Beach Quality and Recreational Values: A Pictorialized Stated Preference Analysis of Residents and Tourists

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Abstract: Much of Hawaii's economy relies on its unique marine environments, which are threatened by degradation from stormwater runoff. Using a stated preference method of choice-based conjoint (CBC) analysis, based on stylized photographs, this study examines both residents' and visitors' marginal value for levels of attributes associated with Hawaiian beach recreation. Each attribute (sand quality, water quality, congestion and water safety conditions) was significant for both residents and tourists, with water quality being the single most important attribute. There is little distinction between resident and tourist marginal value, except for a greater value lost for below average water quality among tourists.

Introduction

As the only tropical island state within the United States, Hawaii is unique in its culture and environment. Every year millions of people travel from both sides of the Pacific to enjoy its natural resources, making tourism the largest industry in Hawaii. In 2009, it accounted for 14.8% ($10 billion) of Gross State Product, 16% of total state employment and 19% ($924 million) of state tax revenues (Paki, 2010). Tourists' main motivation to visit Hawaii revolves around its world famous beaches and associated activities such as surfing, snorkeling, and scuba diving. However, Hawaii's pristine coasts are threatened by nonpoint source pollution, primarily from stormwater runoff.

Stormwater runoff can significantly decrease water quality by reducing color and clarity, increasing algae blooms that endanger marine wildlife, and temporarily increases the risk of waterborne illness such as gastroenteritis and infection (Dwight et al., 2005; Gaffield et al., 2003; Hawaii DBEDT, 2006; Rabinovici et al., 2004). Consequently, Hawaii authorities discourage beach use during times of peak pollution by issuing "Brown Water Advisories" after heavy storms. From 2005 to 2009, a total of 17,449 advisories due to stormwater pollution were issued, making up 96.8% of all water advisory events in Hawaii (Dorfman & Rosselot, 2010; Dorfman & Rosselot, 2009; Dorfman & Rosselot, 2008; Dorfman & Stoner, 2007; Stoner & Dorfman, 2006). Ultimately, this means that both residents and tourists lose value from lost opportunity to enjoy the beaches.

It is essential to ascertain the value tourists and residents place on varying quality of near-shore environments to adequately assess the potential economic loss caused by degraded recreational beach conditions. This research focuses on the valuation of beach attributes that most influence beach user experiences. Attributes such as water quality will be affected by the decisions of policymakers and stakeholders who can implement strategies to mitigate the risk of reduced color and clarity. To effectively capture the significance of these hypothetical changes in a beach quality attribute, we use a stated preference choice based conjoint within a larger survey. We also determine the corresponding resident and tourist Willingness to Pay (WTP). Beyond its immediate goal, this paper makes a number of contributions. We utilize a relatively new and innovative method in choice experimentation that conveys levels of attributes using altered pictures to describe differences. While as far as we are aware of, all other domestic research of beach valuation has come from the contiguous United States, this research focuses on Hawaii’s beach attributes. Further it is one of only a few studies to sample and compare both resident and tourist valuations in a stated preference setting for beach attributes with Oh, Draper, & Dixon (2010) being a notable exception.

Beach Valuation

Much of the early beach valuation research utilized Travel Cost methods (TCM) to value trips to US beaches and characteristics created by parks and recreation managers such as the presence of lifeguards, parking and restrooms. Recreational beach valuation was first considered by Bell & Leeworthy (1990), who found that tourists' value of a beach day in Florida was $34. Murray, Sohngen & Pendleton (2001) used TCM to estimate the value of reduced beach advisories among single-day beach visitors of Lake Erie. They found one less advisory would benefit potential beachgoers who used media to obtain advisory information prior to traveling by $24 per visitor per year. Those who learned of advisories on-site would gain $38 per visitor per year. Day visitors and overnight visitors to North Carolina beaches received benefits of $11-$80 and $11-$4 per day, respectively according to Bin et al. (2005). Lew and Larson (2005) examined residents' values of amenities of 31 individual San Diego County beaches. Man-made attributes like lifeguards, activity areas, and parking were all significant. All natural attributes such as sand quality and beach length were significant with the exception of water quality; the suspected reason for this exception was that 60% of beachgoers engaged in activities that did not involve water. Parsons & Kang (2009) surveyed Texas residents within 200 miles of Padre Island National Seashore to estimate economic losses from Seashore beach closures. Based on historical visitation rates, the greatest loss was $172,000 from closure on a weekend day in July while the least costly closure was during a weekday of September at $26,000. We expect that Oahu's residents and tourists find water quality significant at its beaches.

