

Resort Hotel Service Quality – Application of Quality Function Deployment Method

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Abstract

This study uses the SERVQUAL scale, combined with Kano's Two-Dimensional Quality Model, to examine expected importance and perceived satisfaction, and to construct a house of quality for Taitung County resort hotels. Research results show that the most important three elements of customer needs in management for Taitung County resort hotels in order are "adequate treatment of customer complaints," "legitimacy of various facilities at the hotel," and "the hotel has appropriate room equipment" respectively. By constructing a house of quality, it shows that the top three items of operations for the hotels to improve or modify in priority are "professional knowledge education for employees," "standard service operation training," and "housekeeping operation." The foregoing results provide hotel operators with directions, as well as feasible alternatives, to raise service quality.

Keywords: Resort hotels; Service quality; Kano's Two-Dimensional Quality Model; Quality function deployment method

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I. Instruction

Tourism is always the main direction of development of Taitung County where has abundant natural, cultural, and ecological resources, and is the perfect environment for vacations. After the South-Link Line opened for operation in December 1991, many corporations devoted large amounts of capital to build many hotels in these scenic areas, even though the transportation was inconvenient then. As a result, the massive construction of hotels once led to excess supply of hotels.

According to the tourist statistics of the Taitung County Tourism and Travel Web (2010), the scenic locations of Taitung attract about 4.2 million visitors each year from 2003 to 2009, which shows that the development in businesses of hotel, food, and beverage related to travel is very important. Facing such major business opportunities, hotels in scenic areas of Taitung County seek to raise their competitiveness by providing various types of hardware and software facilities and better service quality to attract clients and raise tourist satisfaction. Therefore, to understand customers' emphasis and satisfaction for the quality of various services provided from Taitung County resort hotels would be a very important issue for the hotel operators to improve their management and promote their strategic applications.

Domestic articles exploring resort hotels generally focus on items of evaluation of service quality, and do not take the technical needs of execution into account. In view of this, in 1970 Akao proposed quality function deployment (QFD), which provides a systematic method to convert customers' key needs into design quality. In the initial stages of planning and design of products or services, customer opinions are incorporated to raise customer satisfaction (Akao, 1995). Therefore, using the SERVQUAL scale as a foundation, this study begins from the perspective of customers who have stayed at Taitung resort hotels, and analyzes the expected importance and perceived satisfaction of customers with regard to the various services and products of resort hotels. Then, it integrates Kano's Two-Dimensional Quality Model to grasp the quality needs of customers (Matzler and Hinterhuber, 1998). By using QFD, this study analyzes the extent of the correlation between customer needs and hotel operational needs in order to lower the uncertainty of resort hotel operators about customer needs, provides resort hotels with the technical works required for improving services in order to lower the gap with customer needs, and clarifies the priority of items of improvement to raise hotel service quality.

II. Literature Review

A. Resort hotels

The establishment of resort hotels generally focuses on both of natural and cultural tourism resources. With convenient transportation and beautiful scenery, the geographic locations of resort hotels tend to be far from cities, and close to beaches, hot springs, and scenic areas. The tourists who stay at these hotels seek to vacation and engage in leisure and entertainment activities. Generally, resort hotels provide food and beverage, packaged tours, lodging, and rest stops, as well as related leisure facilities (Shih and Chiang, 1997).

Briggs et al. (2007) explored the service quality in the Scottish hotel sector. Their empirical study focused on service quality of small, medium, and large hotels, and found that the most important core concepts of service quality are hotel management and customer evaluations.

Taking scholarly definitions into account, resort hotels in this study are defined as legitimate lodging facilities located in areas with natural scenery, and provide tourists, who are seeking leisure, health, and recreation, with board and lodging, indoor and outdoor activities, recreational facilities, and natural resources.

B. Definition and measurement model of service quality

Based on the PZB service quality model, Parasuraman *et al.* (1988) proposed the “SERVQUAL” scale to measure service quality. In the “SERVQUAL” scale, there are 22 service quality elements which are divided into five aspects including “tangibility,” “reliability,” “responsiveness,” “guarantees,” and “care.” Resort hotels have the basic characteristics of the service industry, such as intangibility, heterogeneity, perishability, and inseparability of production and consumption. Bech and Josep (2011) pointed out that service quality is a way for corporations to understand whether the services they provide are suited to the needs of customers. Chuang *et al.* (2010) suggested that service quality is the extent to which the services provided by travel locations meet tourist needs and expectations. The customer needs emphasized in the consumption experience involve the difference between expected needs and actual consumption perceptions, and influence the extent to which customers are satisfied with service quality of resort hotels.

