish (19.7%), respectively. The rest of the participants were from various countries including France, England, Belgium, Holland, Switzerland, and Romania.

5.2. Descriptive statistics

Descriptive statistics for items that measured hotel customers' perceptions about the performance of services are shown in Appendix A.

Table 1
Results of the factor analysis.

Dimensions	Factor Loading	Means	Total Variance Explained (%)	Eigenvalue	Reliability (Cronbach's Alpha Value)
<i>Entertainment Services</i>		4.37	10.31	2.37	0.71
Sufficiency of night animation shows	0.76				
Sufficiency of daytime animation activities	0.75				
Animators' willingness to provide service	0.72				
Mini club	0.59				
<i>Restaurant Services</i>		4.53	9.13	2.10	0.77
Quality/variety food	0.84				
Food taste	0.80				
Buffet presentation	0.76				
<i>Cleaning of General Areas</i>		4.58	8.04	1.88	0.66
Beach cleaning	0.84				
Cleaning and arrangement around the pool	0.70				
General areas, shower, WC cleaning	0.65				
<i>Service Staff</i>		4.32	7.65	1.76	0.74
Food and Beverage staff ability to provide service	0.82				
Food and Beverage staff willingness to provide service	0.81				
<i>Foreign Language Knowledge of Staff</i>		4.01	7.53	1.73	0.64
Language knowledge of Front Office staff	0.82				
Language knowledge of Food and Beverage staff	0.74				
Language knowledge of the Animators	0.60				
<i>Extra Services</i>		3.91	7.20	1.65	0.45
Water sports	0.67				
Hammam, sauna and massage	0.64				
Shopping centre	0.60				
Fitness centre	0.55				
<i>Front Office Services</i>		4.58	6.60	1.51	0.62
Receptionists' accuracy in registration	0.80				
Receptionists' willingness to provide service	0.79				
<i>Housekeeping Services</i>		4.68	6.41	1.47	0.59
Housekeeping personnel willingness to provide service	0.82				
Availability of room at check-in	0.78				

KMO = 0.736; Bartlett's Test of Sphericity = 2221.523 (p = 0.000); Total Variance Explained: 62.91%.

The reliability of the measurement tool was tested by Cronbach's alpha, which was found to be 0.87. This was considered sufficient, since values above 0.50 are generally considered acceptable. Items which had the highest mean ratings were 'Gardening' (4.66), 'Cleaning and arrangement around the pool' (4.62), 'Room cleaning on first arrival' (4.58), 'The sincerity and interest of housekeeping staff' (4.56), and 'Buffet presentation' (4.53). The item which had the lowest arithmetic mean (3.19) was about 'Shopping centres'. It was followed by 'Language knowledge of Food and Beverage staff' (3.73), 'TV channels' (3.84), 'Water sports' (3.95), and 'Hammam, sauna and massage services' (3.98).

5.3. Factor analysis results

Exploratory factor analysis with varimax rotation was conducted to find out the main service dimensions. The results are shown in Table 1. First, Kaiser-Meyer-Olkin (KMO) analysis was performed to determine whether the collected data were appropriate for factor analysis. The value of 0.736 indicated that the data were suitable for this analysis. Additionally, Bartlett's Test of Sphericity indicated the existence of a significant relationship between the variables (p = 0.000). After the elimination of seven items that had communalities below 0.500, eight factors were obtained which had Eigenvalues above 1, and in total explained 62.91% of the variance.

The factors were named in accordance with the items that they contained, as follows: *Entertainment Services*, *Restaurant Services*, *Cleaning of General Areas*, *Service Staff*, *Foreign Language Knowledge of Staff*, *Extra Services*, *Front Office Services*, and *Housekeeping Services*. Although, the Cronbach's Alpha value (0.45) belonging to the *Extra Services* dimension was low, it was kept for the further analyses. Because, this dimension was presumed 'to form' (since the measurement tool had a formative design) general hotel service performance like other dimensions. Its elimination would cause lost of information.

In spite of the usage of Cronbach's Alpha value has been very common in past for testing the reliability of the variables in reflective models, Mikulić and Ryan (2018), and Mikulić (2018) suggest keeping the dimensions in the formative nature of indicators. Therefore, *Extra Services* dimension was not eliminated in this study. According to mean values of the obtained dimensions, the lowest performance mean amongst all service dimensions was for *Extra Services* (3.91), while the highest mean was for *Housekeeping Services* (4.68).