Reduced beach quality also has potential long-term economic consequences. There were concerns for beach advisories causing declines in visitors to Lake Eerie beaches (Jentes, 2000). In parts of Southern California where water quality had either improved or stayed the same in the preceding five years, 58% of the public said that ocean pollution had worsened, and was the most cited reason among beach visitors who did not get in the water (Pendleton, Martin, & Webster, 2000). If left unchecked, pollution could have a similar effect on Oahu's residents and visitors perceptions of the value provided by its beaches.

Recent research has utilized stated preference (SP) methods, which are most useful to understand users' opinions of prospective policy change. Oh, Dixon, Mjelde, & Draper (2008) surveyed out-of-state respondents in South Carolina's major beach recreation cities to assess the value of added beach access points and other beach attributes. Tourist WTP was $6.60 for additional beach access points and facilities, which multiplied by the number of visitors and trips to South Carolina, yielded an economic benefit of $92.7 million per year. Oh et al. (2010) valued attributes greatly influenced by beach managers and coastal communities including the number of beach access points, congestion control, degree of development, and other relevant regulations among tourists and residents. While Hawaii can benefit from information on congestion control and related regulations, Oahu is already heavily developed and cannot easily open additional beach access but must instead maintain the quality of the marine environments it currently has. These tropical characteristics are also important to the popularity of Hawaii and its tourism industry.

Attributes and Choice Experiment Design

Specific attribute selection was based on consultation with the Clean Water Branch, a division of Hawaii's Department of Health, Honolulu's Ocean Safety and Lifeguard Services, previous research including a review of the fifty diagnostic criteria for swimming beaches set forth by Stephen Leatherman, Ph.D., Director of the Laboratory for Coastal Research at Florida International University (Leatherman, 2010; Oh, Dixon, & Draper, 2006), and most importantly, on opinion expressed by focus group participants including both residents and tourists.

In particular, the selected attributes were water quality, sand quality, congestion, the swimming/safety conditions of the water, and round trip travel cost, yielding 720 possible permutations. More specific levels and descriptions can be seen in Table 1. Stylized photographs were utilized to depict most of the attributes except for round-trip travel cost and chance of illness due to water quality. Visual Portrayal improves the respondent's comprehension of information and the effectiveness of stated preference methods (Matthews, Freeman, & Desvousges, 2006, Bateman, Day, Jones, & Jude, 2009). See Figure 1 for an example of a choice experiment from the survey.

Much consideration was given to each of the attributes. Water quality contains aspects of both aesthetic values through color and clarity as well as the health risk status of the water. Water quality as a health hazard has been used previously and is well recognized by the public when authorities post warnings of increased risk of illness (Beharry-Borg & Scarpa, 2010; Machado & Mourato, 2002). Sand quality considered color and foreign material as a representation of multiple categories for Leatherman's (2010) beach criteria such as coarseness, material and obstructions like tar balls, glass or rubble. Congestion focused on beach crowdedness as a factor of noise and personal satisfaction; again incorporating multiple categories such as "Competition for free use of beach." "Noise," and "Intensity of Beach use" (Leatherman, 2010). We use swimming/safety conditions and round trip travel cost since they are better understood by a wider audience (Mourato et al., 2003). We also made another important adaptation to the price mechanism by using the round trip cost of gasoline to visit an Oahu beach. While user and parking fees have been widely used in past research (Beharry-Borg & Scarpa, 2010; Oh, Draper, & Dixon, 2009), round trip travel costs are less contentious to Hawaiian residents and tourists. Such “user-fees” for beaches are unpopular because beach access is free and seen as a right for everyone (Cole, 2008; Mak & Moncur, 1998). The levels of round trip travel cost reflect the longest driving distance possible on Oahu of roughly 49.7 miles with a fuel economy of 25 miles per gallon so as to be realistic costs to beachgoers. Further, previous beach valuation studies have used similar levels of round-trip travel costs (Oh, Draper, & Dixon, 2009) and costs based on mileage (Lew & Larson, 2005).

