

Tourist Behavioural Intentions in Relation to Service Quality and Customer Satisfaction in Kinmen National Park, Taiwan

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ABSTRACT

This study assesses tourist satisfaction and its links with service quality using a hierarchical model that combines four primary determinants and eight corresponding sub-dimensions. A sample of 616 tourists departing from Kinmen Airport was surveyed with a structured questionnaire after they had just visited Kinmen National Park. A series of analyses was performed to explore tourist satisfaction with the four main service quality attributes as well as their willingness of repeat visits and recommendation. As a result, it was consistently found that service quality has positive significant relationship with tourist satisfaction. It is thus suggested that national park managers have to satisfy tourists with a high level of service quality, based on the concept that service quality may have a significant influence on long-term behavioural intentions through high levels of customer satisfaction. Copyright © 2010 John Wiley & Sons, Ltd.

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INTRODUCTION

National parks, by their very nature, are important places for the protection of ecological systems and natural resources as well as for the provision of recreational and tourism opportunities for the public (Ma *et al.*, 2009). Furthermore, national parks are considered to be repositories of outstanding natural scenery, as well as cultural and/or historic resources. Both are popular and significant as sites of tourism development (Zhong *et al.*, 2008). From a Western perspective, the objectives of a national park revolve around a tension between two values — preservation and recreation — and thus this tension must be resolved in ways pertinent to each case as determined by not only the nature of the park but also the political, economic and legal frameworks within which they operate (Barros, 2005). This notion implies the role that economic development plays in the national parks. As noted by Ryan *et al.* (2008), national parks serve as important nodes of economic growth. In this sense, external and internal forces that shaped tourism development in the national parks must be studied in order to retain the competitiveness and sustainability of the national parks. It is argued that one of the fundamental

characteristics of the competitiveness perspectives is its emphasis on resources as a fundamental determinant of firm performance (Dierickx and Cool, 1989; Rumelt *et al.*, 1991). Besides, Ritchie and Crouch (2003) noted that the competitiveness of a destination is its ability to increase tourists' expenditure and to attract increasing numbers of visitors to the destination while providing them with quality services and satisfying experiences. It is thus important to explore tourist satisfaction with the destination as well as the service quality, which are associated with tourist behavioural intentions.

According to the extant literature, the primary and sub-dimensions of service quality have been identified for a variety of industries such as the education, health care, retailing, tourism, telecommunication, technology, transport and recreational sports sectors using a hierarchical model as a framework (Brady *et al.*, 2001; Collins, 2005; Jones, 2005; Caro and Roemer, 2006; Fassnacht and Koese, 2006; Kang, 2006; Clemes *et al.*, 2007; Dagger *et al.*, 2007; Kao, 2007; Caro and Garcia, 2007, 2008). Yet there are few models applied to empirical studies of national parks. Therefore, this research focuses on tourists visiting Kinmen National Park, evaluates dimensions and sub-dimensions of service quality and ascertains tourist satisfaction with the attributes of service quality and their willingness of repeat visits and recommendation. The objectives of this study are fourfold: (i) to identify the dimensions of service quality as perceived by tourists in the National Park; (ii) to identify the sub-dimensions for the service quality as perceived by tourists in the National Park; (iii) to examine the interrelationships between service quality and satisfaction and customer loyalty related to behavioural intentions as perceived by tourists in the National Park; and (iv) to examine the effects of demographic factors on behavioural intentions as perceived by tourists in the National Park. The results of this research may contribute to the validity and applicability of the model to the tourism development evolution of national parks.

KINMEN NATIONAL PARK: AN OVERVIEW

Kinmen, also known as Quemoy in some Western countries, is a small island located off

the southeastern coast of China. Geographically, Kinmen lies opposite Xiamen City in China's Fujian Province. During the Cold War Era, the Nationalist (Kuomintang) Army retreated from mainland China to Taiwan in a civil war and was stationed in Kinmen (of Taiwan). Since 1949, battles or conflicts have occasionally occurred between the People's Liberation Army and the Nationalist Army. Meanwhile, the order of martial laws was implemented on the Island, and not until 1993 was the ban on tourists from Taiwan to Kinmen lifted. Since then, Kinmen has developed tourism as an economical development approach, with 450,000 tourists visiting the island for sight seeing the battlefields (Chen and Henning, 2004; Chen *et al.*, 2009a).

Over 40 years of military administration has hampered the pace of Kinmen's urbanization; however, this has enabled its historical heritage and war culture to be well preserved. As a result, historical relics and warfare reserves are the main resources of tourism on the Island (Chen *et al.*, 2010). Aiming to conserve a combined war history, heritage of cultures and natural resources, Kinmen National Park was established on the island in 1995 (Figure 1). As one of the seven national parks in Taiwan, Kinmen National Park has rich warfare history and cultural assets that forge distinctive characteristics and promise a competitive insight. Comprising one-third of the Island, Kinmen National Park is 3,720 hectares in dimension, and is divided into four areas — scenic area, historic area, recreational area and limited area for reconstruction, according to the regulation of the National Park Act of Taiwan (Kinmen National Park, 2008). Overall, Kinmen National Park is unique in that it is the first national park in Taiwan with focus on preservation of historical sites, war monuments and natural resources, and therefore the Taiwanese government has taken steps to preserve the Park's cultural sites, war reserves and primitive and pristine zones so that visitors can observe its vibrant landscape.