5.4. Test of symmetrical impacts of the service dimensions on customer satisfaction using multi-variable regression analysis

By examining symmetric relationships first, services performance and their impacts on customer satisfaction were identified with the purpose of understanding which services needed to be prioritized for improvement of the customer satisfaction. Accordingly, multi-variable regression analysis was used; hotel service dimensions were used as the independent variables, and customer satisfaction as the dependent variable. The data were not normally distributed, and could not meet the primary criterion of the regression analysis. Therefore, any outliers were inspected that were positioned at more than ± 3 standard deviations from the mean based on residual values, and these types of data were eliminated from the analysis as recommended by researchers (Tabachnick and Fidel, 2001). The skewness and kurtosis values showed that the data were normally distributed after this refinement. Correlation analysis reflected a linear and moderate relationship among the variables. The results of regression analysis also showed that the regression model was statistically significant (F = 53.969; p < 0.01), explaining 51% of customer satisfaction (Table 2). All service dimensions' beta coefficients were significant at the 0.01 level. The service dimension which had the highest impact on customer satisfaction was *Entertainment Services* (β = 0.258). It was followed by *Restaurant Services* (β = 0.239) and *Cleaning of General Areas* (β = 0.157) and *Foreign*

Table 2
Symmetric relationships among the service dimensions and customer satisfaction.

Service Dimensions	β ***	t-Value	p
Entertainment Services	0.258	6,570	0.000*
Restaurant Services	0.239	6,650	0.000*
Cleaning of General Areas	0.157	3,543	0.000*
Service Staff	0.085	2,944	0.003*
Foreign Language Knowledge of Staff	0.156	5,515	0.000*
Extra Services	0.151	3,211	0.001*
Front Office Services	0.131	3,851	0.000*
Housekeeping Services	0.104	2,537	0.012**

*p < 0.01; **p < 0,05 R² :0.507; F: 53.969 *** Unstandardized Beta Coefficient.

Dependent variable: I am satisfied with the hotel in general.

Language Knowledge of Staff (β = 0.156). The weakest influence was the Service Staff dimension (β = 0.085).

5.5. The test of asymmetric impacts of the service dimensions on customer satisfaction by using penalty-reward-contrast analysis

The asymmetric impacts of the hotel service dimensions on customer satisfaction were measured by penalty-reward-contrast analysis. Penalty-reward-contrast analysis enables researchers to categorize product/service attributes as the ‘satisfiers’; ‘dissatisfiers if absent’, and ‘hybrids’ according to their effects on customer satisfaction at their low and high performance levels. At low or high levels of performance, services are found to have varying influences on customer satisfaction. Hence, this approach suggests that there are asymmetries in the relationships between the service attributes or dimensions and overall customer satisfaction. For performing penalty-reward-contrast analysis, service dimensions were firstly re-coded as low, middle and high performing with dummy regression analysis. One set of dummy variable was created and used to quantify satisfying factors, while another set was created to quantify dissatisfying factors. Hence, in order to conduct the analysis the summed score values of each construct were re-coded as follows: factor score values in the lowest tertile (i.e. % 33 of the customers who have the highest satisfaction with a dimension, the lowest tertile expresses dissatisfaction as the scale used was anchored with 1: completely dissatisfied and 5: completely satisfied) were used to form one dummy variable to quantify satisfying factors (value of 1), while factor value in the upper tertile (i.e. % 33 of the customers who have the lowest satisfaction with a dimension) were used to form the second dummy variable to quantify dissatisfying (value of 1) factors. The empty cells of the dummy variables were assigned the value of zero as they were defined as expressing indifference (i.e. neither high nor low satisfaction) and comprised a reference group (Matzler vd., 2007). In other words, the dummy variables are generated by calculating service dimensions’ arithmetic means and grouping the obtained values

Table 3
The results of dummy variable regression analysis and categorization of the service dimensions.

Service Dimensions	Dummy Variable Regression Analysis Coefficients****		IR- Value	Categorization
	Low Performance	High Performance		
Entertainment Services	-0.271***	0.145***	0.54	dissatisfiers
Restaurant Services	-0.126**	0.144***	1.14	satisfiers
Cleaning of General Areas	-0.046	0.069	1.50	satisfiers
Service Staff	-0.054	0.156***	2.89	satisfiers
Foreign Language Knowledge of Staff	-0.177***	0.054	0.31	dissatisfiers
Extra Services	-0.083*	0.068	0.82	dissatisfiers
Front Office Services	-0.103*	0.058	0.56	dissatisfiers
Housekeeping Services	-0.189**	-0.049	0.26	dissatisfiers

*p < 0.1; **p < 0.05; ***p < 0.01 R² :0.482; F: 19.658 ****Unstandardized Beta Coefficient.
Dependent variable: I am satisfied with the hotel in general.

under the: low performance (0,1), average performance (0,0), and high performance (1,0) codes (Albayrak and Caber, 2013a). After this coding of low and high performance values for each variable, a total of sixteen dummy variables as the independent and overall customer satisfaction as the dependent variable were used in the regression model. Analysis suggests two separate coefficients (unstandardized one was used) that indicate the impact of each dimension on customer satisfaction at the low and high performance levels.

