

行政院國家科學委員會專題研究計畫 成果報告

應用 Kano 模型與 QFD 探討品牌接觸點與消費者體驗之研究：以溫泉旅館為例 研究成果報告(精簡版)

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計畫主持人：張國謙

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行政院國家科學委員會補助專題研究計畫 成果報告
 期中進度報告

應用 Kano 模型與 QFD 探討品牌接觸點與消費者體驗之研究：
以溫泉旅館為例

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中英文摘要

應用Kano模型與QFD探討品牌接觸點與消費者體驗之研究： 以溫泉旅館為例

摘要：品牌接觸可說是各種關於品牌的要素經由顧客的接觸後來傳達其品牌價值。然而，由於成本與效率的考量，品牌接觸的議題必須從顧客以及服務提供者兩方面來同時思考。因此，本文嘗試以結合Kano模型與品質機能展開之方法來探討品牌的接觸要素議題，並以溫泉旅館為實證的探討對象，而研究結果可歸納為以下幾點：（1）經由Kano模型的運用，結果顯示顧客對於所接觸到的要素大致上被歸類為一元品質素以及必要品質要素。其中，經由Kano模型所探討出的魅力品質要素可說是溫泉旅館提升顧客滿意度以及差異化競爭對手的利器；（2）經由Kano模型與QFD方法的結合運用，本研究整理出十項結合顧客與溫泉旅館觀點的十項品質要素作為溫泉旅館經營管理上的參考；（3）經由以品牌接觸矩陣的分析方法，本研究更進一步提供顧客對於相關要素體驗的結果；（4）在四個主要的接觸要素中，氣氛導向的接觸要素主導了顧客對於服務產品所知覺到的風險感或不確定性。

關鍵詞：品牌接觸、Kano 模型、品質機能展開（QFD）、顧客體驗、溫泉旅館

The Application of Kano's Model and QFD on Exploring Brand Contact and Consumer Experience—A Hot Spring Hotel Study

Abstract: Brand contacts are a variety of elements about how customers come into contact with a brand and how they communicate their values about it to other potential customers. For the sake of cost and efficiency, the brand contacts can be investigated not only from a customer perspective but also from that of the service provider. This paper thus attempts to integrate Kano model and quality function deployment (QFD) on exploring brand contact elements. The results gained from an empirical study of a hot spring hotel indicate that customers' perceptions about the contact elements are mostly classified into one-dimensional and must-be attributes by Kano model. The proposed approach contributes to the creation of attractive contact elements that have an enormous potential to further increase customer satisfaction and differentiate competitors. Moreover, along with the ten technical characteristics obtained by the integrated approach, the customers' contact experiences are displayed through the brand contact priority grid, both of which provide references for future hotel business development. Lastly, atmosphere-oriented brand contacts dominate customers' brand perceptions more than others, in that they lessen the customers' senses of risk and uncertainty toward the product/service offerings.

KEY WORDS: Brand contact, Kano mode, quality function deployment (QFD), customer experience, hot spring hotel

報告內容

Introduction

For the past several years, an integrated approach that combines Kano model with QFD (e.g. Matzler & Hinterhuber, 1998; Tontini, 2007) can be applied to solve the challenge of brand contact element exploration. This approach has been used for the following reasons. First, as stated by Sireli *et al.* (2007: 380), ‘Kano model uniquely identifies customer requirements (CRs) in detail by assigning different categories to different requirements, and can provide a more accurate voice of the customer (VOC) as an input to QFD analysis’. Second, as one of the most powerful TQM tools, in the QFD model, the sub-matrix of *hows* functioning as the design requirement of the firm can be used to determine demand from the VOC (i.e. the sub-matrix of *whats*). This means that the correlation between the *hows* and the *whats* shows the extent to which each design requirement of the firm affects each customer need (Shen *et al.*, 2000; Tan & Pawitra, 2001). Third, this integrated approach has been extended beyond its initial concept and has been used in service fields and utilised for service excellence development (Tan & Pawitra, 2001). In summary, Kano model is used to acquire the desired contact elements from customers while QFD is employed to take the identified elements into design with the compromise of provider’s capability and profitability. Thus, this integrated approach is suitable for brand contact exploration in the hotel business based on the perspectives of customers and service providers. Accordingly, this study aims to achieve the following research objectives: to empirically explore contact elements of a brand by incorporating an integrated approach using Kano model and the QFD technique, and to clarify how contact elements deliver brand messages to customers for their judgments which in turn shape the brand of the firm.

Literature Review

Brand Contacts and Managerial Issues

Several articles focused on contact elements as the indicators of building a firm’s brand, while other articles, in addition to the discussion of contact elements exploration, took an interest in understanding the effects of contact elements on customers’ perceptions toward a firm’s service and product offerings. Along with a review of the literature (see Carlzon, 1987; Flipo, 1988; McDouall & Snetsinger, 1990; Clark, 1993; Devlin & Dong, 1994; Hartline & Jones, 1996; Schultz, 1998; Wakefield & Blodgett, 1999; Schultz & Schultz, 2000; Fortini-Campbell, 2003; Logman, 2004; Chattopadhyay & Laborie, 2005), this study describes three managerial issues resulting from brand contact. First, brand contacts are a variety of elements by which customers and potential customers meet the brand. Second, the more the product/service offerings meet the customers’ requirements, even going beyond their expectations, the greater the

customers' experiences with the brand. Third, among the various contact elements, the more that desired contact elements are perceived by customers, the lower the customers' feelings of risk and uncertainty with respect to the brand.