LITERATURE REVIEW

Intentions to perform a behaviour, such as a purchase or consumption behaviour, have been widely investigated in the marketing



Figure 1. Location of the Kinmen National Park.

literature (Gabler and Jones, 2000). Generally, customer behavioural intentions involve significant decision-making, particularly in repurchase decisions (White and Yu, 2005). In the context of behavioural intentions, customer satisfaction has been related according to the literature (Dabholkar and Thorpe, 1994; Kang *et al.*, 2004; Lin and Hsieh, 2007; Clemes *et al.*, 2008; Pollack, 2009). Furthermore, customer satisfaction has been suggested as having a direct impact on behavioural intentions in the airline, restaurant, technology and tourism sectors (Birgelen *et al.*, 2006; Chen and Tsai, 2007; Namkung and Jang, 2007; Bosque and Martin, 2008; Chen, 2008; Ladhari *et al.*, 2008). In highly competitive markets, customer satisfaction is a key driver of performance, making its measurement and management crucial (Matzler *et al.*, 2008). From the empirical perspectives, for example, a structural equation modelling analysis reveals that attendee evaluation of festival quality positively influences satisfaction with the festival and that satisfaction exerts a positive and direct influence on

awareness of quality. Further, festival quality appears not to directly affect behavioural intentions, whereas satisfaction and awareness have positive and direct relationships with intentions (Yuan and Jang, 2008).

On the other hand, it is noted that comfort, familiar environmental ambience and compatible environmental values are some of the issues that will enhance tourists' emotional satisfaction (Okello and Yerian, 2009). Bosque and Martin (2008) showed that tourism satisfaction consists of attitudes and prior beliefs, post-experience assessments and future behavioural intentions. However, the actual factors that enhance tourist joy include a relaxed, familiar and comfortable environment, which can be subtle and not obvious, and so this needs a strong appreciation of consumer behaviour and needs (Decrop, 1999). These notions connote the importance of service quality and the relationship between service quality and customer satisfaction. Basically, satisfaction can be defined as 'a judgement that a product, or service feature, or the product or

service itself, provides a pleasurable level of consumption-related fulfillment, including levels of under or over fulfillment' (Oliver, 1997). It has been recognized that tourism satisfaction level can be attributed to different destination attributes including tangible products and prices to intangible service quality (Lounsbury and Hoopes, 1985; Stevens, 1992; Crompton and Love, 1995; Qu and Li, 1997; Ryan, 1999; Yu and Goulden, 2006). Tourist satisfaction therefore encompasses all activities tourists participate in while staying at a destination, and their perceptions of service quality (Whipple and Thach, 1988; Murphy and Pritchard, 1997; Augustyn and Ho, 1998; Hsu, 2003; Yu and Goulden, 2006). Furthermore, as suggested by Hui *et al.* (2007), quality services and tourist satisfaction develop long-term relationship with tourists and in turn bring about destination loyalty. It is also elucidated by Campo and Yagüe (2008) that perceived quality is the primary antecedent of tourist loyalty to tour operator. In this sense, customers' attitudinal loyalty to a brand can be strengthened by their satisfaction with the brand (Li and Petrick, 2008). Therefore, providing high-quality service and ensuring customer satisfaction are widely recognized as important factors leading to the success of the tourism industries (Stevens *et al.*, 1995).

However important the concept of service quality has been, limited research has addressed the structure and antecedents of the concept (Wilkins *et al.*, 2006). Gronroos (1984) adapted the disconfirmation paradigm to the measurement of service quality, in addition to his proposition of a two-dimensional model to measure service quality. The first dimension, technical quality, referred to the outcome of the service performance. The second dimension, functional quality, was interpreted as the subjective perception of the way the service was delivered. More recently, Ko and Pastore (2005) developed a hierarchical model by adapting Brady and Cronin's (2001) and Dabholkar *et al.*'s (1996) models, using it in their study of service quality in the recreational sports industry. The model consisted of four primary dimensions, some of which have the following sub-dimensions: (i) interaction quality: client-employee interaction and inter-client interaction; (ii) environmental quality: ambient

condition, design and equipment; (iii) programme quality: operating time, information and range of activity programmes; and (iv) outcome quality: valence, physical change and sociability (Ko and Pastore, 2005, p. 91). In line with the aforementioned model, Shonk (2006, p. 21) applied a hierarchical model to the study of service quality for sports tourism industry. The model comprised four primary dimensions and a number of relevant sub-dimensions, namely: (i) access to the destination where the event occurred; (ii) the venue for the event; (iii) the accommodation during the stay; and (iv) the sport contest. As a consequence, these two models supported the multidimensional conceptualization of service quality in the recreational sports industry, and suggested that satisfaction with the event influenced the tourists' intentions to return to the event.