In the classification of the attributes, Impact Ratio (IR) was preferred, which is firstly offered by Matzler and Renzl (2007). IR value is calculated by dividing the high performance coefficient by the low-performance coefficient (Albayrak and Caber, 2013a). According to previous studies (e.g. Füller and Matzler, 2008; Albayrak and Caber, 2013b) that have used IR for the classification of the attributes, attributes that have IR between 0,9 and 1.1 are classified as ‘hybrids’ (\pm 10% cut-off value). If the attributes have IR greater than 1.1, they are classified as ‘satisfiers’. The attributes that have IRs less than 0.9 are classified as ‘dissatisfiers if absent’. The categorization of the service dimensions are done relying on this rule. In Table 3, the IRs (high performance/low performance) of the eight dimensions are shown and comparison results are summarized.

As shown in Table 3, service dimensions which have greater influence on customer satisfaction at low performance than high performance levels are categorized as the ‘dissatisfiers if absent’. These are: Entertainment Services, Foreign Language Knowledge of Staff, Extra Services, Front Office Services, and Housekeeping Services. The performance levels of these service dimensions should be kept at an acceptable level for meeting customers’ needs and expectations. Other service dimensions, which have higher impact on customer satisfaction at high performance than low performance, are called the ‘satisfiers’. Service dimensions located at this category are: Restaurant Services, Cleaning of General Areas, and Service Staff. Any improvements at the performance levels of these service dimensions may increase customers’ overall satisfaction. The service dimensions’ impact on overall customer satisfaction at low and high performance levels are visually displayed in Fig. 2.

5.5.1. Comparison of the service dimension categorizations by customers’ nationalities

The asymmetric relationships among the service dimensions and overall customer satisfaction, as well as nationality-based differences, were examined by penalty-reward-contrast analyses with dummy variable regression analysis, conducted for Turkish, German and Russian customers (Tables 4–6).

The results show that service dimensions which were ‘satisfiers’ for Turkish customers are the: Cleaning of General Areas, Service Staff, Foreign Language Knowledge of Staff, Front Office Services, and Housekeeping Services, whereas ‘dissatisfiers if absent’ are the: Entertainment Services, Restaurant Services and Extra Services. Services, which are categorized as the ‘satisfier’ factors, especially need attention

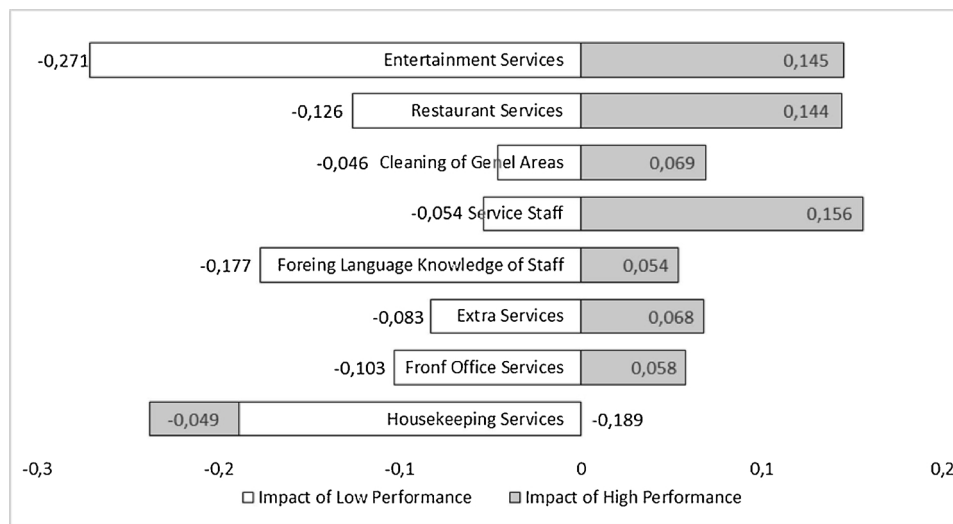


Fig. 2. Service dimensions' impact on overall customer satisfaction in low and high performance levels.

in terms of their performance for more satisfying Turkish customers of the hotel (Table 4).