Brand Contact Realms: Model Construction and Practice

The four kinds of content realms within the brand contact model for grouping key contact elements are shown in Figure 1, and are namely *Facility-Oriented Contact*, *Atmosphere-Oriented Contact*, *Service-Oriented Contact*, and *Image-Oriented Contact*. For example, in the hot spring hotel business the product of hot spring space belongs to the subject of goods and is a type of Facility-Oriented Contact. The management waiting at the front entrance of hot spring pool belongs to the subject of service by being a type of Service-Oriented Contact. A feeling of satisfaction is felt by the natural scenery surrounding the hot spring hotel, thereby creating a type of Atmosphere-Oriented Contact, and the event's association with health benefits belongs to the subject of transformation, and is an Image-Oriented Contact.

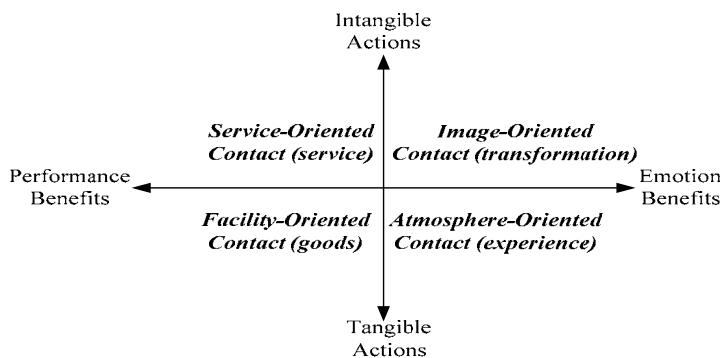


Figure 1. The four realms of brand contact

Proposed Integrated Approach in Exploring Brand Contact Elements

In response to the first managerial issue, Kano *et al.* (1984) have developed a two dimensional model of quality to categorise the attributes of a product or service based on how well they are able to satisfy customer needs in terms of a customer's perception and experience (Tan & Pawitra, 2001). Subsequent scholars have applied the model to various fields such as product development projects (Matzler & Hinterhuber, 1998). Yang (2005: 1128-1129) has summarised the five categories of Kano model as follows: attractive quality attribute, one-dimensional quality attribute, must-be quality attribute, indifferent quality attribute, and reverse quality attribute.

Based on publications of Kano model, the QFD analysis, first introduced by Akao in 1966, provides a means of translating customer requirements into appropriate technical requirements. QFD is a customer-oriented product development technique that links customer expectations to the technical characteristics of the product, in order to ensure market success once the product is released (Sireli *et al.*, 2007). It also could be used with contact elements in order to understand them in terms of customers and firms. Therefore, to achieve this study's purpose of acquiring brand contact elements, a

consideration of the benefits of Kano model and its integration into QFD can help a firm to prioritise which contact elements of a brand on which it should focus its efforts. Although customers decide what makes up the brand, marketers can save cost and time on elements of secondary importance to customers and then instead spend resources on crucial brand contacts. This is how the integration approach applied in this study can be useful.

Examination of Brand Contact Experiences

As for the second managerial issue, this study aims to understand customers’ experiences toward the brand contacts of a firm. Thus, based on the obtained contact elements, the brand contact priority grid provided by Fortini-Campbell (2003) is used to analyse what the marketer should do to bring the real brand into conformity with the aspirational brand. Although the contact elements are classified and ranked based on an integrated approach, to determine which contact elements make up customer’s requirements even beyond expectation is necessary. In this grid, based on the bi-polar assessments of importance and satisfaction, brand contact elements obtained from the integration approach are displayed into what customers see as *Delighters*, *Disgusters*, *Annoyances*, and *Frills*.

Examination of Brand Contact Perceptions

Furthermore, since brand attitude is a customer’s overall evaluation of a brand (Keller, 1993), customers will form a different perception based on the performance of the elements they encounter (Shen *et al.*, 2000). Thus, the third managerial issue in this study focuses on understanding the relationship between the different types of contact elements (facility, atmosphere, service, or image) and customers’ perceptions toward the hot spring hotel, i.e. the customers’ senses of risk and uncertainty (Tarn, 2005) are examined. Consequently, this study proposes to clarify the aforementioned assumption in the final stage of the brand contact examination, and to accordingly list the research framework as Figure 2.