In sum of definitions of service quality by related scholars, this study defines it as

the services, provided by resort hotels according to customer needs, which can conform to customer's expectations for service and fulfill customer satisfaction. In addition to using the five aspects of SERVQUAL, this study adds the sixth aspect of "entertainment" for measurement. Entertainment is defined as leisure facilities, activities, and related travel services provided by resort hotels. The indicators of quality improvement are used to explore elements of service quality in order to construct a house of quality for customer needs.

C. Kano two-dimensional quality

Kano et al. (1984) proposed a two-dimensional quality model, which indicates that consumer satisfaction with quality is not a one-dimensional model, but a two-dimensional quality perspective. Llinares and Page (2011) used Kano's Two-Dimensional Quality Model to find out consumers' purchase decision factors when choosing real estate.

Different customers have different levels of satisfaction for quality characteristics, which are classified by "significant majority." The two-dimensional quality questionnaire in this study adopts the two-dimensional quality element classification chart by Matzler and Hinterhuber (1998), with five evaluation levels of "like," "must-be," "neutral," "bearable," and "dislike," to evaluate respondents' expectations which can be used as the basis for classifying two-dimensional quality. Referring to Kano's Two-Dimensional Quality Model questionnaire survey, Matzler and Hinterhuber (1998) proposed indicator formulas for quality improvements about the ratios of the quality element categories, which can be used to predict quality improvement satisfaction indicator. The formulas are as follows:

$$\text{Indicator for increasing satisfaction} = (A+O) / (A+O+M+I)$$

$$\text{Indicator for decreasing dissatisfaction} = (O+M) / (A+O+M+I) * (-1)$$

where A denotes an attractive quality, O denotes a one-dimensional quality, M denotes a must-be quality, and I denotes an indifferent quality. Hence, it is possible to analyze quality elements in order to understand how much satisfaction may be increased, and how much dissatisfaction may be decreased. The result can be served as reference for further improvements of quality.

D. Quality function deployment method

QFD was proposed in 1970 by Yoji Akao. When QFD is used in the service industry, it is possible to collect customer opinions and create a service quality chart, then

deploy the service items provided. Because service and customer are simultaneously produced and consumed respectively, it is important for the service industry to provide services in a timely manner. Thus, both of “service items deployment chart” and “quality elements deployment chart” are used to extract the most important service contents to gain customer satisfaction.

This study integrates Kano’s Two-Dimensional Quality Model and QFD method into a house of quality, providing Taitung County resort hotel operators with a method to understand the true opinions of customers, to analyze the order of priority of key operations of existing service quality, and to establish related strategies, finally to raise customer satisfaction.

III. Results and Discussion

A. Research framework

This study uses Kano’s Two-Dimensional Quality Model to summarize service quality elements and the quality elevation effects of the customer satisfaction coefficients, which are applied to a QFD method in order to construct the Taitung County resort hotel service quality house. Thus, the research framework established in this study is as shown in Figure 1.

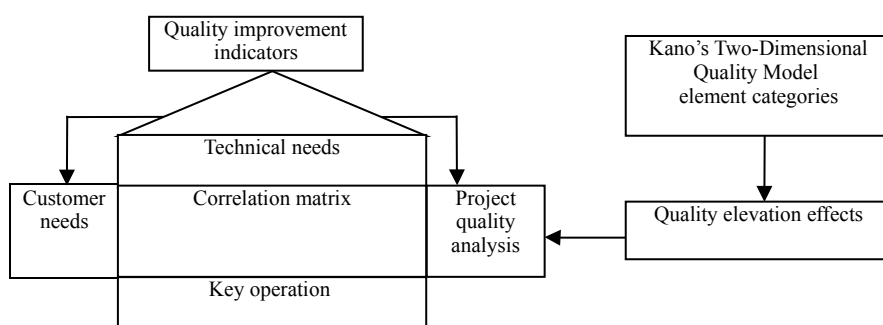


Figure 1. Research framework

B. Research design and scope

This study uses the questionnaire method for research, applies the widely used service quality measurement aspects of the SERVQUAL scale, and adds the aspect of “entertainment. The questionnaire elements refer to related scholarly works, as well as the hotel star-system for service quality evaluation criteria item chart established by

the Tourism Bureau, Ministry of Transportation and Communication (2010). Employee education and training, room management, food and beverage management, and leisure and travel are used to measure service quality technical needs for quality deployment. In the questionnaire, there are 22 service quality elements which are provided by Taitung County resort hotel operators and reported in Table A1.