For German hotel customers, categorizations of the service dimensions are reflected in Table 5. German customers perceived that the Entertainment Services, Foreign Language Knowledge of Staff, Front Office Services, and Housekeeping Services had been the 'dissatisfiers if absent' according to their performances. Service Staff and Extra Services are the 'satisfiers', whereas Restaurant Services and Cleaning of General Areas are 'hybrids'. Since Extra Services and Service Staff have the strength of increasing customer satisfaction in the case of their performances are increased, hotel authorities should consider paying extra efforts for performing better at these service encounters.

Analysis results obtained for Russian customers indicate that Entertainment Services, Restaurant Services, Service Staff, Extra Services, and Housekeeping Services are the 'dissatisfiers if absent' for these customers (Table 6). Cleaning of General Areas and Foreign Language Knowledge of Staff are the 'satisfier' factors. The need for increasing performance in these service dimensions is obvious, if hotel authorities wish to increase overall levels of Russian tourists' satisfaction with the hotel. On the other hand, Front Office Services is a 'hybrid' factor for Russian customers.

In Fig. 3, the IRs (high performance/low performance) of the eight dimensions are shown and the results are compared according to customer nationalities. Entertainment Services is the only common 'dissatisfiers if absent' for all nationalities. Restaurant Services is a 'dissatisfier if absent' factor for Turkish and Russian customers, while it is a 'satisfier' factor for German customers. Thus, performance improve-

ments in Restaurant Services are important for increasing satisfaction of German customers. Cleaning of General Areas is identified as a 'hybrid' factor for Turkish, 'dissatisfier if absent' for German, and 'satisfier' factor for Russian customers. This is a service dimension which may specifically increase overall satisfaction of Russian customers, if more attention is given to its performance. Service Staff is a 'satisfier' factor for Turkish and German customers, while it is a 'dissatisfier if absent' factor for Russian customers. Performance improvements that can be made in the attitudes and qualifications of the staff serving at restaurants and bars will most increase satisfaction of Turkish and German customers. As a 'satisfier' factor for both Turkish and Russian customers, Foreign Language Knowledge of Staff has the effect of increasing these groups' overall satisfaction with the hotel, if its performance can be improved.

Finally, Front Office Services and Housekeeping Services are categorized as 'satisfiers' for Turkish, and 'dissatisfiers if absent' for German and Russian customers; thus, a high level of performance in these areas is particularly important for Turkish customers' satisfaction with the hotel. In general, performance in the areas of Service Staff, Foreign Language Knowledge of Staff, Front Office Services, and Housekeeping Services is most important for satisfying Turkish customers. For German customers, performance of services directly linked to food and beverages such as Restaurant Services and Service Staff are particularly important to customer satisfaction. Optimizing Russian customers' overall satisfaction with the hotel depends on a high level of performance for Cleaning of General Areas and Foreign Language Knowledge of Staff.

Table 4
Categorization of the service dimensions for Turkish customers.

Service Dimensions	Dummy Variable Regression Analysis Coefficients***		IR- Value	Categorization
	Low Performance	High Performance		
Entertainment Services	-0.395**	-0.108	0.27	dissatisfiers
Restaurant Services	-0.158	0.078	0.49	dissatisfiers
Cleaning of General Areas	-0.073	0.131	1.79	satisfiers
Service Staff	-0.111	0.182	1.64	satisfiers
Foreign Language Knowledge of Staff	-0.072	0.164	2.28	satisfiers
Extra Services	-0.163	0.067	0.41	dissatisfiers
Front Office Services	-0.073	0.186	2.55	satisfiers
Housekeeping Services	-0.076	0.223*	2.93	satisfiers

*p < 0.1; **p < 0.01 R² :0.636; F: 6.647 ***Unstandardized Beta Coefficient.
Dependent variable: I am satisfied with the hotel in general.

Table 5
Categorization of the service dimensions for German customers.

Service Dimensions	Dummy Variable Regression Analysis Coefficients****		IR- Value	Categorization
	Low Performance	High Performance		
Entertainment Services	-0.196***	0.174***	0.89	dissatisfiers
Restaurant Services	-0.141*	0.134**	0.95	hybrids
Cleaning of General Areas	-0.049	0.048	0.98	hybrids
Service Staff	0.050	0.210***	4.20	satisfiers
Foreign Language Knowledge of Staff	-0.226***	-0.007	0.03	dissatisfiers
Extra Services	-0.053	0.153**	2.89	satisfiers
Front Office Services	-0.140*	0.048	0.34	dissatisfiers
Housekeeping Services	-0.185**	-0.021	0.11	dissatisfiers

*p < 0.1; **p < 0.05; ***p < 0.01 R² :0.468; F: 9.797 ****Unstandardized Beta Coefficient.
Dependent variable: I am satisfied with the hotel in general.

