

# COMPARISON OF RESIDENT AND TOURIST PREFERENCES FOR PUBLIC BEACH ACCESS

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## Introduction

As coastal destinations continue to grow, due to tourism and residential expansion, the demand for public beach access and related amenities will also increase. As a result, agencies that provide beach access and related amenities face challenges when considering both residents and visitors use beaches and likely possess different needs, as well as different preferences for management decisions. Being a resident of a coastal county provides more opportunity to use local beaches, but coastal tourism is an important and growing economic engine in coastal communities (Kriesel, Landry, & Keeler, 2005; Pogue & Lee, 1999). Therefore, providing agencies with a comprehensive assessment of the differences between these two groups will increase the likelihood of effective management programs and policies for the provision of public beach access and related amenities. The purpose of this paper was to use a stated preference choice method (SPCM) to identify the extent of both residents' and visitors' preferences for public beach management options.

## Methods

The SPCM approach is a multi-dimensional technique used to simultaneously examine trade-offs related to the attributes (Oh & Ditton, 2006). SPCM begins with identifying important attributes and respective levels for each. For this study, five attributes were identified: (1) the number of beach access points (Beach Access); (2) cost of parking fees (Parking Fees); (3) the crowding and noise level experiences on the beach (Crowding and Noise); (4) level of commercial development (Commercial Development); and (5) level of restrictions on beach use (Rules and Regulations). The five attributes and respective levels are displayed in Table 1. A fractional factorial design was employed to establish thirty paired choice sets that were divided into five blocks, resulting in each respondent being asked to respond to six paired choice sets. Each paired choice set provided two trip options with one or more differences, as well as a no trip option to simulate real market choice behavior.

Table 1. Attributes and Levels Used for SPCM

Attribute	Description	Levels
Access Points	The number of beach access points available	1. No main beach access points 2. 1 main beach access point 3. 2 main beach access points
Parking Fees	Cost of user/parking fees (assessed per vehicle/per day)	1. \$5 2. \$10 3. \$15 4. \$20
Crowding and Noise Levels	The crowding and noise level that a visitors experience on the beach	1. Sparsely crowded and quiet 2. Moderately crowded and somewhat noisy 3. Highly crowded and very noisy
Development	Level of commercial development (hotels, restaurants, shopping and attractions) along the beach.	1. Not developed 2. Moderately developed 3. Highly developed
Rules/Regulations	Level of restrictions on the beach use	1. No restrictions (e.g., pets, alcohol, vehicles and

(e.g., pets, alcohol, vehicle and fishing restrictions)	fishing allowed on beach 2. Moderate restrictions (e.g., No vehicles and no fishing, but pets allowed on leashes, alcohol allowed (no glass)) 3. High restrictions (e.g., no pets, no alcohol, no vehicles and no fishing allowed on the beach)
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The SPCM is derived based on two well-grounded theories of utility maximization and random utility theory (Louviere, 2001). While utility maximization theory indicates that individuals make choices that lead to the highest utility (i.e., satisfaction), utilities, according to random utility theory, are comprised of a deterministic component and a random error component due to uncertainty factors. However, because of this random error component, utility is not observed directly and, thus, the probability of choice results should be used instead. Assuming the error terms are a type I extreme-value distributed, the probability specification can result in the condition logit model (Ben-Akiva & Lerman, 1985).

## Results

A total of 378 tourists and 682 residents responded to the mail survey. Once respondents without responses were deleted, there were 3,986 paired choice set observations for analysis. The parameter estimates of the conditional logit models are presented (Table 2). McFadden's  $\rho^2$ , which is a goodness-of-fit measure, indicated the resident model at 0.33 was a better fit than the tourist model at 0.18 (Table 2). An alternative specific constant (ASC) was added to measure utility shift of the "no trip" option compared to the taking a beach trip. Almost all effects of the primary attributes were statistically significant. Most attributes had expected signs, except "Moderately Developed" and "Moderate Restrictions" in both models. Positive ASC coefficients indicated that both tourists and residents favored taking a beach trip, as opposed to the no trip alternative.