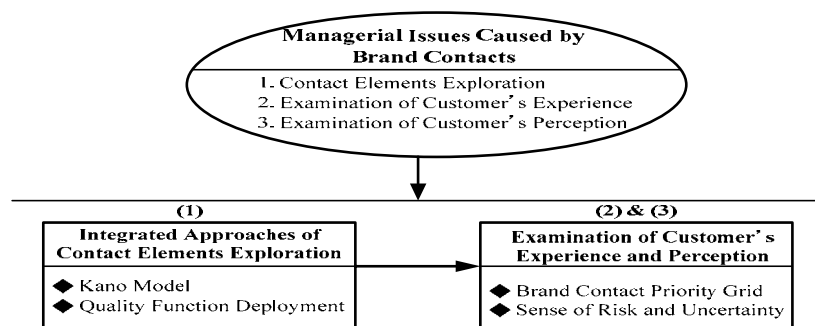


Figure 2. Research framework

Research Methodology

Acquisition of Contact Elements of a Hot Spring Hotel-the 1st Managerial Issue

After summarising the related studies, this paper categorises related contact elements into specific contact classifications within the four realms of brand contact as shown in Figure 3 and as explained in the following paragraphs.

		Encounter Actions		
		Tangible Actions	Intangible Actions	
Encounter Benefits Performance Benefits Emotion Benefits	Facility-Oriented	<ul style="list-style-type: none"> ◆ Hot spring bathing ◆ Lodging & Dining ◆ Transportation 	Service-Oriented	<ul style="list-style-type: none"> ◆ Managerial effect ◆ Staff work ◆ Website function
	Atmosphere-Oriented	<ul style="list-style-type: none"> ◆ External landscape ◆ Internal design ◆ Pricing 	Image-Oriented	<ul style="list-style-type: none"> ◆ Health association ◆ Travel association ◆ Culture association

Figure 3. Brand contact elements of hot spring hotel

The Kano Model Analysis for the 1st Managerial Issue

At this stage each identified contact element concerning customer requirements will be analysed on the basis of Kano model. The Kano questionnaire, consisting of pairs of one positive and one negative question, provides a systematic way of grouping customer requirements into different Kano categories. A pair of questions is: ‘how would you feel if the hot spring hotel has *the element*?’ and ‘how would you feel if the hot spring hotel does not have *the element*?’ For both questions, customers choose from one of the following responses: ‘delighted’, ‘expect and like it’, ‘no feeling’, ‘live with it’, or ‘do not like it’. Thus, the questionnaire design is based on the four contact fields in terms used in Kano’s two dimensional quality model, as listed in Table 1.

Table 1. Hot spring hotel contact fields and their elements

Contact Realm	Contact Classification	Contact Element
Facility-Oriented Contact	Hot spring bathing	<ul style="list-style-type: none"> ● various hot spring pools ● certified hot spring water
	Lodging & Dining	<ul style="list-style-type: none"> ● comfortable hotel room ● local cuisine
	Transportation	<ul style="list-style-type: none"> ● convenient mass transit system ● sufficient parking space
Atmosphere-Oriented Contact	External landscape	<ul style="list-style-type: none"> ● surrounding natural scenery ● local environment planning
	Internal design	<ul style="list-style-type: none"> ● overall safety ● unique style
	Pricing	<ul style="list-style-type: none"> ● reasonable pricing ● extra charge noticed in advance
Service-Oriented Contact	Managerial effect	<ul style="list-style-type: none"> ● wait-in-line management ● customer reaction channel
	Staff work	<ul style="list-style-type: none"> ● employee service attitude ● employee service efficiency
	Website function	<ul style="list-style-type: none"> ● clear information on the website ● an easily navigable website
Image-Oriented Contact	Health association	<ul style="list-style-type: none"> ● physical and mental health association ● emotion exchange association
	Travel association	<ul style="list-style-type: none"> ● amusement association ● recreation and tourism association
	Culture association	<ul style="list-style-type: none"> ● local customs association ● history and culture association

Based on the procedures provided by Shen *et al.* (2000), customer contact elements can be categorised as ‘must-be’, ‘one-dimensional’, or ‘attractive’; however, at times, customers may not be able to express their opinion whether a particular contact element

feature of a hot spring hotel fulfils their needs. In this case, it may be classified as ‘indifferent’ rather than one of the three main categories. All the outcomes of Kano’s analysis are shown and discussed in the Results section.

Use of Quality Function Deployment Analysis for the 1st Managerial Issue

The QFD analysis is performed based on the thoroughly collected and deeply analysed customer requirements from the previous stage. Specifically, the contact elements analysed using the Kano model is used as input to the QFD analysis. Among the various stages of QFD, the house of quality (HOQ) is the most commonly used stage and its aim is to reflect customer desires and tastes. The HOQ construction begins with the left room, i.e. the collection of customer needs and their priorities. It consists of several sub-matrices joined together in various ways, and each contains information related to the others (see Figure 4).