5.5.2. Comparison of the service dimension categorizations by first-time and repeat customers

Additional analyses have been performed to clarify whether asymmetric impacts of service dimensions on customer satisfaction are different between first-time and repeat hotel customers. For each of the groups, separate penalty-reward-contrast analyses were conducted with dummy variable regression analysis. In Table 7, results for first-time customers are shown. It is demonstrated that Restaurant Services, Cleaning of General Areas, Extra Services, Front Office Services, and Housekeeping Services are the ‘dissatisfiers if absent’; Foreign Language Knowledge of Staff are the ‘hybrids’ and Entertainment Services and Service Staff are the ‘satisfier’ for these customers. First-time customers in general perceived that entertainment, and food and beverage related-services were needed to be improved. Hence, hotel authorities should focus on the animation, and the food and beverage department’s service performance for achieving higher customer satisfaction.

Findings for the customers, who accommodated in the hotel more than once (repeat customers), are shown in Table 8. With reference to analysis results, Entertainment Services, Foreign Language Knowledge of Staff, Extra Services and Housekeeping Services are the ‘dissatisfiers if absent’; Front Office Services are the ‘hybrids’; and Restaurant Services, Cleaning of General Areas, and Service Staff are the ‘satisfiers’. Possible service improvement efforts or strategies, especially about the satisfying factors, may positively impact repeat customers’ overall satisfaction with the hotel.

As demonstrated in Fig. 4, service dimensions are categorized and compared for first-time and repeat customers. In the light of the results, Entertainment Services is a ‘satisfier’ factor for first-time customers, although it is a ‘dissatisfier if absent’ factor for repeat customers. Restaurant Services is a ‘dissatisfier if absent’ factor for first-time customers, while it is a ‘satisfier’ factor for repeat customers. Restaurant Services have a significantly greater effect on repeat customers’ overall satisfaction at a high level of performance than at a low level of performance. Thus, services related to this area must be revised, if these

customers are made to be more satisfied and preferably, turned into repeat customers.

Cleaning of General Areas is identified as a ‘dissatisfier if absent’ factor for first-time customers, since it is a ‘satisfier’ factor for repeat customers. Attention to these areas may highly impact overall satisfaction of repeat customers, who will notice the difference between before and after. Service Staff is a common ‘satisfier’ factor for both groups, while Foreign Language Knowledge of Staff, on the one hand, is a ‘hybrids’ service for first-time customers; it is, on the other hand, a ‘dissatisfier if absent’ factor for repeat customers. Front Office Services and Housekeeping Services were found to be ‘dissatisfier if absent’ for first-time customers. For repeat customers, Front Office Services are ‘hybrids’ and Housekeeping Services are ‘dissatisfiers if absent’. When evaluated generally, first-time customers may be more satisfied with improvements in Entertainment Services and Service Staff, and repeat customers may be more satisfied with service improvements in Restaurant Services, Cleaning of General Areas, and Service Staff.

6. Discussion and conclusion

In the contemporary services management era, both the practitioners and scholars should target to identify the offered products’ or services’ performance and capability in meeting customer needs or expectations. In this regard, the performance of a product’s or services’ various attributes may be presumed to play a role in customer satisfaction (high or low; positively, negatively or indifferent). For understanding the perceived performance of attribute-customer satisfaction relationships, while some researchers tend to follow symmetric impact framework, some others prefer to use asymmetric impact approach. Although both perspectives have a scientific value and may suggest valuable findings, it has been increasingly important nowadays to investigate how much obtained outcomes show difference according to these perspectives, and to decide which one suggests more detailed and accurate findings than the other. This study aimed to show both

Table 6
Categorization of the service dimensions for Russian customers.

Service Dimensions	Dummy Variable Regression Analysis Coefficients****		IR- Value	Categorization
	Low Performance	High Performance		
Entertainment Services	-0.431***	0.234**	0.54	dissatisfiers
Restaurant Services	-0.097	0.042	0.43	dissatisfiers
Cleaning of General Areas	0.018	0.113	6.28	satisfiers
Service Staff	-0.201*	0.055	0.27	dissatisfiers
Foreign Language Knowledge of Staff	-0.025	0.116	4.64	satisfiers
Extra Services	-0.131	-0.040	0.31	dissatisfiers
Front Office Services	-0.146	0.146	1.00	hybrids
Housekeeping Services	-0.273*	0.152	0.56	dissatisfiers

*p < 0.1; **p < 0.05; ***p < 0.01 R² :0.563; F: 5.074 ****Unstandardized Beta Coefficient.
Dependent variable: I am satisfied with the hotel in general.