In terms of applying a hierarchical modelling approach to conceptualize service quality in a variety of different areas, a hierarchical model reflecting service quality perceptions in the health care industry was explored by Dagger *et al.* (2007, p. 131). The model encompassed four primary dimensions: interpersonal quality, technical quality, environment quality and administrative quality. To each aforementioned dimension, several sub-dimensions were attached respectively, namely: (1) interaction and relationship; (ii) outcome and expertise; (iii) atmosphere and tangibles; and (iv) timeliness, operation and support. The study applying the model concluded that satisfaction was typically modelled as mediating the link between service quality and behavioural intentions and that customers' overall perceptions of service quality continued to play an important role in generating customer outcomes (Dagger *et al.*, 2007). The study results were highly similar to those presented by Clemes *et al.* (2007), whose hierarchical model to reflect service quality perceptions in the higher education industry was developed. The hierarchical model of higher education service quality contained three primary dimensions: interaction quality, physical environment quality and outcome quality. Each primary dimension was made up of at least three sub-dimensions. For instance, interaction quality was composed of four sub-dimensions: academic staff, administration staff, academic staff availability and

course content. Physical environment quality comprised three sub-dimensions: library atmosphere, physical appeal and social factors. Outcome quality was composed of personal development, academic development and career opportunity (Clemes *et al.*, 2007, p. 310). The results of the empirical study reemphasized the application of a hierarchical factor structure, such as those developed by Clemes *et al.* (2007), Brady and Cronin (2001), and Dabholkar *et al.* (1996) to conceptualize and measure service quality.

More fundamentally, in the context of tourism industry, Caro and Roemer (2006) proposed an integrated model of service quality in an attempt to fill a gap in the literature on service quality. The model was developed in accordance with the hierarchy of perceptions as proposed by Brady and Cronin (2001). The model was made up of three primary dimensions, namely, personal interaction, physical environment and outcome, which were divided into seven sub-dimensions respectively: conduct, expertise, problem solving, equipment, ambient conditions, waiting time and value. In this regard, the conceptualization of a multidimensional service quality perception was established according to the results of their study.

To sum up, the issue of behavioural intentions has received considerable attention in different areas; however, there are few studies in the tourism field conducted to combine identifiable variables in relation to service quality and customer satisfaction into a model. Nonetheless, it is noted that by investigating the relationship between importance and satisfaction from the perspective of tourists, Truong and King (2009) examined a number of variables, including socio-demographics and travel characteristics, and compared the importance that travellers attach to various destination attributes with their associated satisfaction with the destination's various tourism products. In addition, Nowacki (2009) attempted to verify a model of relations between motivation, quality of product of attraction, benefits, satisfaction and behavioural intentions of visiting people. Mak *et al.* (2010) also examined the factors affecting the service quality of the tour guiding profession. In their research, the factors identified were classified into six categories:

unhealthy business practices, market domination, immaturity of tourist market, changing tourist behaviour, intense competition between inbound tour operators and human resource issues. The extant literature, in this regard, presents the relevant theories regarding the conceptualization of behavioural intentions and the related constructs, and provides the foundation for the development of the model in this study.

RESEARCH FRAMEWORK AND METHODOLOGY

Based on the aforementioned theoretical concept, a structured questionnaire was developed and distributed to determine the satisfaction and customer loyalty levels of the tourists to Kinmen National Park. The self-administered survey consisted of four sections. The first section comprised demographic variables to determine the demographics of the tourists, including elements of tourists' age, gender, education, personal income and occupation. The second section of the questionnaire was designed to determine the vacation behaviour and decision-making process of the tourists, including purposes of trip, times of visiting, duration of trip, information sources (Clawson and Knetsch, 1966; Cooper, 1993). Moreover, it is acknowledged that if performance is adequate, customers will be satisfied (Johnston, 1995) and that any increase in performance leads to an increase in perceptions of service quality and, conversely, any reduction in the level of performance will result in reduced perceptions of service quality (Johnston and Lyth, 1988; Gronroos, 1993). Therefore, the third section of the questionnaire was designed to determine tourists' satisfaction with the service quality of the Kinmen National Park on a five-point Likert-type scale ranging from 1 (very dissatisfied) to 5 (very satisfied). Lastly, as it is noted that customer loyalty is influenced by customer satisfaction (Bitner, 1990) and similarly customer satisfaction is a significant determinant of repeat sales and customer loyalty (Anderson and Sullivan, 1993; Liljander and Strandvik, 1995; Anderson, 1998), the need for further study on the link between overall satisfaction and customer loyalty is of great importance. The fourth section of the questionnaire

contains questions about tourists' future intention to visit and recommend the Kinmen National Park, based on the five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