Data Collection and Survey Design

In order to understand values of beach attributes in Hawaii among tourists and residents, Computer Assisted Personal Interview (CAPI) intercept surveys were handled by a professional survey company from mid-September to mid-October of 2009. It was fielded to English-speaking US residents at least 18 years old in five separate locations of Oahu to adequately capture residents and tourists. Moderators randomly approached and inquired potential respondents to participate in the self-administered survey, that it was strictly for educational and environmental purposes, and that they would be offered a ten-dollar gift card in a well-known coffee shop chain as compensation for completing the survey. A total of 415 participants were identified as tourists. Of these, 355 (85.5%) met the criteria of being a recreational beach user to participate in the beach attribute choice experiments; 341 (82.2%) respondents completed in the conjoint analysis. A total of 408 respondents were identified as residents. Of these, 330 (80.9%) considered themselves recreational beach users and were all used in estimating the model.

Each survey questionnaire contained four sections that could be potentially seen by each respondent. The first section was a series of questions on preferences for beach attributes, amenities, and activities. The second section presented the ten beach attribute choice experiments. Both tourists and residents completed ten choice sets with three alternatives per choice set. After each choice set, a follow-up question asked the respondent if they would instead prefer to opt-out altogether from the alternative they selected. To be included in the Beach conjoint analysis, a respondent had to consider themselves a "Recreational Beach User", which is defined as visiting the beach with the intention to sunbathe and swim in the ocean for no less than a half hour. Finally, each survey concluded with questions specific to tourists or residents and socioeconomic questions.

Sample Results

The samples are fairly representative of their respective populations and can be seen in Table 3. By designating themselves as recreational beach users, 341 tourists were included in the analysis, and 317 completed demographic information. The sample is more well-educated and earns a higher income relative to the general population. This is expected since given Hawaii's remote location, traveling to Hawaii is likely more expensive than visiting other destinations closer to the tourists. Our sample intended to visit Oahu for a comparable length of time compared to historical records, with 53% of respondents intending to stay for 3 to 7 days and another 37% intending to stay more than one week.

Of the 330 resident recreational beach users used in the conjoint analysis, 301 of the respondents also completed socioeconomic information. On average residents were slightly younger and had lower household incomes than an average Hawaii household. Over 68% of residents reported that there were aware of the effects of stormwater pollution on coastal water quality, much higher than the 47.3% of aware tourists. Residents were also better educated.

Theoretical Framework

Respondent choices of beaches in the CBC experiment can be explained by Lancaster (1966). The theory dictates that the utility derived from a good or service is determined by the separate utilities derived from attributes, rather than the good/service itself, that make up the sum of total utility. The respondent selects the most preferred alternative of those presented. With respect to CBC analysis, choosing the utility maximizing option in each choice experiment follows random utility modeling (RUM). An individual, *i* must evaluate the utility associated with *j=1, 2,…, J* alternatives in the t-th choice set, which can be represented by U_{ijt} . We expect that within a given choice set individuals select the beach alternative that maximizes utility. Utility is an independent, random variable that can be separated into the given level of characteristics represented by vector X_{ijt}, the unknown parameter vector β**,** and the random component e_{jt} (McFadden, 1974).