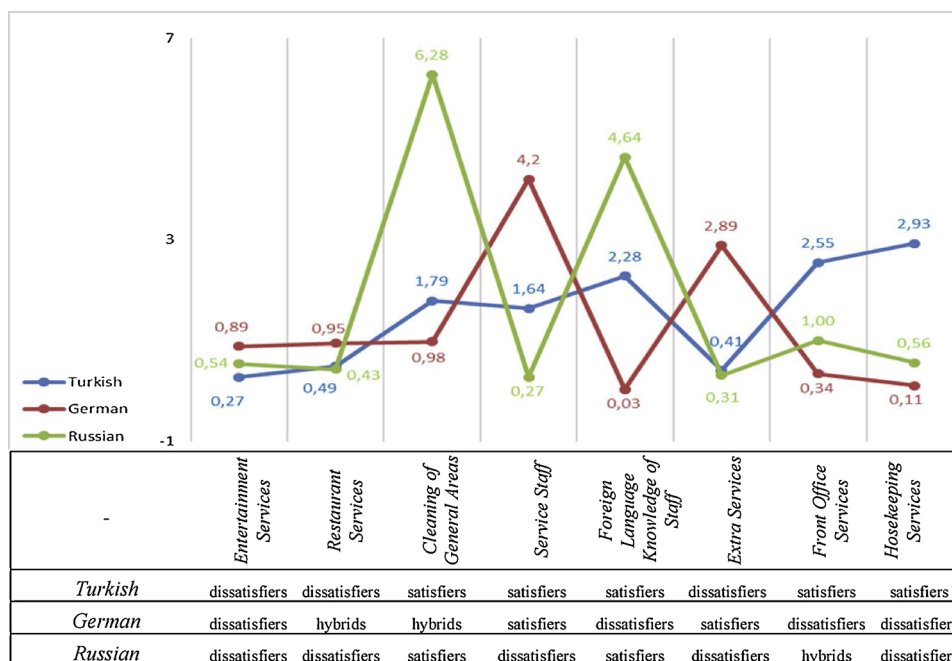


Fig. 3. The classification of service dimensions according to nationality of the customers.

symmetric and asymmetric impacts of the perceived performance of hotel service attributes on overall customer satisfaction by a case study. The obtained results are then compared in the samples of Turkish, German and Russian customers. Thus, beside of being one of the few studies that have compared the impact of varying techniques in obtained results, the current study also contributes to the literature in understanding service perception variations among market segments in the hospitality sector.

The regression analysis results for the symmetric approaches show that *Entertainment Services*, *Restaurant Services*, *Cleaning of General Areas*, and *Foreign Language Knowledge of Staff* are the services that have the highest impact on overall customer satisfaction, for all market segments. However, the test of asymmetric impacts by penalty-reward-contrast analysis indicate that only *Service Staff* is a ‘satisfier’ factor; that is, it increases customer satisfaction, if delivered, but does not cause dissatisfaction if not delivered. *Entertainment Services* was determined to be ‘dissatisfiers if absent’, which are the minimum requirements for hotel customers. This service may cause dissatisfaction if not fulfilled and do not lead to customer satisfaction, if fulfilled or exceeded (Füller and Matzler, 2008). According to the asymmetric relationships approach, services that may satisfy the hotel customers are: *Restaurant Services*, *Cleaning of General Areas*, and *Service Staff*. Hence, managers should make an extra effort to increase the performance level

of these services to maintain higher customer satisfaction. The remaining services, such as *Entertainment Services*, *Foreign Language Knowledge of Staff*, *Front Office Services*, and *Housekeeping Services* are the ‘dissatisfier if absent’ factors in the hotel. Thus, the influence of these services on overall customer satisfaction is limited, since hotel customers already expect to get these services, and will be dissatisfied with the hotel if they notice that these services are insufficient in performance.