In understanding the elements of service quality, a hierarchical model of behavioural intentions was developed to measure the determinants of service quality dimensions of the Kinmen National Park. Meanwhile, a research framework was thus developed to make a guideline of the research (see Figure 2). Then, a set of service quality dimensions specific to the National Park was identified based on the literature review, the focus group interviews and some destination resources of Kinmen elaborated by Chen and Henning, and Chen *et al.* (2004, 2009b, 2010). In the process of focus group interviews, the authors conducted three mini focus groups for this study. Each group comprised five participants including tourists, tour guides, local professors and government officials in charge of tourism or national park affairs. The group members were encouraged to list all of the factors that might encompass their perceptions of the service quality of national parks. Then, the authors summarized the discussion, drew inferences and categorized their opinions. More specifically, four primary dimensions were eventually identi-

fied, namely personal interaction, physical environment, technical quality and access quality. Furthermore, eight sub-dimensions pertaining to the primary dimensions were also identified, including personnel service, interpretation service, physical facilities, environment quality, recreational facilities, venue quality, convenience quality and information quality. Table 1 provides a summary of constructs and a synopsis of the items used in each construct operationalization.

In addition, the authors tried some practical data analysis techniques such as descriptive statistics analysis, multiple regression and one-way analysis of variance (ANOVA) for the assessment of attributes within tourists' satisfaction and willingness. Being explanatory and descriptive in nature, this study is mainly based on quantitative methodology to investigate the relationship between different constructs postulated in Figure 2. Due to time and human resource limitations, a convenience sampling method was chosen. Data collection used airport departure survey procedures (Kozak and Rimmington, 2000). The sample was taken in the departure lounge at Kinmen Airport from July to September in 2009. Tourists had just completed their visit to Kinmen National Park and their perceptions of the attractions, facilities and customer services were not obliterated out of mind. After distributing a total of 900 questionnaires over the 10-week period, 700 questionnaires were collected. There were 200 non-participants. Of the 700 returned questionnaires, 84 were incomplete with more than 10% of the questions unanswered. The usable and effective questionnaires for this study were 616, representing a response rate of 68%. The questionnaire was tested for reliability and generated good results, since the Cronbach's coefficient alpha scores as high as 0.969 (>0.60), as suggested by Churchill (1979).

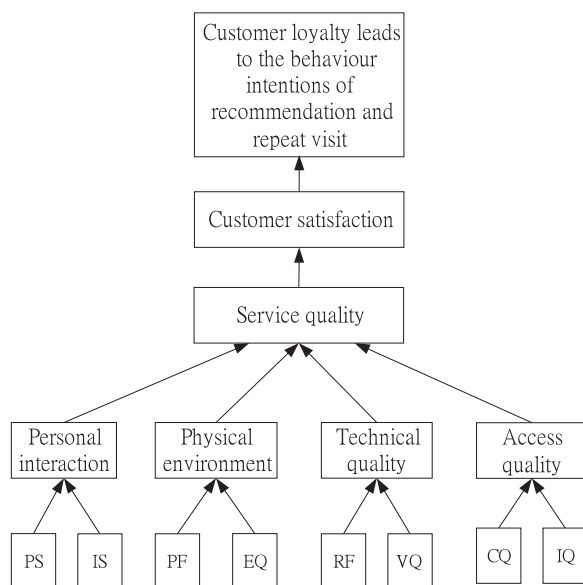


Figure 2. Hierarchical model of national park behavioural intentions — the main determinants.

RESULTS AND DISCUSSION

Respondent demographics

The usable questionnaires were evenly distributed to 616 respondents, representing 51% male and 49% female of the surveyed tourists respectively. Most of the visitors were in the

Table 1. Construct operationalization

Dimensions	Sub-dimensions	Description of items
Personal interaction	PS	Employees' attitude Employees' service behaviour Employees' problem-solving skills Employees' interaction with the tourists Inter-client interaction, sociability
	IS	Employees' knowledge of the park Employees' willingness, friendliness and understandability Auxiliary interpretation such as books, brochures and pamphlets.
Physical environment	PF	Layout of the park Equipment of the park Guide plate quality Facilities for the handicapped
	EQ	Park atmosphere Ambient conditions Attractions of the park Tourists' perceptions of the park environment quality
Technical quality	RF	Comfortable recreational facilities Secure recreational facilities
	VQ	Noticeable and accessible fire system Safety of tour Operating time Maintenance of the park
Access quality	CQ	Convenience of transportation and parking lots Convenience of food and beverage facilities Convenience and hygiene of restrooms
	IQ	Availability of information resources Range of activity programmes

PS, personnel service; IS, interpretation service; PF, physical facilities; EQ, environment quality; RF recreational facilities; VQ, venue quality; CQ, convenience quality; IQ, information quality.

age group of 21–30 years, representing 41.2% of the respondents. Respondents younger than 20 years of age were few, accounting for only 10.9% of the respondents. Most of the tourists' professional backgrounds included business (23.5%), academia (23.1%) and technicians (18.0%). In addition, the survey revealed that the education level of tourists to Kinmen National Park was relatively high, with 61.9% having earned college degrees and 7.6% graduate or doctoral degrees. Only 8.4% of respondents were either secondary school educated or below. With regard to personal annual income measured in NT\$ (New Taiwanese Dollars), the survey revealed that 40.3% of the visitors reported less than NT\$19999 and

17.2% indicated a monthly income between NT\$20000 and NT\$29999 (Table 2).