$$U_{ijt} = X_{ijt}\beta + \varepsilon_{jt} \qquad (1)$$

In RUM, a respondent only selects a particular option if the associated utility (observable and unobservable) is greater than all other options offered in the choice experiment. It has been suggested that CBC analysis is a better tactic over other SP techniques when values of individual attributes is important (Bateman, 2002) rather than the total value of the environmental good or service. If random component of utility follows a Type I Extreme value (Gumbel) distribution, the probability of selecting an alternative follows a conditional logit model:

$$\mathrm{Prob}_{ijt} = \frac{\exp\ X_{ijt}*\beta}{{}_{k=1}^{J}\exp\ X_{ikt}*\beta} \qquad (2)$$

Direct interpretation of the parameter estimate is not feasible except for statistical significance and relative magnitude to other attributes. One can ascertain and interpret implicit values of the attributes included in the CBC as Willingness to Pay (WTP) estimates by dividing the environmental attribute $\beta_{Attribute}$ by the opposite of the marginal value of the price mechanism, in this case round-trip travel cost$\beta_{TravelCost}$. In this case, by interacting beach attributes with the residents/tourists indicator, one can test if tourist and resident preferences are significantly different. The marginal values of beach attributes can be calculated as:

$$\text{Marginal Beach Attribute Value} = -\frac{\beta_{\text{Attribute}} + \beta_{\text{D}}*\text{D}}{\beta_{\text{PTravel Cost}}} \qquad (3)$$

Even by including interaction terms, this does not resolve the potential of the unobservable components of utility (ε_{jt}) that dictate respondent choice. One can relax the assumption of Independence of Irrelevant Alternatives (IIA) and model individual unobservable utility using a Mixed Logit Mode (Train, 1998). While this flexibility is valuable, we remain with the conditional logit model since our central focus is on finding the mean-effects of attributes and comparison among tourists and residents, not the unobservable heterogeneity dictating decisions within each group, which may be an opportunity in future research.

In order to compare residents and tourists' differences in WTP, we utilize the Krinksy-Robb Procedure (1986) to create 95% Confidence Intervals. As mentioned before, p-values associated with different WTP among tourists and residents are calculated by combining the data sets and including additional interaction terms. This a simple measure to ascertain the same information as the test for equal WTP with a convolutions test, as put forth by Poe, Giraud, & Loomis (2005).

Model Results

To estimate the conditional logit model and the corresponding WTP values, Stata 10 was used. While there is ordinal value to each of the attributes, we choose indicators of the various levels to reflect the varying magnitude in its ability to predict respondent choice at each level, and the model output can be seen in Table 4.

Every level of each attribute was statistically significant for both tourists and residents including the price mechanism round trip travel cost and maintained the expected sign. At each level there was a clear separation of how the attribute affected the likelihood of choosing a specific alternative. Tourists and residents were both less likely to choose alternatives with below average sand quality, below average water quality, overcrowded beaches and unsafe conditions for entering the water. Likewise, tourists and residents were partial to good and excellent water quality, good and excellent sand quality, and less congestion. While not easily controlled by beach managers without large-scale engineering projects, water condition is a valuable characteristic to beach goers with preference for conditions that are safe for nearly everyone. Round trip travel cost had the expected sign; money is valuable and as cost of the alternative increases, the respondent was less likely to visit that beach.

Excellent Water Quality was the single greatest indicator of choosing a particular alternative, both as a determinant of increases and decreases in social welfare (excellent water and below average water quality, respectively). This is true for both residents and tourists. Furthermore, below average Water Quality was the second most important attribute in determining respondents' utility. This emphasizes that improving water quality as described in the choice experiment is the most important means to improve welfare of tourists and residents.

Using the results from Table 4 and equation (3), one can acquire the WTP for each attribute found in Table 5. Ninety five percent confidence intervals of these WTP measures were constructed by the Krinsky Robb (1986) approach based on 5,000 replications. Tourists and residents were both willing to pay roughly $46 to have excellent water quality compared to average quality. To test which attributes were significantly different between tourists and residents, a joint model that combined both groups' choice data was run (not shown). The model contained an interaction of each CBC attribute level (including the round trip cost) with a tourist indicator variable, yielding eleven additional interaction variables. Testing the significance of the interaction variables allows one to examine if being a tourist significantly affects the importance of the attribute. The p-values of these interaction variables are reported in Table 5. Significant values indicate difference between tourist and resident preferences for the corresponding attribute.