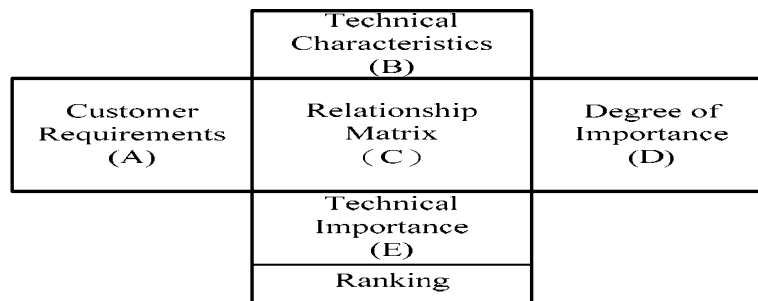


Figure 4. A house of quality

The Brand Contact Priority Grid Analysis-the 2nd Managerial Issue

Subsequent to the QFD analysis, based on the bi-polar evaluations of importance and satisfaction, the Brand Contact Priority Grid is used to answer two questions which are *how important* and *how good* is each current contact element to a hot spring hotel customer. Therefore, along with the degree of importance to which each subject is asked to rate the importance (1 to 5 scale), satisfaction (1 to 5 scale) is also asked in a Kano questionnaire. The results could provide information on how to prioritise the elements within quadrants (i.e. Delighters, Disgusters, Annoyances, and Frills), and, for example, on how to fix the worst disgusters before the lesser issues.

The Examination of Customer’s Perception-the 3rd Managerial Issue

Finally, another managerial issue to consider is to understand the relationship between the customer’s experience and attitude toward the hot spring hotel. Thus, subjects are asked to respond to another four questions in a Kano questionnaire designed to confirm that a customer is satisfied with the important contact elements and if they will demonstrate their positive attitude toward the hot spring hotel. The customer’s perception toward a service draws on past research (i.e. Tarn, 2005) on the dimension of ‘sense of service risk and uncertainty’. The scale includes four items which are established with operationalisation assessed on a 5-points Likert scale, ranging from

1=strongly disagree to 5=strongly agree. The four items are ‘This hot spring hotel makes me feel very trustworthy’, ‘I believe this hot spring hotel is a great hotel’, ‘If I need to recommend a hot spring hotel to others, I will consider this hot spring hotel as a possible destination’, and ‘After visiting this hot spring hotel, I would consider visiting here again’.

Research Samples and Data Collection

This study explores the contact elements of a hot spring hotel and also tries to understand the customer’s experience with a hot spring hotel’s brand contacts. Therefore, in this study, a hot spring hotel located in Wu-Lai hot spring district (one of the most famous hot spring districts in Taipei area) was selected. Respondents are tourists who have visited the selected hot spring hotel and were asked to participate in the study before they left for home. A total of 300 questionnaires were distributed to the subjects for a convenient sampling that lasted for one week (Monday through Sunday, 10 am to 6 pm).

Results

Statistical analyses of the collected questionnaires were computed based on the 267 effective responses regarding the hot spring hotel. The statistical software of SPSS 10.0 was used to conduct the following examinations as described below.

The Results of Kano Model Analysis for the 1st Managerial Issue

The classification of contact elements utilised the method of the Kano evaluation table, proposed by Matzler & Hinterhuber (1998). Finally, the contact elements were classified as based on the contributed percentage of the quality attributes, as shown in Table 2.

Table 2. The percentage and categorisation of contact elements by Kano model

Items	Attractive	One-dimensional	Must-be	Indifferent	Reverse	Invalid	Categorisation
1. various hot spring pools	12.36	22.10	37.08	26.97	0.75	0.75	must-be
2. certified hot spring water	12.36	24.72	34.46	26.97	0.37	1.12	must-be
3. comfortable hotel room	19.85	20.97	28.09	30.71	0.37	0.00	must-be / indifferent
4. local cuisine	22.47	19.10	14.61	43.32	0.75	0.75	Attractive / indifferent
5. convenient mass transit system	11.61	26.22	25.84	34.46	1.50	0.37	indifferent
6. sufficient parking space	10.11	29.21	37.45	20.60	1.12	1.50	must-be
7. surrounding natural scenery	17.23	43.07	26.22	11.61	0.75	1.12	one-dimensional
8. local environment planning	11.61	32.58	32.58	22.10	1.12	0.00	must-be / one-dimensional
9. overall safety	4.87	26.97	49.06	18.73	0.37	0.00	must-be
10. unique style	30.34	28.09	17.23	23.60	0.37	0.37	attractive / one-dimensional
11. reasonable pricing	4.49	25.09	52.06	17.23	0.75	0.37	must-be
12. extra charge noticed in advance	4.49	21.35	62.55	10.49	1.12	0.00	must-be
13. wait-in-line management	8.99	12.36	49.81	27.34	0.75	0.75	must-be
14. customer reaction channel	8.24	19.48	34.46	36.33	1.12	0.37	must-be / indifferent
15. employee service attitude	3.37	38.20	43.07	14.61	0.75	0.00	must-be
16. employee service efficiency	6.74	34.08	40.82	17.98	0.37	0.00	must-be
17. clear information on the website	11.99	16.85	29.59	40.82	0.37	0.37	indifferent / must-be
18. an easily navigable website	11.24	19.48	34.83	33.71	0.00	0.75	must-be / indifferent
19. health association	15.73	33.71	13.48	36.70	0.00	0.37	indifferent / one-dimensional
20. emotion exchange association	19.10	26.59	11.99	40.45	0.37	1.50	indifferent / one-dimensional
21. amusement association	17.98	24.72	17.98	38.95	0.00	0.37	indifferent / one-dimensional
22. recreation & tourism association	17.98	33.71	19.48	28.46	0.00	0.37	one-dimensional / indifferent
23. local customs association	34.46	13.48	11.24	40.07	0.00	0.75	indifferent / attractive
24. history & culture association	32.21	10.49	9.74	46.07	0.75	0.75	indifferent / attractive