Trip characteristics and tourists' motivation

Tourists' trip characteristics and motivation are also summarized in the underlying tables. It is seen in Table 2 that 44.8% of the tourists visited Kinmen National Park for the first time, while 32.5% of the tourists visited the Park for four times and above. More than half of the tourists chose to stay in Kinmen National Park for 3 days and more, accounting for 68.3% of the respondents. It is interesting to note that the reasons for tourists to visit the National Park are mainly leisure, educational and VFR

Table 2. General information about tourists

Information sought	Responses	Frequency (<i>N</i> = 616)	%
Gender	Male	314	51
	Female	302	49
Age	20 years and under	67	10.9
	21–30 years	254	41.2
	31–40 years	101	16.4
	41 years and above	194	31.5
Educational background	Junior high and below	52	8.4
	High school	136	22.1
	Bachelor's	381	61.9
	Master's and PhD	47	7.6
Occupation of tourist	Technician	111	18.0
	Business	145	23.5
	Tourism service industry	94	15.3
	Government	92	14.9
	Academics	142	23.1
	Others	32	5.2
Monthly income	19999NT\$ and under	248	40.3
	20000NT\$~29999NT\$	106	17.2
	30000NT\$~39999NT\$	95	15.4
	40000NT\$~49999NT\$	70	11.4
	50000NT\$~59999NT\$	36	5.8
	60000NT\$~69999NT\$	26	4.2
	70000NT\$ and above	34	5.5
Times of visiting	Once	276	44.8
	Twice	95	15.4
	Thrice	45	7.3
	Four times and above	200	32.5
Length of stay	Half day	18	2.9
	1 day	32	5.2
	2 days	145	23.5
	3 days and above	421	68.3
Reason for visiting	Leisure	230	37.3
	Business	52	8.4
	Educational	151	24.5
	Visiting friends and relatives	130	21.1
	Combination	53	8.7
Information resources (multiple choices)	Books or magazines	115	18.7
	Newspaper	58	9.4
	Television	32	5.2
	Travel agency	150	24.4
	Internet	123	19.9
	Word of mouth	112	18.2
	Others	26	4.2

(visiting friends and relatives) respectively accounting for 37.3%, 24.5% and 21.7%. Information resources for tourists to learn about the National Park are, ranking in order, travel agency (24.4%), Internet (19.9%), books or magazines (18.7%) and word of mouth (18.2%).

Tourists' information and customer satisfaction

In order to understand the relationship between tourists' information and their satisfaction with the main determinants of the Kinmen

National Park, the authors employed one-way ANOVA to analyse the differences. As a result, there were no significant differences between customer satisfaction and tourists' information regarding age, monthly income, times of visiting and length of stay. However, there were significant differences between customer satisfaction and tourists' information with reference to their educational background and occupation. One-way ANOVA and post hoc analysis using the Scheffe test revealed that customers with bachelor's degree were more satisfied than those who had, ranking in order, high school, junior high and below, and master's and PhD degrees. With respect to tourists' information regarding occupation, the results showed that those who had occupations of academics, including the occupations of educator, student and researcher were more satisfied than businesspeople and the rest of occupations (see Table 3).

Multiple regression results relating to the main determinants

The regression model for analysing the relationship between customer satisfaction and the main determinants has been employed using customer satisfaction as dependent variable and four main determinants as independent variables. Four main determinants relating to dependent variables were identified as personal interaction, physical environment, technical quality and access quality. The results are presented in Table 4–7.

The first regression model takes personal interaction as the independent variable and tourist satisfaction as the dependent variable. The results were presented in Table 4. As a result, the standardized coefficient beta (β) was 0.650 ($p \leq 0.05$). Further, the *F* statistic of 449.534 was significant at 5% level of significance, revealing that the model helped to explain some of the variation in personal interaction. Besides, the adjusted coefficient of determination (Adjusted R^2) revealed that 42.2% of the variance in personal interaction was explained by the regression model. The *p*-values of the *t*-tests were less than the 5% level of significance, indicating that the beta coefficients were significant. Accordingly, the results signified a positive relationship between tourist satisfac-

tion and personal interaction, supporting the surmise in the research framework that higher satisfaction of each personal interaction sub-dimension positively affects personal interaction.

The second regression model takes physical environment as the independent variable and tourist satisfaction as the dependent variable. As a consequence, Table 5 illustrated that the standardized coefficient beta (β) was 0.566 ($p \leq 0.05$). Further, the *F* statistic of 287.775 was significant at 5% level of significance, revealing that the model helped to explain some of the variation in physical environment. Besides, the adjusted coefficient of determination (Adjusted R^2) revealed that 31.9% of the variance in physical environment was explained by the regression model. The *p*-values of the *t*-tests were less than the 5% level of significance, indicating that the beta coefficients were significant. Accordingly, the results signified a positive relationship between tourist satisfaction and physical environment, supporting the surmise in the research framework that higher satisfaction of each physical environment sub-dimension positively affects physical environment.