In addition to general categorization of hotel services by an asymmetric approach, the authors also tested nationality-based differences in service categorization, and found significant differences in which services were categorized as the ‘satisfiers’, ‘dissatisfiers if absent’, and ‘hybrids’. The only common service point was *Entertainment Services*, which is considered as a ‘dissatisfier if absent’ by all tourists. While Turkish tourists will be ‘satisfied’ if the performances of *Cleaning of General Areas*, *Service Staff*, *Foreign Language Knowledge of Staff*, *Front Office Services*, and *Housekeeping Services* are high, German customers will be influenced by the performance of *Restaurant Services* and *Cleaning of General Areas*. For Russian tourists, performance increases in *Cleaning of General Areas* and *Foreign Language Knowledge of Staff* are presumed to increase their satisfaction with the hotel, since these are ‘satisfier’ factors for these customers. Obtained results for each market segment indicate nationality-based service perception variations. For

Table 7
Categorization of the service dimensions for first-time customers.

Service Dimensions	Dummy Variable Regression Analysis Coefficients****		IR- Value	Categorization
	Low Performance	High Performance		
Entertainment Services	-0.155*	0.176**	1.14	satisfiers
Restaurant Services	-0.379***	0.080	0.21	dissatisfiers
Cleaning of General Areas	0.083	0.030	0.36	dissatisfiers
Service Staff	-0.080	0.146*	1.83	satisfiers
Foreign Language Knowledge of Staff	-0.192*	0.174*	0.91	hybrids
Extra Services	-0.059	0.017	0.29	dissatisfiers
Front Office Services	-0.135	0.017	0.13	dissatisfiers
Housekeeping Services	-0.385***	0.029	0.08	dissatisfiers

*p < 0.1; **p < 0.05; ***p < 0.01 R²:0.677; F: 11.805 **** Unstandardized Beta Coefficient.
Dependent variable: I am satisfied with the hotel in general.

Table 8
Categorization of the service dimensions for repeat customers.

Service Dimensions	Dummy Variable Regression Analysis Coefficients***		IR- Value	Categorization
	Low Performance	High Performance		
Entertainment Services	-0.315**	0.103	0.33	dissatisfiers
Restaurant Services	-0.074	0.163*	2.20	satisfiers
Cleaning of General Areas	-0.040	0.052	1.30	satisfiers
Service Staff	-0.066	0.142*	2.15	satisfiers
Foreign Language Knowledge of Staff	-0.159*	0.048	0.30	dissatisfiers
Extra Services	-0.140*	0.041	0.29	dissatisfiers
Front Office Services	-0.078	0.079	1.01	hybrids
Housekeeping Services	-0.184*	-0.032	0.17	dissatisfiers

*p < 0.05; **p < 0.01; R² :0.428; F: 9.261 ***Unstandardized Beta Coefficient.
Dependent variable: I am satisfied with the hotel in general.

hoteliers, who target to maintain high customer satisfaction for hotel customers in general, such demographic differences should be noticed.

Another group difference in service categorizations was between first-time and repeat customers. Both first-time and repeat customers' overall satisfaction with the hotel may be increased if *Service Staff* perform better. This service point is a 'satisfier' factor for both groups. *Housekeeping Services* and *Extra Services* are considered as a 'dissatisfier if absent' factor for both groups as well. However, for the first-time customers, *Entertainment Services* and *Service Staff* have the strength to create satisfaction. For the repeat customers, a high level of performance in *Restaurant Services*, *Cleaning of General Areas*, and *Service Staff* may generate satisfaction.

As summarized above, the results of the study enabled researchers to categorize hotel services relying on their symmetric and asymmetric influences on customer satisfaction and to identify categorization differences relying on customer characteristics. From the theoretical point of view, the findings of this study contribute to scientific knowledge for understanding customer behaviour in the hospitality sector. Hotel services are shown to be perceived differently by customers according to their performances. The varying effects of hotel services on overall customer satisfaction indicate the importance of offering services at an acceptable level for satisfying the majority of the customers. Otherwise, both customer dissatisfaction and complaints may occur.

In the post-modern marketing era, practitioners should notice that customers may have different demographics, varying needs and expectations that should be satisfied with the offered products or services. However, even well-designed products or services may fail in the marketplace today, if market trends are not identified and followed. Especially in the hospitality sector, rapidly changing tourism trends and service practices put stress on managers. In order to adapt themselves to the latest tourism trends for keeping their market positions locally and globally, hoteliers need to achieve high service quality and to maintain 'delighted' customers. To do so, they need to understand customer perceptions about their services. Measurement techniques such as the three-factor theory of customer satisfaction in this study assist practitioners in exploring their service performance in the eye of the customers.