Table 2. Results of Conditional Logit Models Comparing Tourists and Residents

	Tourists		Residents	
	Coefficient (Std. Err)	Implicit Prices	Coefficient (Std. Err)	Implicit Prices
ASC	2.192* (.35)		1.173* (.34)	
Access				
Access1	0.815* (.10)	8.23	0.661* (.08)	7.05
Access2	0.995* (.10)	10.05	0.793* (.08)	8.45
Parking Fees	-0.099* (.02)		-0.094* (.02)	
Crowding and Noise				
Moderately	-0.647* (.09)	-6.53	-0.701* (.07)	-7.47
Highly	-2.018* (.10)	-20.39	-2.32* (.09)	-24.70
Commercial				
Development				
Moderately	0.433* (.09)	4.37	0.045 (.08)	0.48
Highly	-0.057 (.09)	-0.57	-0.831* (.07)	-8.86
Rules/Regulations				
Moderate	0.259* (.09)	2.61	0.426* (.07)	4.54
High	-0.513* (.09)	-5.18	-0.071 (.07)	-0.76
Age*asc	-0.025* (.00)		-0.009* (.00)	
Income*asc	-0.050* (.03)		0.028 (.03)	
Edu*asc	0.164* (.06)		0.157* (.05)	
Income*fee	0.005* (.00)		0.001 (.00)	
Log Likelihood	-1963.5		-2932.76	
McFadden $\rho^2$	0.176		0.328	

\*Indicates statistically significant at the 0- .05 level

A scenario analysis was used to examine utility gain or loss as a result of changes in the levels of the five attributes (Table 3). Scenario 1 was the baseline option or status quo. Scenarios 2 through 5 increased the levels of the five attributes included in the study.

Table 3. Five Proposed Scenarios

	Main Access Points	Parking Fees	Crowding & Noise	Commercial Development	Rules/Regulations
S.1	No	0	Sparsely	Not	No
S.2	One	5	Moderately	Moderately	No
S.3	One	5	Moderately	Moderately	Medium
S.4	Two	5	Moderately	Moderately	Medium
S.5	Two	10	Moderately	Highly	High

To examine the degree of preferences for each scenario, the predicted probabilities and willingness to pay (WTP) were calculated (Table 4). Tourists most preferred Scenario 4 with a predicted probability of 31.9% and WTP of \$7.24, which included the addition of two main access points, moderate crowding and noise, moderate development, and medium restrictions. Tourists least preferred Scenario 5 with a probability of 7.8% and WTP of -\$8.75. Although two additional access points were favorable, the \$10 parking fee, high level of commercial development, and high level of restrictions were likely detrimental. Compared to Scenario 1 (i.e., status quo), tourists preferred certain degrees of site development and management intervention.

Residents also most preferred Scenario 4 with a probability of 29.0% and WTP of \$1.48. Similar to tourists, residents least preferred Scenario 5 with a probability of 5.0% and WTP of -\$17.68. However, the pattern for preferences for residents was not apparent as the probability for Scenario 1 (i.e., status quo) was 24.0%. In general tourists preferred visiting beaches with a certain degree of development and management intervention while residents appeared more interested in the status quo situation.

Table 4. Predicted Probabilities and WTP of Five Proposed Scenarios

	Tourists		Residents	
	(%)	(\$)	(%)	(\$)
S.1	13.2	0.00	24.0	0.00
S.2	20.5	2.81	16.6	-4.46
S.3	26.6	5.42	25.4	0.08
S.4	31.9	7.24	29.0	1.48
S.5	7.8	-8.75	5.0	-17.68

## Discussion

A better understanding of the multidimensional aspects of beach trip demand is critical for beach management agencies to consider their possible actions or alternatives. The purpose of this paper was to provide a better understanding of tourists' and residents' preferences for various management attributes upon determining their beach destinations by asking respondents to make tradeoffs among the beach destination attributes and their willingness to pay for combinations of choice attributes.

The results generally corresponded with *a priori* expectations: tourists showed a higher preference for beach destinations with certain degrees of site development and management interventions but residents were less interested in these options. This idea was also supported by the scenario analysis. Tourists and residents most preferred Scenario 4, consisting of two additional beach access points and moderate crowding and noise and a moderate level of commercial development at a site as well as moderate restrictions of rules and regulations.

In conclusion, management agencies responsible for providing and maintaining public beach access can benefit from comprehensive assessment of the preferences of all user groups. Communities with high levels of beach use by tourists and residents can use this information to help identify and implement programs and policies that will contribute to satisfying expectations and needs of both groups.

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