The third regression model takes technical quality as the independent variable and tourist satisfaction as the dependent variable. The results were presented in Table 6. As a result, the standardized coefficient beta (β) was 0.577 ($p \leq 0.05$). Further, the *F* statistic of 306.044 was significant at the 5% level of significance, revealing that the model helped to explain some of the variation in technical quality. Besides, the adjusted coefficient of determination (Adjusted R^2) revealed that 33.2% of the variance in technical quality was explained by the regression model. The *p*-values of the *t*-tests were less than the 5% level of significance, indicating that the beta coefficients were significant. Accordingly, the results signified a positive relationship between tourist satisfaction and technical quality, supporting the surmise in the research framework that higher satisfaction of each technical quality sub-dimension positively affects technical quality.

The fourth regression model takes access quality as the independent variable and tourist satisfaction as the dependent variable. The results of regression model revealed that there

Table 3. Relationship between tourists' information and customer satisfaction

Information sought		Variables	One-way ANOVA		Post hoc
			<i>f</i> -value	<i>p</i> -value	
Age	1. 20 years and under 2. 21–30 years 3. 31–40 years 4. 41 years and above	Interpretation service	1.455	0.226	
		Recreational facilities	2.019	0.110	
		Convenience quality	1.449	0.227	
		Environment quality	4.848	0.002	
		Physical facilities	4.599	0.003	
		Venue quality	2.103	0.099	
		Personnel service	5.351	0.001	
		Information quality	4.119	0.007	
Educational background	1. Junior high and below 2. High school 3. Bachelor's 4. Master's and PhD	Interpretation service	2.805	0.039	3 > 2 > 1 > 4
		Recreational facilities	2.150	0.093	
		Convenience quality	0.846	0.469	
		Environment quality	3.541	0.014	
		Physical facilities	5.158	0.002	
		Venue quality	4.564	0.004	
		Personnel service	8.172	0.000	
		Information quality	7.582	0.000	
Occupation of tourist	1. Technician 2. Business 3. Tourism service industry 4. Government 5. Academics 6. Others	Interpretation service	1.615	0.098	5 > 2 > 1,3,4,6
		Recreational facilities	1.001	0.441	
		Convenience quality	1.599	0.103	
		Environment quality	2.338	0.010	
		Physical facilities	2.794	0.002	
		Venue quality	2.129	0.021	
		Personnel service	2.924	0.001	
		Information quality	3.456	0.000	
Monthly income	1. 19999NT\$ and under 2. 20000NT\$~29999NT\$ 3. 30000NT\$~39999NT\$ 4. 40000NT\$~49999NT\$~ 5. 50000NT\$~59999NT\$ 6. 60000NT\$~69999NT\$ 7. 70000NT\$ and above	Interpretation service	1.160	0.324	
		Recreational facilities	0.952	0.466	
		Convenience quality	1.181	0.311	
		Environment quality	1.741	0.097	
		Physical facilities	2.359	0.022	
		Venue quality	0.780	0.604	
		Personnel service	1.461	0.178	
		Information quality	2.624	0.011	
Times of visiting	1. Once 2. Twice 3. Thrice 4. Four times and above	Interpretation service	2.004	0.112	
		Recreational facilities	2.290	0.077	
		Convenience quality	1.515	0.209	
		Environment quality	1.810	0.144	
		Physical facilities	3.776	0.011	
		Venue quality	2.897	0.035	
		Personnel service	2.756	0.042	
		Information quality	4.919	0.002	
Length of stay	1. Half day 2. 1 day 3. 2 days 4. 3 days and above	Interpretation service	2.417	0.065	
		Recreational facilities	2.477	0.060	
		Convenience quality	1.172	0.320	
		Environment quality	1.263	0.286	
		Physical facilities	2.813	0.039	
		Venue quality	2.571	0.053	
		Personnel service	5.710	0.001	
		Information quality	4.381	0.005	

Table 4. Multiple regression results relating to personal interaction

Model one	Unstandardized		Standardized coefficient beta	<i>t</i> -value	<i>p</i> -value
	Coefficient beta	Std. error			
Satisfaction (Constant)	1.247	0.129	—	9.676	0.05
Personal interaction	0.655	0.031	0.650	21.202	0.05
<i>R</i> ² /Adjusted <i>R</i> ²	0.423/0.422				
<i>F</i> /Sig.	449.534/0.05*				

**p* ≤ 0.05.

Table 5. Multiple regression results relating to physical environment

Model two	Unstandardized		Standardized coefficient beta	<i>t</i> -value	<i>p</i> -value
	Coefficient beta	Std. error			
Satisfaction (Constant)	2.070	0.120	—	17.220	0.05
Physical environment	0.501	0.029	0.566	16.993	0.05
<i>R</i> ² /Adjusted <i>R</i> ²	0.320/0.319				
<i>F</i> /Sig.	287.775/0.05*				