The research scope is limited to legitimate resort hotels, with more than 60 guest rooms, located in the main scenic areas of Taitung County. Based on the comprehensive evaluation of Hotel-World Web (2010), Rainbow Resort, Toong Mao Resort, Hoya Resort, Toyugi Resort, Luminous Hot Spring Resort Spa, and Chief Spa Hotel are chosen. Therefore, the research subjects are those non-group tourists who lodge at these six resort hotels.

IV. Results and Analysis

This study uses stratified proportional sampling, with convenient sampling used to send out the questionnaires. There are 450 questionnaires sent out, with 386 valid questionnaires or 85.78% returned.

A. Kano's Two-Dimensional Quality Model analysis

According to the Kano two-dimensional quality questionnaire data, quality elements are categorized for statistical analysis, as shown in Table 1. The classification statistics show that 15 elements, such as “the hotel has appropriate room equipment,” are must-be quality elements; five items, such as “the hotel rooms are sufficiently clean,” are one-dimensional quality elements; and two elements, “the hotel provides sufficient leisure activities” and “the hotel can arrange related tourism and travel services,” are indifferent quality elements.

Table 1. Kano's Two-Dimensional Quality Model classification and influence of satisfaction coefficients

Item	A (%)	O (%)	M (%)	I (%)	Element categories	Increasing satisfaction coefficients	Decreasing dissatisfaction coefficients	Quality elevation effects
1	4.922	40.415	44.560	10.104	M	0.45	-0.85	0.90
2	3.627	45.855	43.264	6.995	O	0.50	-0.89	0.93
3	9.845	38.342	35.751	16.062	O	0.48	-0.74	0.84
4	6.477	32.642	40.933	19.948	M	0.39	-0.74	0.80
5	10.104	27.202	35.751	26.425	M	0.38	-0.63	0.73
6	6.218	33.679	47.150	12.953	M	0.40	-0.81	0.87
7	7.772	32.642	44.041	15.544	M	0.40	-0.77	0.84
8	6.736	35.492	44.301	13.472	M	0.42	-0.80	0.87
9	7.772	38.342	40.415	13.212	M	0.46	-0.79	0.87
10	15.285	33.420	26.943	24.093	O	0.49	-0.61	0.76
11	4.145	40.415	45.337	9.845	M	0.45	-0.86	0.90
12	3.109	38.601	45.855	12.435	M	0.42	-0.84	0.88
13	4.663	38.601	44.301	12.435	M	0.43	-0.83	0.88
14	5.440	34.715	46.114	13.731	M	0.40	-0.81	0.86
15	4.663	31.606	52.850	10.881	M	0.36	-0.84	0.89
16	7.772	32.642	43.005	16.580	M	0.40	-0.76	0.83
17	11.140	31.606	33.161	24.093	M	0.43	-0.65	0.76
18	13.472	37.565	26.166	22.798	O	0.51	-0.64	0.77
19	9.585	32.124	31.865	26.166	O	0.42	-0.64	0.74
20	12.694	25.907	32.383	28.756	M	0.39	-0.58	0.71
21	17.358	19.430	19.430	42.746	I	0.37	-0.39	0.57
22	16.839	23.834	18.912	40.155	I	0.41	-0.43	0.60

Note: Quality elevation effects = $(A+O+M)/(A+O+M+I)$

B. Process of constructing a house of quality

According to the classification of the service quality scale in this study, six aspects are deployed as the first level of the customer needs area. Then, a dichotomy is used to summarize the top 12 customer needs quality elements for improvement, which are deployed as the second level of the customer needs area.

This study organizes evaluation types from the service quality evaluation chart of the Tourism Bureau, and deploys four aspects, namely, “education and training,” “room management,” “food and beverage management,” and “leisure and travel” as the first level of hotel technical needs. Through discussing about the 12 elements extracted from customer needs quality, senior supervisors at resort hotels obtain the 13 corresponding technical needs elements, which are deployed as the second level of technical needs.