The Results of Quality Function Deployment Analysis for the 1st Managerial Issue

Following the classification of customer requirements into their appropriate Kano

categories, quality function deployment is utilised through the voice of customers to drive the serial activities of a firm, in order to aggressively pursue customers' delight instead of dealing with the customer complaints (Akao, 1990). Thus, the function of QFD is to break all of the customers' expectations into more concrete and specific needs wherein the customers' needs must actually and exactly be transferred as the firm's required information. In order to employ the QFD technique, the correlated analysis between Technical Characteristics and Customer Requirements is conducted to list the Relationship Matrix, in which the correlation between the design requirement (i.e. hows) and the voice of customers (i.e. wants) were observed.

Consequently, through the interviews with experts (three hot spring hoteliers), the correlation between the hows (listed in rows) and wants (listed in columns) were explored to determine which merited the most strongest relationship fill in 9 point (marked as Δ), the second strongest relationship fill in 3 point (marked as \square), and the least strong relationship fill in 1 point (marked as \circ). Finally, through the process of cross analysis of the two axes, the Relationship Matrix was obtained as shown in Table 3.

Along with the process of calculating the correlation matrix, the degree of importance of each contact element, as derived from the respondents, is also considered. In other words, the final ranked score of each contact element is achieved by multiplying each contact element by the degree of importance and then divided by the total number of elements. The ranking of contact elements would finally provide hot spring hoteliers with a guide for making trade-offs in resource allocation (Shen *et al.*, 2000). For example, as for the relationship between ingredient quality and local cuisine, the total score is calculated as $(9 \times 3.62 + 3 \times 4.30 + 9 \times 3.91 + 3 \times 3.46 + 3 \times 3.39) / 24 = 4.22$. Other elements are also calculated by following this method. Consequently, in order to understand which contact elements needed to be improved first; two prerequisites are defined in this study: (1) the top ten services that need urgent improvement by service providers, and (2) those of these service offerings that are highly correlated to the contact elements (i.e. the cell marked as highly correlated Δ). The consideration is that once the top ten service offerings are taken into account, the major contact elements are improved as well. According to the Table 3, the items in accordance with the assumed prerequisites were obtained as listed in Table 4. This table shows that QFD can effectively understand the relationship between customers and service providers. Combining the results both from operators and customers' perception toward the hot spring hotel, this study provides references for hoteliers to make future improvements, and they are expected to help publicise hot spring activities.

Table 3. A house of quality for hot spring hotel

strong – 9 moderate – 3 weak – 1		Administration Management			Housekeeping Management			F & B Management			Hot Spring Facility Management			Marketing Management			Customer Service			Degree of Importance
		personnel management	general affairs management	employee training	room reservation	room service	accommodation environment	menu design	ingredient quality	dining environment	hot spring facility	water quality and hygiene	bathing safety	CRM	community interrelation	propaganda activities	complain responses	information service	additional services or facilities	
Facility-Oriented	various hot spring pools (1)																		4.04	
	certified hot spring water (2)																		4.45	
	comfortable hotel room (3)																		3.77	
	local cuisine (4)																		3.62	
	convenient mass transit system (5)																		3.68	
	sufficient parking space (6)																		4.03	
Atmosphere-Oriented	surrounding natural scenery (7)																		4.03	
	local environment planning (8)																		4.07	
	overall safety (9)																		4.30	
	unique style (10)																		4.01	
	reasonable pricing (11)																		4.29	
	extra charge noticed in advance (12)																		4.09	
Service-Oriented	wait-in-line management (13)																		3.95	
	customer reaction channel (14)																		3.95	
	employee service attitude (15)																		4.25	
	employee service efficiency (16)																		4.19	
	clear information on the website (17)																		3.79	
	an easily navigable website (18)																		3.78	
Image-Oriented Contact	health association (19)																		3.91	
	emotion exchange association (20)																		3.71	
	amusement association (21)																		3.63	
	recreation & tourism association (22)																		3.83	
	local customs association (23)																		3.46	
	history & culture association (24)																		3.39	
Technical Importance	4.69	7.72	10.79	6.08	6.03	8.68	6.94	4.22	5.89	16.66	6.24	7.47	12.04	5.99	15.17	3.65	8.37	5.58		
Ranking	16	7	4	11	12	5	9	17	14	1	10	8	3	13	2	18	6	15		