**p* ≤ 0.05.

Table 6. Multiple regression results relating to technical quality

Model three	Unstandardized		Standardized coefficient beta	<i>t</i> -value	<i>pp</i> -value
	Coefficient beta	Std. error			
Satisfaction (Constant)	1.439	0.143	—	10.092	0.05
Technical quality	0.605	0.035	0.577	17.494	0.05
<i>R</i> ² /Adjusted <i>R</i> ²	0.333/0.332				
<i>F</i> /Sig.	306.044/0.05*				

**p* ≤ 0.05.

Table 7. Multiple regression results relating to access quality

Model four	Unstandardized		Standardized coefficient beta	<i>t</i> -value	<i>p</i> -value
	Coefficient beta	Std. error			
Satisfaction (Constant)	2.333	0.118	—	19.737	0.05
Access quality	0.458	0.029	0.531	15.520	0.05
<i>R</i> ² /Adjusted <i>R</i> ²	0.282/0.281				
<i>F</i> /Sig.	240.883/0.05*				

**p* ≤ 0.05.

was a significant relationship pertaining to access quality. As shown in Table 7, the standardized coefficient beta (β) was 0.531 ($p \leq 0.05$). Further, the F statistic of 240.883 was significant at the 5% level of significance, revealing that the model helped to explain some of the variation in access quality. Besides, the adjusted coefficient of determination (Adjusted R^2) revealed that 28.1% of the variance in access quality was explained by the regression model. The p -values of the t -tests were less than the 5% level of significance, indicating that the beta coefficients were significant. Accordingly, the results signified a positive relationship between tourist satisfaction and access quality, supporting the surmise in the research framework that higher satisfaction of each access quality sub-dimension positively affects access quality.

Customer satisfaction and loyalty leads to intentions of recommendation and repeat visits

Customer satisfaction is essential to corporate survival (Pizam and Ellis, 1999), and has generally been found to lead to positive behavioural intentions such as return, repurchase and purchase recommendation in many tourism and hospitality studies (Dube *et al.*, 1994; Bojanic, 1996). Furthermore, it has become increasingly recognized that satisfaction derived may be part of a longer term relationship with place and/or activity through theories of involvement (McIntyre, 1989) and repeat purchase or consumer loyalty (Chioveanu, 2008). Although the overlapping concepts of customer satisfaction and service quality are based upon the relationship between expectations and perceptions (Churchill and Surprenant, 1982), quality service performance and tourist satisfaction develop a long-term relationship with tourists and in turn bring about destination loyalty (Hui *et al.*, 2007). In this sense, providing high-quality service and ensuring customer satisfaction are widely recognized as important factors leading to the success of the tourism industries (Stevens *et al.*, 1995). Therefore, measuring customer satisfaction is an important task for tourism marketers to carry out as it is directly linked to repeat business (Wong and Law, 2003).

For a further understanding of tourist satisfaction and customer loyalty that leads to the intentions of recommendation and repeat visits, tourists' overall satisfaction and willingness to revisit and recommend the destination were explored. The values of mean and standard deviation were calculated. The measurement was based on the mean scores on a Likert scale from 1 to 5 (very dissatisfied to very satisfied, or strongly disagree to strongly agree) to assess the satisfaction or the willingness index of the respondents, and the survey results were presented in Table 8. As the result revealed, the respondents gave ratings in proportion as high as 80% approximately with respect to their overall satisfaction and willingness to revisit and recommend the Kinmen National Park. More fundamentally, tourists' overall satisfaction with the National Park totaled a majority of 81.1% ('very satisfied' plus 'satisfied') respondents (Mean = 4.13), and their willingness to revisit and to recommend the destination totaled about the same respectively representing 79.7% and 78.0% of the respondents (Mean = 4.15 respectively).

CONCLUSIONS AND IMPLICATIONS

The study adapted a model to gain an empirical understanding of behavioural intentions in relation to service quality and tourist satisfaction in the Taiwan national park sector, using Kinmen National Park as an example. As a consequence, the model proved to be useful for the Taiwan study as well as the national park research around the world. The literature review, the questionnaire survey and the statistical analyses provide support for the presence of a hierarchical model of national park behavioural intentions and for four main determinants relating to dependent variables identified as personal interaction, physical environment, technical quality and access quality. Furthermore, the study has identified the sub-dimensions for the service quality as perceived by tourists at Kinmen National Park, namely personnel service, interpretation service, physical facilities, environment quality, recreational facilities, venue quality, convenience quality and information quality.