To more closely examine differences in WTP, we include Confidence Intervals that in many cases overlap for tourists and residents, but we instead rely on individual p-values reported in the last column of Table 5 to imply whether WTP are different across these two user groups. Below average sand quality and too much congestion were marginally significantly different in the two groups, but we can compare the WTP of tourists and residents. Relative to residents, tourists were willing to pay an additional $6 to avoid below average sand quality. The importance of over-congested beaches to residents did follow previous research, which states that locals were concerned with additional traffic, litter and overcrowding from tourist presence. Tourists were less negatively affected, converse of previous work that found tourists face a greater loss of utility from crowding relative to residents (Oh, Draper, & Dixon, 2010). The last statistically significant difference was the lost utility from below average water quality that tourists have compared to residents. It is possible that since tourists had invested much of their time and income to visit Hawaii, they had a greater expectation to see the pre-conceived and marketed version of Hawaii, rather than paying to see dirty water that did not look suitable for swimming.

After below average Water Quality, residents and tourists were willing to pay the most to avoid Unsafe Waters at $23.59 and $21.53, respectively. One may expect the residents' value lost to be lower, since they are presumably more experienced and more likely to be surfers than tourists, possibly considering bigger waves to be more enjoyable. However, residents may also have more recognition of dangerous water conditions than the average tourist.

An ideal day at the beach, with excellent sand and water, little congestion and ideal safety conditions, provides residents and tourists both roughly $78.5 of value. To avoid a terrible beach day, residents and tourists would be willing to pay $82.37 and $91.69, respectively. In reality, observing each characteristic simultaneously is unlikely. For example, crowding is likely to occur when beach and water conditions are ideal. A potential day at the beach can provide substantial utility for recreationists, information that may be invaluable in preserving Hawaii's near-shore environments.

Conclusion & Implications

Overall, recreational users are quite cognizant of the different characteristics when they go to the beach. Water Quality is the single most important attribute among residents and tourists and is the most vulnerable characteristic of stormwater pollution. Tourists lose significantly more utility from below water quality. Sand quality, congestion and water safety conditions were also significant in user decision of beach-going in the conjoint analysis. If one assumes that the results here apply to all of the Hawaiian Islands, this study provides broader meanings. Providing the value of Hawaii's unique environments equips managers with essential information to effectively maintain these areas and protect the state's tourism industry. In conjunction with historical information on advisories and warnings, historical information on visitor statistics to Hawaii can reveal the aggregate losses of economic value of Brown Water Advisories. The results can also value losses from individual beach closures that are likely to happen with impending storms.

Hawaiian authorities can somewhat control the risks of Brown Water Advisories by implementing policies to reduce pollution risks in times and locations that will prevent the most consumer surplus loss possible. Since tourists have shown that they are most affected by water quality conditions, it may be prudent for policy makers to reduce Brown Water Advisory risks when and where tourists are most abundant. For instance, the rainy season in Hawaii coincides with a historically busy winter season for Hawaii tourism. Using modern street sweepers during this period in predominately tourist or installing more stormwater infrastructure or catchments may be cost-effective measures to minimize the amount of untreated stormwater that reach the most heavily used beaches, reducing the length of or eliminating the Advisory.

Further study of beach environments and their characteristics could consider how tourists and residents prefer to respond to stormwater pollution. With estimates of the value of certain characteristics of beaches now available, understanding what policies are preferred the most by tourists and residents can allow for state resources to be implemented most effectively both from a cost and benefits perspective. Another consideration can be made to study the intensity of activities and how they affect WTP of certain groups. Beharry-Borg & Scarpa (2010) considered snorkelers versus non-snorkelers, but the idea can easily be extended to activities such as beach volleyball, surfing, or boating.