Table 4. The correlation between technical characteristics and customer requirements

Ranking	Technical characteristics of hot spring hotel	Highly correlated with customer requirements
1	Hot spring facility	various hot spring pools, certified hot spring water, comfortable hotel room, surrounding natural scenery, unique style, health association, emotion exchange association, amusement association, recreation & tourism association
2	Propaganda activities	surrounding natural scenery, unique style, health association, emotion exchange association, amusement association, recreation & tourism association, local customs association, history & culture association
3	CRM	wait-in-line management, reaction channel, employee service attitude, employee service efficiency
4	Employee training	wait-in-line management, employee service attitude, employee service efficiency
5	Accommodation environment	surrounding natural scenery, local environment planning, unique style
6	Information service	clear information on the website, an easily navigable website, history & culture association
7	General affairs management	parking space , local environment planning, reasonable pricing
8	Bathing safety	various hot spring pools, certified hot spring water, overall safety
9	Menu design	local cuisine, unique style, health association
10	Water quality and hygiene	certified hot spring water, overall safety, health association

The Results of Brand Contact Priority Grid Analysis for the 2nd Managerial Issue

Furthermore, this study aims to understand customer brand contact experiences and customers’ perceptions of the hot spring hotel. According to what Fortini-Campbell (2003) proposed, based on the evaluation of the degree of importance (Y-axis) and the evaluation of the level of satisfaction (X-axis), the brand contact priority grid (shown as Figure 5) clearly reveals what customers need, with an emphasis on the contact elements as described below.

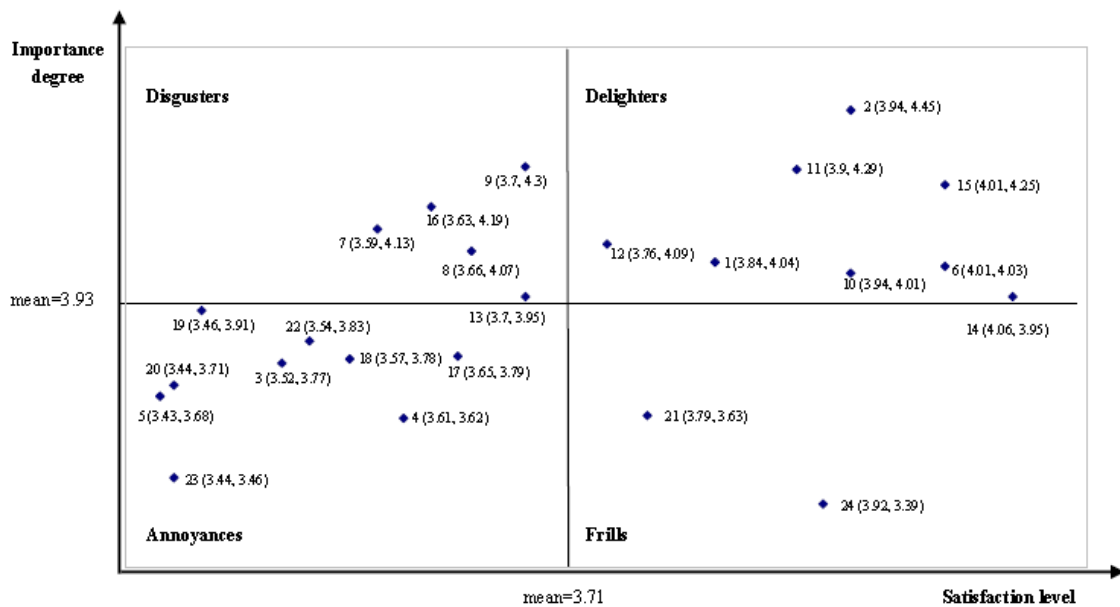


Figure 5. The display of brand contact priority grid

The Results of Customer’s Perception Analysis for the 3rd Managerial Issue

Finally, as mentioned earlier, this study infers that a customer’s contact toward the facility, atmosphere, service, and image-oriented elements *will significant negatively related* to their sense of risk and uncertainty of the service offerings, i.e. the higher the

customer's perception toward the contact elements is, the lower the risk and uncertainty sensed by customers. Therefore, Multiple Regressions were conducted to examine the research question. The analysis of variance is significant, indicating that the predicted variables affect the dependent variables at the 1% significance level ($F=23.97$). As for the issue of colinearity, all of the values of CI are under 30, indicating that there is no significant colinearity problem (Belsley *et al.*, 1980). The results suggest that four independent variables explain about 30.2% of the variance of the dependent variable. Furthermore, the β values of the four independent variables are 0.68 ($p>0.10$) for the facility-oriented elements, 0.28 ($p<0.01$) for the atmosphere-oriented elements, 0.002 ($p>0.10$) for the service-oriented elements, and 0.87 ($p>0.10$) for the image-oriented elements. Thus, only the atmosphere-oriented contact elements support the assumed relationship in this study.