Moreover, this research also provided a framework for understanding the

Table 8. Tourist overall satisfaction and willingness to recommending and revisiting Kinmen National Park

	Frequency	%	Mean	Std.
Overall satisfaction	—	—	4.13	0.73
Very satisfied	201	32.6		
Satisfied	299	48.5		
Neutral	110	17.9		
Dissatisfied	5	0.8		
Very dissatisfied	1	0.2		
Willingness to revisit	—	—	4.15	0.83
Strongly agree	238	38.6		
Agree	253	41.1		
Neutral	107	17.4		
Disagree	14	2.3		
Strongly disagree	4	0.6		
Willingness to recommend	—	—	4.15	0.82
Strongly agree	243	39.4		
Agree	238	38.6		
Neutral	124	20.1		
Disagree	8	1.3		
Strongly disagree	3	0.5		

interrelationships between tourist behavioural intentions and the other constructs in relation to behavioural intentions. Apparently, this research adds empirical support to this vein of literature and has tested and verified the four main determinants and the sub-dimensions as important constructs for service quality in national parks. In the study, the survey results illustrated a positive relationship between tourist satisfaction and the four main determinants of service quality supporting the conceptual model of the research that service quality positively affects higher satisfaction. The positive relationship that was identified between personal interaction and tourist satisfaction may be interpreted as the higher the personal interaction, as perceived by the tourists, the more satisfied the tourists. The same results may also refer to the other three determinants that the higher the physical environment (technical quality, access quality), as perceived by the tourists, the more satisfied the tourists. All these findings may result in an interpretation that service quality acts as an antecedent of customer satisfaction. Furthermore, the results of the study are consistent with the notion that high-quality services will naturally increase the quality of the trip, which will lead to high

tourist satisfaction, as suggested by Chen and Tsai (2007).

The constructs in this study were also assessed based on the perceptions of the demographic groups. First, the results revealed that tourists with bachelor's degree were more satisfied than the rest of respondents. Second, the results showed that the occupation group also had perceptual differences. In particular, tourists working as educators, students and researchers had higher indices of satisfaction than business-people and the rest of others. The results imply that different educational levels and occupational types of tourists may demand different levels of service quality and may have different post-visit assessment of whether the service quality outcome is acceptable or unacceptable.

In addition, the results of the study also found that general satisfaction levels were high, and tourist loyalty and future intentions by recommending or repeat visits were accordingly rather high. The positive relationship between tourist satisfaction and intentions to recommend and to revisit may be interpreted as satisfied customers having favourable behavioural intentions to revisit or return to the same destination after having experienced high service quality, hence producing customer

loyalty. It can be concluded therefore that satisfaction has positive and direct relationships with intentions of recommendation and repeat revisits.

It is worth noting that tourist perceptions of service quality and satisfactions are important constructs in a framework of analysis towards tourist intentions combining elements such as expectation and consumption experiences, as exemplified by a number of researchers (Engel *et al.*, 1993; Spreng *et al.*, 1996; Chen and Tsai, 2007; Bosque and Martin, 2008). Although different researchers have included different variables of service quality in their studies, this study specifically placed tourist perceptions of service quality (access quality, technical quality, physical environment and personal interaction) under indicators that affect the satisfaction of a national park. It can be concluded, according to the survey results, that measuring factors such as service quality, satisfaction and customer loyalty from different angles is an important task to further establish tourist awareness and image for national parks. This concept reconfirms the extant literature that tourist perceptions and satisfaction may result in destination loyalty that leads to the success of the tourism industries, as it is directly linked to sustainable business.

From managerial perspectives, although some studies argued that there was no direct relationship between tourist satisfaction and most attractions, facilities and services (Okello and Yerian, 2009), customer satisfaction depends on service quality and high levels of quality, if customers believe that perceived value is being enhanced (Caruana *et al.*, 2000). The results of the study, consistent with the notion of Dagger *et al.* (2007), can be attributed to one fact that managers should consider both the service quality and customer satisfaction constructs as determinants of behavioural intentions. In light of the results, national park managers have to satisfy the tourists with a high level of service quality because service quality may have a significant influence on long-term behavioural intentions through high levels of customer satisfaction.

However, even if intuitively high levels of customer satisfaction should lead to higher levels of customer retention, simply having satisfied customers is not enough (Hui *et al.*,

2007). Customer loyalty can not be ignored. As tourists who have enjoyed better than expected experiences are more likely to return in the future (Ross, 1993), it is vital for national park managers to gain a competitive advantage over regional or international competitors through improving customer impressions to develop destination branding image. In recent years, the authorities involved have been endeavouring to promote Kinmen National Park to the international community focusing on culture and heritage development (Chen and Henning, 2004). It is suggested that consumer indifference may result in a situation where customers are satisfied (Solomon, 2002), highlighting the need to adopt innovative approaches to the management of tourist attractions and provide different interpretations for different visitors. Therefore, the tourism planning of Kinmen National Park requires market segmentation and more integrated resources strategies in its tourism development for a more competitive and sustainable position. For example, the managerial sectors may consider more strategies to enhance the interests of the tourists with low indices of satisfaction, such as the businesspeople and those who have master's or PhD degrees.

It is argued that a formative measurement based on multiple regression analysis examines only how dimensions of service quality influence the service quality construct (Diamantopoulos and Winklhofer, 2001). Further, the primary dimensions and sub-dimensions should be identified using an appropriate qualitative and quantitative analysis regarding service quality and satisfaction because they may also vary across industries and cultures (Clemes *et al.*, 2007). Although this study adds a number of important concepts to the extant literature and provides important contributions for national parks management, it is suggested that future research may be directed at adopting a reflective measurement using a structural equation model or different methodology combining a qualitative one.

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