Hawaii and other islands that offer unique environments are better equipped with information on how beach users, local or visiting, value these environments. If coupled with benefit-Cost Analyses, managers can provide an optimal level of beach environments for everyone, and do so in a cost-effective manner.

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Table 1: Beach Attributes and levels

Attribute	Description
Water Quality[1]	4 (Excellent): A beach with clear, aqua-colored water and the probability of illness from wading occurs in 5 out of every 1000 healthy adults 3 (Good): A beach with water that has visible particles floating in otherwise clear water, blue in color; the probability of illness from wading occurs in 12 out of every 1000 healthy adults 2 (Average): A beach with cloudier water affecting visibility, green in color and the probability of illness from wading occurs in 19 out of every 1000 healthy adults 1 (Below Average): A beach with murky water, brownish in color and the probability of becoming ill from wading occurs in 25 out of every 1000 healthy adults
Sand Quality[2]	4 (Excellent): A white all sand beach 3 (Good): A light tan beach composed of 75% sand and 25% foreign material 2 (Average): A dark tan/light brown beach composed of 50% sand and 50% foreign material 1 (Below Average): A brown/gray beach composed of 75% foreign material and 25% sand
Congestion[2]	3 (Good): The beach has ample open space, and little noise 2 (Average): Beach congestion and noise are present but do not hinder user experience 1 (Below Average): The beach is overcrowded and extremely noisy
Water Entry /Swimming Safety[2]	3(Very Safe): Lifeguard deems conditions safe for the majority of beach recreationists 2:(Safe): Lifeguard deems conditions safe for experienced beach recreationists 1 (Not Safe): Lifeguard deems conditions not safe to enter for any recreationists
Round-trip cost of gasoline	$0, $5, $10, $15, and $20

[1]A combination of visual and written description
[2]Attributes were only seen as visual depictions within the choice experiments