Summary

The present study used Kano model to analyse the desired contact elements from customers, and QFD was employed to take the identified elements into design with the compromise of a service provider's technical considerations. Accordingly, this study also reports the development of a measurement scale for hot spring hotels based on the four contact realms (i.e. facility, atmosphere, service, and image oriented contacts), synthesised from related literature reviews. The results could also be useful to other hospitality businesses for strategic or tactical purposes.

With regard to the categorisation by Kano's two dimensional model, the results found that four elements were classified as an attractive quality, seven elements were classified as a one-dimensional quality, fourteen elements were classified as a must-be quality, and twelve elements were classified as an indifference quality. Obviously, contact elements were classified as both one-dimensional and must-be qualities, which mostly has been provided in the existing hot spring hotel. Additionally, these elements are viewed as 'basis features'; that is, when they are absent they will cause customer dissatisfaction (Kano *et al.*, 1984). In addition, we have to understand quality element varying over time. For instance, attractive quality switches between being a one-dimension quality and a must-be quality. Thus, the purpose of using Kano model is to help managers to determine proper service offerings.

As for the results of QFD, ten technical characteristics were obtained after a serial analysis process. Holistically, the six main technical fields were represented by at least one technical characteristic, meaning that all technical fields are equally concerned. Furthermore, the technical characteristics of CRM and employee training indicate that long-term relationships are gradually coming to be respected by service providers (Winer, 2001).

As for the results of brand contact priority grid, hoteliers have to maintain the same services that kept the customers' satisfaction. These services are those elements located in the Delighters area as well as in the Frills area. It should be noted that elements in the

atmosphere-oriented contact realm represent a polar phenomenon, that is, for the elements of surrounding natural scenery, local environment planning, and overall safety which located in the Disgusters area while unique style, reasonable pricing, and extra charge noticed in advance located in the Delighters area. Furthermore, some image-oriented contact elements such as associations with health, emotion exchange, recreation & tourism, and local customs in the Annoyances area have the potential to be improved and to become attractive attributes that could help surpass competitors (Shen *et al.*, 2000).

As for the examination of customer's perception toward the hot spring hotel services, the higher the customer's perception toward the service, the lower the risk and uncertainty sensed by customers. However, only atmosphere-oriented contact elements demonstrate the assumed relationship that is accordance with the results of Kano model, that the atmosphere-oriented contact can be categorised into one-dimensional or attractive quality attributes as mentioned earlier. Since the competition is extremely intense in this market, most of the firms are gradually similar in facility and service offerings. Thus, a service firm adopts atmospheric marketing to induce customers to evoke positive associations with products/services from specific events. In other words, because the image-oriented contacts are still in infancy in the customer's mindset, service providers create atmospheric influence in order to reduce customers' senses of risk and uncertainty towards the product/service offerings.

References

- Akao, Y. (1990) *Quality Function Deployment: Integrating Customer Requirements into Product Design* (Cambridge, MA: Productivity Press).
- Belsley, D. A., Kuh, E., & Welsch, R. E. (1980). *Regression diagnostics*. New York: Wiley.
- Carlzon, J. (1987) *Moments of Truth* (New York: Ballinger).
- Chattopadhyay, A. & Laborie, J. L. (2005) Managing brand experience: the market contact audit TM, *Journal of Advertising Research*, March, pp. 9-16.
- Clark, T. (1993) The market provision of management services, information symmetries and service quality—some market solutions: an empirical example, *British Journal of Management*, 4(4), pp. 235-251.
- Devlin, S. J. & Dong, H. K. (1994) Service quality from the customers' perspective, *Marketing Research*, 6(1), pp. 5-13.
- Flipo, J. P. (1988) On the intangibility of services, *The service Industries Journal*, 8(3), pp. 286-298.
- Fortini-Campbell, L. (2003) *Kellogg on Integrated Marketing: Integrated Marketing and the Consumer Experience* (New Jersey: John Wiley & Sons Press).
- Hartline, M. D. & Jones, K. C. (1996) Employee performance cues in a hotel service environment: influence on perceived service quality, value, and word-of-mouth intentions, *Journal of Business Research*, 35, pp. 207-215.