According to the 12 elements extracted from quality improvement indicators, customer expected importance regarding service quality is converted into the parameters of “relative importance.” On the other hand, the 12 quality elements deployed for customer needs are categorized by Kano’s Two-Dimensional Quality Model, and given “weighted scores,” where must-be quality elements weigh 2.5, one-dimensional quality elements weigh 2.0. The foregoing two parameters and the service quality elevation effect parameters are multiplied to get the weights of the planned elevation of quality, which are then ranked to determine the key quality elements of customer needs and shown as the right-hand area of the house of quality in Table 2.

In order to establish the correlation matrix in the middle area of the house of quality, the correlations between quality elements of customer needs and operational needs are evaluated by senior directors of Taitung County resort hotels, and given weights based on the strength of those correlations. The weight “5” denotes a strong correlation, “3” denotes a medium one, and “1” denotes a weak one, respectively. On the other hand, a blank denotes no correlation. Then, the mathematical mean is used to get the correlation weight. In addition, all the correlation weights are integrated into the correlation matrix of the house of quality, which improves the criteria for judging weights determined subjectively by most researchers.

According to the foregoing integrated analysis of the house of quality, the absolute and relative weights of the technical needs are obtained to rank key operation needs at the bottom area of the house of quality. The result can be provided to hotel operators for establishing key operations or improving the priority order of operations.

Based on the above analytical data, this study constructs a house of quality for Taitung County resort hotel service quality, shown as Table 2:

Table 2. Taitung County resort hotel service quality house

Level 1 ^a	Level 2 ^b	Two-dimensional quality classification	Education and training			Room management					Food and beverage management			Leisure and travel		Relative importance (%)	Two-dimensional quality weight	Quality elevation effects	Plan quality weight (%)	Key need management evaluation
			Employee professional knowledge education	Standard service operation training	Employee service attitude education	Room reservation work	Telephone reception work	Housekeeping operation	Room design	Room facility management	Menu design	Food pricing strategy	Food facility management	Packaged tour services	Design of leisure facility					
TAN	1	M	2.67	3.50	0.33	0.83	1.00	4.00	5.00	5.00	0	0	0	1.00	0.67	3.935	2.5	0.90	8.854	3
	2	O	5.00	5.00	2.33	1.33	0.50	5.00	1.67	4.67	0	0	0	0	0	4.110	2	0.93	7.645	9
	5	M	3.00	3.17	0.67	1.67	1.50	0	0	1.00	0.67	1.33	0.67	2.33	1.67	3.716	2.5	0.73	6.782	10
REL	8	M	5.00	4.67	4.33	2.33	3.00	3.00	0	1.33	1.67	0	1.33	1.67	1.33	3.884	2.5	0.87	8.448	5
RES	9	M	4.67	5.00	4.67	3.33	4.33	3.00	1.00	1.17	1.33	1.00	1.67	3.00	2.67	3.844	2.5	0.87	8.361	7
GUA	11	M	4.67	5.00	4.67	3.67	3.67	2.67	1.00	1.00	0	1.00	1.17	1.00	0.67	3.956	2.5	0.90	8.901	1
	13	M	4.33	5.00	4.00	3.50	3.83	4.00	1.00	2.67	2.67	2.00	2.50	2.33	2.67	3.907	2.5	0.88	8.595	4
	14	M	4.00	3.50	3.50	1.00	1.00	4.00	5.00	5.00	0.50	1.00	3.67	1.33	3.67	3.928	2.5	0.86	8.445	6
	15	M	3.00	2.00	1.00	3.33	1.67	4.33	4.33	3.50	0	0	2.67	0	3.00	3.995	2.5	0.89	8.889	2
	16	M	5.00	5.00	5.00	5.00	4.00	5.00	1.00	3.33	3.00	0.50	3.33	2.00	2.17	3.853	2.5	0.83	7.995	8
CAR	19	O	3.33	2.50	1.50	1.33	2.00	2.83	1.00	1.33	0	0	2.33	1.00	4.00	3.725	2	0.74	5.513	12
ENT	20	M	2.83	2.00	1.50	1.00	1.67	1.00	1.33	1.00	0	0	0	2.50	5.00	3.737	2.5	0.71	6.633	11
AWTN ^c			3.80	3.74	2.73	2.31	2.27	3.17	1.86	2.54	0.81	0.56	1.56	1.42	2.10					
RWTN ^d			0.13	0.13	0.09	0.08	0.08	0.11	0.06	0.09	0.03	0.02	0.05	0.05	0.07					
KOE ^e			1	2	4	6	7	3	9	5	12	13	10	11	8					

Notes: ^aIn the column of Level 1, TAN, REL, RES, GUA, CAR, and ENT indicate six aspects to

measure service quality in this study, which are tangibility, reliability, responsiveness, guarantees, care, and entertainment respectively.