There are a number of limitations of this study, including the fact that the customers, who were staying at one hotel, located in Belek area, Antalya-Turkey, were selected as the research sample. Moreover, findings obtained from a five-star hotel's customers may show difference to findings belong to the customers who stay at other types of hotels. Using factor analysis for identifying the main hotel service points is another limitation of this study. Since factor analysis avoids the researchers to identify individual service attribute's asymmetric impact on overall customer satisfaction, the authors recommend the use

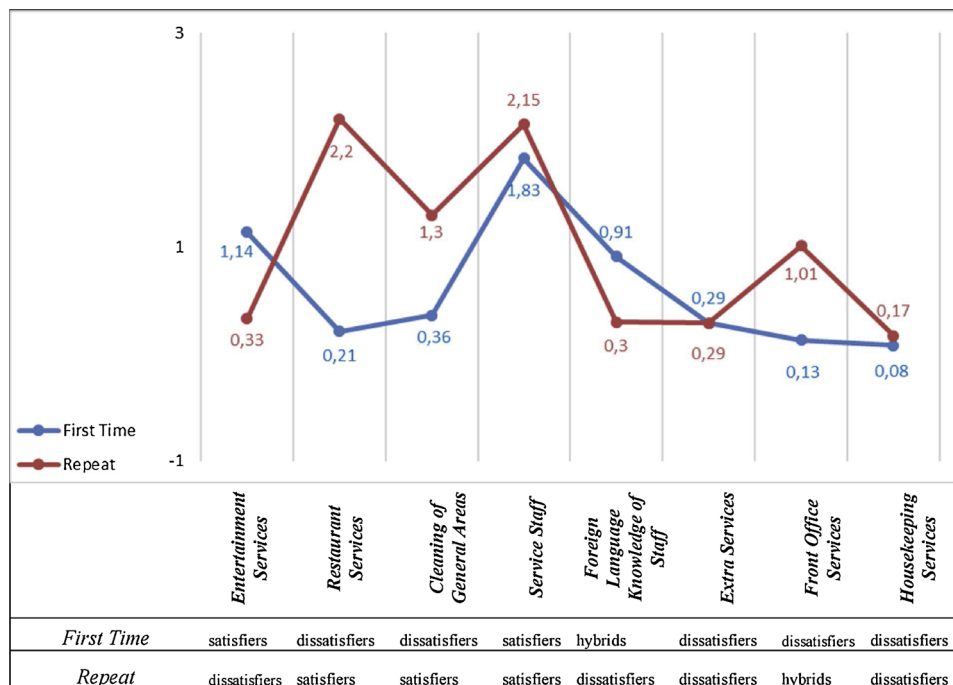


Fig. 4. The classification of service dimensions according to first-time and repeat customers.

of analyses that may enable them to clarify these specific relationships in the future studies. In spite of its limited generalization potential as being a case study, the current paper significantly contributes to the

literature on customer perceptions about hotel services and their behavioural consequences.

Appendix A. Descriptive Statistics for the hotel services

Services	Frequency	Means*	Std. Error	Var.
Landscape care	609	4.66	0.585	0.343
Cleaning and arrangement around the pool	596	4.62	0.584	0.342
Availability of room at check-in	618	4.58	0.726	0.528
Housekeeping personnel's willingness to provide service	610	4.56	0.725	0.526
Buffet presentation	615	4.53	0.697	0.487
Receptionists' willingness to provide service	616	4.50	0.762	0.582
Mini club	385	4.49	0.810	0.657
Beach cleaning	606	4.48	0.708	0.501
Laundry services	269	4.47	0.848	0.720
In-room cooling / heating	592	4.45	0.813	0.661
Receptionists' accuracy in registration	613	4.45	0.802	0.644
General areas, shower, WC cleaning	615	4.43	0.703	0.494
Animators' willingness to provide service	557	4.40	0.856	0.734
Quality/variety of food	616	4.38	0.827	0.685
Food taste	615	4.35	0.772	0.596
Quality/variety of beverages	607	4.29	0.844	0.714
Food and beverage staff willingness to provide service	616	4.29	0.847	0.719
Minibar services	610	4.25	0.958	0.918
Fitness centre	296	4.19	0.864	0.748
Food and beverage staff ability to provide service	617	4.16	0.844	0.714
Sufficiency of daytime animation activities	546	4.08	0.898	0.808
Language knowledge of the animators	543	4.07	1.024	1.050
Sufficiency of night animation shows	583	4.02	0.997	0.996
Language knowledge of front office staff	606	4.01	0.991	0.983
A la carte restaurant services	315	4.00	1.155	1.334
Hammam, sauna and massage	274	3.98	1.097	1.205
Water sports	265	3.95	0.998	.998
TV channels	582	3.84	1.149	1.322
Language knowledge of food and beverage staff	599	3.73	0.955	.913
Shopping centre	434	3.19	1.178	1.388

*1 = Very bad; 5 = Very good.

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