- Kano, N., Seraku, N., Takahashi, F. & Tsuji (1984) Attractive quality and must-be quality, *Journal of Japanese Society for Quality Control*, 14, pp. 39-48.
- Keller, K. N. (1993) Conceptualizing, measuring, and managing customer-based brand equity, *Journal of Marketing*, 57(1), pp. 1-22.
- Logman, M. (2004) The LOGMAN model: a logical brand management model, *Journal of Product & Brand Management*, 13(2), pp. 94-104.
- Matzler, K. & Hinterhuber, H. H. (1998) How to make product development projects more successful by integrating Kano's model of customer satisfaction into quality function deployment, *Technovation*, 18(1), pp. 25-38.
- McDougall, G. H. G. & Snetsinger, D. W. (1990) The intangibility of services: measurement and competitive perspectives, *Journal of Services Marketing*, 4(4), pp. 27-40.
- Schultz, D. E. (1998) What Dell delivers: a lost opportunity in brand contact, *Marketing News*, 32(17), pp. 5-6.
- Schultz, D. E. & Schultz, H. F. (2000) How to build a billion dollar business-to-business brand? *Marketing Management*, 9(2), pp. 22-28.
- Shen, X. X., Tan, K. C. & Xie, M. (2000) An integrated approach to innovative product development using Kano's model and QFD, *European Journal of Innovation Management*, 3(2), pp. 91-99.
- Sireli, Y., Kauffmann, P. & Ozan, E. (2007) Integration of Kano's model into QFD for multiple product design, *IEEE Transactions on Engineering Management*, 54(2), pp. 380-390.
- Tan, K. C. & Pawitra, T. A. (2001) Integrating SERVQUAL and Kano's model into QFD for service excellence development, *Managing Service Quality*, 11(6), pp. 418-430.
- Tarn, D. C. (2005) Marketing-based tangibilization for services, *The Service Industries Journal*, 25(6), pp. 747-772.
- Tontini, G. (2007) Integrating the Kano model and QFD for designing new product, *Total Quality Management*, 18(6), pp. 599-612.
- Wakefield, K. L. & Blodgett, J. G. (1999) Customer response to intangible and tangible service factors, *Psychology and Marketing*, 16(1), pp. 51-68.
- Winer, R. S. (2001) A framework for customer relationship management, *California Management Review*, 43(4), pp. 89-105.
- Yang, C. C. (2005) The refined Kano's model and its application, *Total Quality Management*, 16(10), pp. 1127-1137.

計畫成果自評

本研究之研究內容和執行方式與原計畫大致上是一致的，主要是以結合 Kano 模型與品質機能展開之方法來探討消費者品牌要素接觸及企業品牌建構等議題。藉由此兩種方法之結合應用，可以助益於企業以消費者之品牌要素接觸角度及企業成本與效率之考量，來建構與發展自我品牌。本研究以溫泉旅館為實證的探討對象，其考量是除了品牌之議題是近來政府大力推廣的產業發展方向外，此種產業是台灣特有溫泉資源結合觀光休閒潮流下的代表性產業之一。因此，對於溫泉旅館產業內消費者品牌接觸議題之探討，有助於溫泉旅館業者在自我品牌建構上有更深入的瞭解。再者，本研究以結合 Kano 模型與品質機能展開之方法來探討品牌之議題，可以連結過去文獻對於相關議題討論之不足，因此，本研究在文獻探討上有一定程度之貢獻性。再者，以溫泉旅館為探討對象之實證研究結果亦能提供溫泉旅館業者於品牌建構時有不同層面之思考。整體而言，從理論面及實務面來看，本研究議題與研究成果適合未來在國內外的學術期刊上發表，以供學術界及實務界作為研究相關議題之參考。

可供推廣之研發成果資料表

 可申請專利 可技術移轉

日期：98年10月5日

國科會補助計畫	計畫名稱：應用 Kano 模型與 QFD 探討品牌接觸點與消費者體驗之研究—以溫泉旅館為例 計畫主持人：張國謙 計畫編號：NSC97-2410-H-263-005-SSS 學門領域：休閒遊憩
技術/創作名稱	應用 Kano 模型與 QFD 探討品牌接觸點與消費者體驗之研究—以溫泉旅館為例
發明人/創作人	張國謙
技術說明	<p>研究結果可歸納為以下幾點：(1) 經由 Kano 模型的運用，結果顯示顧客對於所接觸到的要素大致上被歸類為一元品質素以及必要品質要素。其中，經由 Kano 模型所探討出的魅力品質要素可說是溫泉旅館提升顧客滿意度以及差異化競爭對手的利器；(2) 經由 Kano 模型與 QFD 方法的結合運用，本研究整理出十項結合顧客與溫泉旅館觀點的十項品質要素作為溫泉旅館經營管理上的參考；(3) 經由以品牌接觸矩陣的分析方法，本研究更進一步提供顧客對於相關要素體驗的結果；(4) 在四個主要的接觸要素中，氣氛導向的接觸要素主導了顧客對於服務產品所知覺到的風險感或不確定性。</p> <p>The results gained from an empirical study of a hot spring hotel indicate that customers' perceptions about the contact elements are mostly classified into one-dimensional and must-be attributes by Kano model. The proposed approach contributes to the creation of attractive contact elements that have an enormous potential to further increase customer satisfaction and differentiate competitors. Moreover, along with the ten technical characteristics obtained by the integrated approach, the customers' contact experiences are displayed through the brand contact priority grid, both of which provide references for future hotel business development. Lastly, atmosphere-oriented brand contacts dominate customers' brand perceptions more than others, in that they lessen the customers' senses of risk and uncertainty toward the product/service offerings.</p>
可利用之產業及可開發之產品	溫泉旅館產業、一般旅館產業
技術特點	Kano 模型與 QFD 之應用
推廣及運用的價值	溫泉旅館可以消費者之消費體驗為調查依據來建構其品牌價值

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