^bEach of the numbers in the column of Level 2 denotes the same meaning as the corresponding number in the first column in Table A1.

^cAWTN indicates absolute weight of technical needs.

^dRWTN indicates relative weight of technical needs.

^eKOE indicates key operation evaluation.

V. Conclusions

In regard to customers' "key need elements," this study finds that the most important three ones in management for Taitung County resort hotels are "adequate treatment of customer complaints," "legitimacy of various facilities at the hotel," and "the hotel has appropriate room equipment" respectively, according to the integrated analytical results in the house of service quality. On the whole, it depends on the service of personnel to make the quality of hardware and software of hotels more satisfactory. The most important of all, hotel personnel must immediately take care of customers' complaints in order to raise customer satisfaction.

In addition to knowing the needs of the primary customers, it is necessary for hotels to continuously provide more delicate services to raise customer satisfaction in order that customers are accustomed to staying there. At the same time, since most of the Taitung County resort hotels have already been operating for quite some time, old facilities of rooms and hospitality have resulted in cost burden for resort hotel operators to renovate or maintain those facilities. Besides, it is suggested that software services also need to be strengthened.

On the other hand, the top three operators' "key operation elements" in order are "professional knowledge education for employees," "standard service operation training," and "housekeeping operation." Therefore, the education and training of resort hotel employees is very important. Service personnel are asked to do their best in familiarity with work, demand for operation quality, and the overall quality presented. In addition, customers have more demands for basic facilities. Hence, customer satisfaction would be affected by the overall comfort and cleanliness of rooms.

Derived from the analysis results of house of quality, the education and training of resort hotel employees is the most important key operation that needs to be implemented. On the other hand, since there is a very high turnover of primary-level employees in the service industry, hotels should establish a set of procedures that allow employees to raise their own work abilities or increase their knowledge and capacities. Thus, it is suggested that operators should assist employees with career planning, and ensure employees the regular periodical internal and external education and training.

Moreover, supervisors are authorized with the necessary decision-making powers in order that all employees would do their best as they can to provide services. Most small and medium resort hotels have standard operating procedures for providing their services. But the diversity of the service processes often confuses employees, which tends to cause customer to complain. Therefore, it is suggested that there should be continuous training about the standard operating procedures provided for first line employees. Furthermore, the supervisors or senior employees can take opportunities to teach and remind those employees of correct behavior. In this way, professional employees can be trained.

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Appendix

Table A1. Service quality elements provided by Taitung County resort hotel operators

Item	Description
1	The hotel has appropriate room equipment
2	The hotel rooms are sufficiently clean
3	The hotel can provide sufficient equipment and service for dining
4	Service personnel are dressed neatly and have a professional apparel
5	Geographic location of the hotel
6	Service personnel can provide related service information correctly
7	Service personnel are able to finish their work within promissory time
8	Service personnel are able to resolve problems in customer service
9	Service personnel can quickly provide the services you need
10	Service personnel are able to give a hand to you actively
11	Adequate treatment of customer complaints
12	The type of payment to the hotel is trusty
13	The hotel can fully carry out its services
14	The hotel's software and hardware facilities make you feel secure
15	Legitimacy of various facilities at the hotel
16	Service personnel are professional
17	Service personnel are able to provide personal service according to your need
18	Service personnel can actively provide services and send their regards to you in a good attitude

19	The opening hours of hotel facilities are convenient
20	The hotel has sufficient leisure facilities
21	The hotel provides sufficient leisure activities
22	The hotel can arrange related tourism services

台東縣休閒旅館服務品質之研究— 以品質機能展開法運用

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本研究採用 SERVQUAL 量表，檢測預期重要度及認知滿意度，並結合 Kano 二維品質模式，建構出台東休閒旅館的品質屋。由研究結果發現台東縣休閒旅館顧客的重要需求前三項為「對於顧客抱怨能盡快的妥善處理」、「旅館各項設施具有合法性」、「旅館有合適的客房設備」；經過品質屋的建構，得知飯店須優先改善或修訂的前三項管理作業為「員工專業知識教育」、「標準服務作業訓練」、「房務整理作業」。以上研究提供旅館業者改善品質的方向，及旅館優先執行之關鍵作業，以提供業者擬定提升服務品質的可行方案。

關鍵字：休閒旅館、服務品質、Kano 二維品質模式、品質機能展開法

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