

Examining Visitors' Behavioral Intentions and Behaviors in a Taiwan National Park

Chieh-Lu Li and Garry E. Chick

Abstract—In 2007-2008, some visitors to Taroko National Park in Taiwan were surveyed to allow testing of a behavioral prediction model in the context of national park recreation. This model includes three constructs: values (a cultural anthropology factor), perceptions of service quality (service marketing factors), and perceptions of crowding (a national park recreation factor). We obtained a sample of 1,080 visitors. Multiple regression analysis was used to test the predictive power of values dimensions, service quality dimensions and a crowding index on behavioral intentions and behaviors. From the behavioral intentions testing, the model was significant at the 0.001 level, and the model R-square equaled 0.50. Findings were consistent with previous research. For the behavior testing, in contrast, the R-squares of multiple regression models were between 0.029 to 0.036. We concluded that the weak practical significance of the findings of behavior testing may be explained as a validity problem with self-reported data. The actual behaviors questions (e.g., how many times and days respondents visited national parks) that researchers normally used to solicit respondents' memories in questionnaires may be invalid.

Introduction

Visitors to national parks are not homogenous. Different visitors have different intentions and engage in different behaviors. The factors affecting visitor behavior are multi-dimensional, and visitor behavior can be influenced by factors such as perceptions of service quality. For example, visitor dissatisfaction with visits to a destination may be because of a lack of facility quality, service, or information about

that destination. As a result, visitors may not visit the same destination on future trips. Visitors may also communicate their dissatisfaction to friends and relatives and discourage them from future visits (Reisinger 2009). Similarly, diverse visitors have diverse values and these values can be considered as one explanatory independent variable influencing visitors' behavior (Chick 2009). For example, if visitors have a more hedonistic set of values, their core values tend to be positive for excitement, fun, or enjoyment and they might tend to take outdoor recreation trips including places such as national parks. In addition, national parks provide a sort of low density and dispersed recreation and tourism opportunity. Evidence shows that perceptions of crowding are one of the determinants of behavior for visitors to national parks. Therefore, understanding how factors such as service quality, values, and crowding affect visitors' behavior is important as managers must provide quality services to meet the needs of their diverse clientele (Li and others 2007b).

In this study, we proposed a theoretical model comprised of three constructs: values as a cultural factor, perceptions of service quality as service marketing factors, and perceptions of crowding as a national park recreation factor (Li 2009). We then used these three constructs to predict behavioral intentions and behavior. Previous research (e.g., Li and others 2007a) has shown interrelationships among these constructs. However, detailed relationships, such as dimension to dimension relationships among the constructs, remain unknown (Li and others 2008). Therefore, the purposes of this study are twofold: (1) to examine the predictive power of service quality, values, and crowding dimension/index with respect to visitors' behavioral intentions; and (2) to use the same aforementioned independent variables to predict visitor behavior in a Taiwanese national park context.

Methods

Visitors to Taroko National Park in Taiwan were surveyed in 2007-2008. Taroko National Park is a mountainous national park located on the eastern coast of Taiwan, covering an area of 920 km² and providing opportunities for outdoor recreation and enjoyment to both local residents and international visitors. We used a convenience on-site sampling approach at sites known to be heavily used by visitors. Overall, we obtained a sample of 1,080 subjects. In the questionnaire, we employed a Likert response scale and included five constructs: values, service quality, crowding perceptions, behavioral intentions, and behavior.

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Independent Variables

The List of Values (LOV) developed by Kahle (1983) was adopted to measure possible values differences on a nine-point response scale. LOV includes 9 items, is parsimonious in its approach and easy to administer. Cronbach's alphas of the four dimensions (harmony, respect, achievement, and hedonism) ranged from 0.75 to 0.92, and the composite reliability of the four dimensions was 0.83. To measure service quality, 21 service quality items developed by Burns and associates (2003) were customized to fit the situation of Taiwan and measured on a five-point response scale. The four service quality dimensions including facility, service, information, and management were relatively reliable across different outdoor recreation settings. Our previous research demonstrated that the four service quality dimensions tend to be stable across studies but the items within the dimensions need to be adjusted to fit the specific study. The Cronbach's alphas of the four dimensions ranged from 0.63 to 0.87, and the composite reliability of the four dimensions was 0.85. Three crowding variables formatted on a nine-point scale were used for direct comparison of perceptions about crowding conditions across studies, areas, and time (Manning 1999). The Cronbach's alpha value of the three crowding items was 0.95 (table 1).

Dependent Variables

Five items were used to operationalize behavioral intentions, including passive, active, private, and self recommendations on a five-point scale (Zeithaml and others 1996). The Cronbach's alpha value of the five items was 0.80. To operationalize visitors' behavior, two indices were created, combining on-site (i.e., how many times/days respondents visited Taroko National Park) and general (i.e., how many times/days respondents visited other outdoor recreation areas similar to Taroko National Park) participation rates. The average number of visits per year was 8 and the total recreation days spent at Taroko was 14 days in a year (table 2).

Results and Discussion

With confidence in the reliability of instruments, we further tested for relationships among the hypothesized constructs. Multiple regression analysis suggested that the combined effects of the LOV, service quality, and crowding dimensions/indices significantly predict behavioral intentions with a model R-square of 0.50 (table 3). The findings showed strong practical significance of the model and are consistent with our former research elsewhere. The results indicated that

Table 1—Mean, standard deviation and reliability alpha of service quality, values, crowding and behavioral intentions.

Construct/dimension	Mean	Standard deviation	Alpha	Composite alpha
Service quality ^a	3.60	0.62		0.85
Facility	3.73	0.58	0.86	
Service	3.53	0.72	0.87	
Information	3.66	0.78	0.83	
Management	3.50	0.83	0.63	
Values ^b	6.92	1.44		0.83
Respect	7.08	1.69	0.88	
Harmony	7.24	1.44	0.85	
Achievement	6.86	1.67	0.75	
Hedonism	6.56	2.13	0.92	
Crowding ^c	3.90	2.34	0.95	
Behavioral Intentions ^a	3.82	0.83	0.80	

Table 2—Mean and standard deviation of behavior measure.^a

Item	Item mean	Item standard deviation
Total recreation visits during last 12 months	7.9	11.1
Total recreation days in a typical year	14.3	18.8

^a Items show the self-reported recreation visits and self-reported recreation days. Both total recreation visits and total recreation days combine on-site and general experience measures.

Table 3—Multiple regression model of values (respect, harmony, achievement, hedonism), service quality (facility, service, information, management) and crowding on behavioral intentions.

Dependent variables ^b	Behavioral intentions index ^a				
	Beta	P-value	Model F-value	Model P-value	Model R-square
Respect	0.078	0.023			
Harmony	-0.157	<0.001			
Achievement	0.163	<0.001			
Hedonism	0.392	<0.001			
Facility	0.026	0.389	111.11	<0.001	0.504
Service	0.136	<0.001			
Information	0.098	0.003			
Management	0.001	0.976			
Crowding	-0.132	<0.001			

^a Behavior intentions served as the independent variable.^b Same dimension/index measure as table 1.

visitor values tended to be more important than service quality in predicting visitors' behavioral intentions, according to the beta values in the model. Additionally, we found the hedonistic values dimension to be more important than the other three values dimensions. Therefore, we conclude that, in terms of a set of broad values measures to understand the patterns of visitors' behavioral intentions, values such as "fun and enjoyment" and "excitement" were key variables in explaining visitors' behavioral intentions in their national park visits.

Second, the results from two multiple regression models predicting behavior revealed that the models were significant but accounted for little of the variance, with model R-square equaling 0.036 and 0.029 for the total reported recreation visits model and total reported recreation days model, respectively (tables 4 and 5). The behavior model R-squares showed

discrepancy with the result from the behavioral intentions model and appear to be of little practical significance. This finding needs further investigation. However, we argue that the weak practical significance of the behavior model may be because of the inaccuracy of self-reported participation rates (Kaikati and Torelli 2009).

A substantial amount of research has demonstrated that memory may distort reality, changing the details of actual experiences (Braun-LaTour and others 2006). Research has shown that post-event suggestion can contaminate what a person remembers. Moreover, suggestion can lead to inaccurate memories being injected outright into the minds of people (Loftus 2003). For instance, Chase and Godbey (1983) concluded that more than 75% of the respondents in a study of participation at a swimming club overestimated their frequency of participation. Thus, we might expect that

Table 4—Multiple regression model of values (respect, harmony, achievement, hedonism), service quality (facility, service, information, management) and crowding on behavior (total recreation visits).

Dependent variables ^b	Behavioral (total recreation visits) ^a				
	Beta	P-value	Model F-value	Model P-value	Model R-square
Respect	0.101	0.041			
Harmony	-0.151	0.002			
Achievement	0.085	0.128			
Hedonism	0.093	0.057			
Facility	0.084	0.051	3.793	<0.001	0.036
Service	0.005	0.912			
Information	-0.022	0.636			
Management	-0.045	0.308			
Crowding	0.025	0.515			

^a Behavior (total recreation visits) served as the independent variable.^b Same dimension/index measure as table 1.

Table 5—Multiple regression model of values (respect, harmony, achievement, hedonism), service quality (facility, service, information, management) and crowding on behavior (total recreation days).

Dependent variables ^b	Behavioral (total recreation days) ^a				
	Beta	P-value	Model F-value	Model P-value	Model R-square
Respect	0.063	0.212			
Harmony	-0.104	0.034			
Achievement	0.102	0.071			
Hedonism	0.107	0.031			
Facility	0.006	0.887	3.009	0.002	0.029
Service	0.014	0.760			
Information	0.002	0.961			
Management	-0.046	0.313			
Crowding	0.058	0.137			

^a Behavior (total recreation days) served as the independent variable.

^b Same dimension/index measure as table 1.

memory biases such as self-reported information would affect the transmission of information, since such a process relies on each person remembering a fact accurately (Bernard and Killworth 1984). In our study, the accuracy of participation rates derived from self-reported surveys is unknown. Without further knowledge of the accuracy of respondent recall, the utility of participation data is suspect. A more complete understanding of the validity and usefulness of self-reported data in operationalizing actual behavior will require additional research, comparing objective measures of behavior with recall data, with multiple national park recreation populations. This line of research warrants future attention.

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