Figure 1: An example of a Choice Experiment presented to respondents

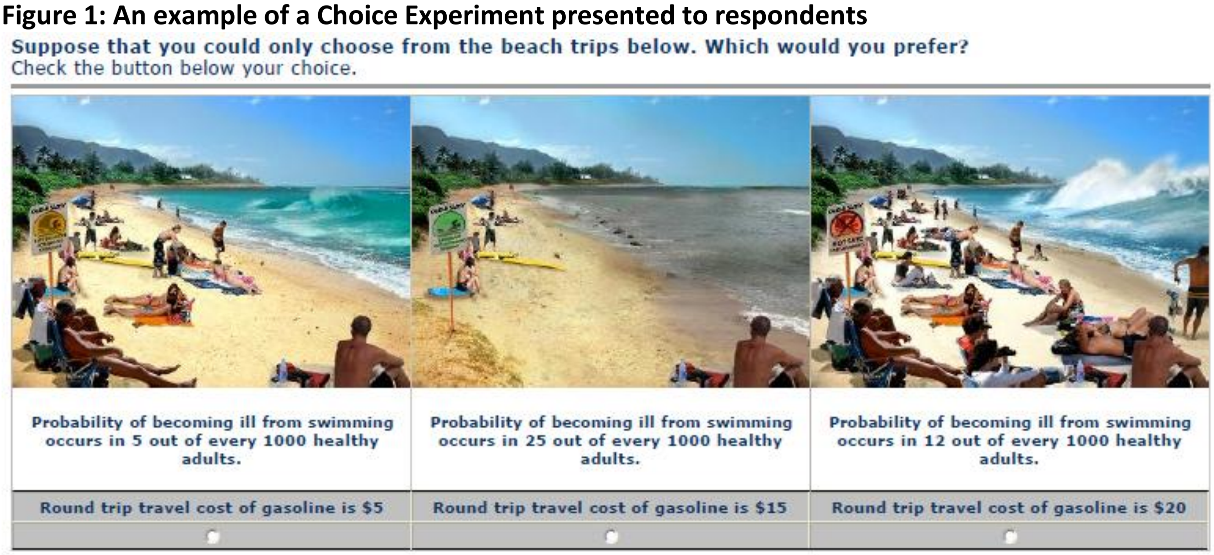

Table 2: Variable Definitions

Variable	Description
Length of Stay	(Tourists Only) 4 levels using midpoints from shortest to longest intended stay on Oahu: 1.5 days, 5 days, 11 days, & 17 days
Female	1, if female 0, if male
Age	5 levels using midpoints from youngest to oldest 21.5, 31.5, 40.5, 50.5, and 62.5 years old
Income	9 levels using midpoints from smallest to largest income $7500, $22500, $37500, $52500, $67500, $82500, $97500, $112500, and $135000
High School	1, if attained a High School Diploma or more
College or more	1,if attained a college degree (non-specific of 2 or 4 year degree) or more
Prior Knowledge	1, previously aware of stormwater pollution's effect on coastal water quality

Table 3: Sample Description

Variable	Resident Sample	Hawaii Average[1]	Tourist Sample	US Average[1]
High School or more (%)	91.7	89.5	96.8	84.6
Avg. Household Income ($)	58,171	64,661[2]	76,219	51,425[2]
Age	36.5	37.5[2]	38.8	36.5[2]
Female (%)	51.4	49.4	48.6	50.7
Avg. Stay on Oahu (Days)			7.93	9.88[3]
	N=301		N=317	

[1]Information is from the US Census Bureau's 2005-09 American Community Survey unless noted otherwise
[2]Median
[3]Information comes from the Hawaii Tourism Authority 2010 Annual Report, pg 19 (Paki, 2010)

Table 4: Conditional Logit Model of Beach Conjoint Attributes

	Residents		Tourists	
Attribute	**Coefficient**	**Std. Error**	**Coefficient**	**Std. Error**
Below Average Sand	-.3425*	.0687	-.5251*	.0695
Good Sand	.2432*	.0626	.1721*	.0601
Excellent Sand	.3804*	.0651	.3501*	.0638
Below Average Water	-.8001*	.0827	-1.1411*	.0899
Good Water	.4957*	.0632	.6154*	.0615
Excellent Water	1.2477*	.0633	1.3036*	.0613
Very Congested	-.4539*	.0585	-.2998*	.0565
Little Congestion	.2636*	.0502	.2226*	.0498
Unsafe Waters	-.6408*	.0593	-.6033*	.0581
Very Safe Waters	.2432*	.0479	.3229*	.0472
Round Trip Travel Cost	-.0272*	.0036	-.0280*	.0035
	N=330		N=341	
	Pseudo ρ^2=.2542		Pseudo ρ^2= .297	

***indicates a p-value<.01**

Note: The base category of each attribute is *Average* Quality

Table 5: Marginal Willingness to Pay for Beach Attributes (95% Krinsky-Robb Confidence Intervals)

Attribute	Resident WTP	(LB, UB)	Tourists WTP	(LB, UB)	p-value[1]
Below Average Sand	**-12.61**	**(-18.49,-6.73)**	**-18.74**	**(-26.92, -12.99)**	**.062**
Good Sand	8.95	(4.07, 13.84)	6.14	(2.07, 10.77)	.40
Excellent Sand	14.00	(8.09, 19.92)	12.49	(7.77, 18.73)	.736
Below Average Water	**-29.46**	**(-39.05,-19.87)**	**-40.72**	**(-55.53, -30.76)**	**.005**
Good Water	18.25	(11.79, 24.71)	21.96	(16.35, 29.98)	.177
Excellent Water	45.94	(33.58, 58.30)	46.52	(36.90, 61.38)	.535
Very Congested	**-16.71**	**(-22.71, -10.72)**	**-10.70**	**(-16.21, -6.37)**	**.057**
Little Congestion	9.70	(5.28, 14.13)	7.94	(4.26, 12.72)	.566
Unsafe Waters	-23.59	(-30.89, -16.30)	-21.53	(-29.65, -15.90)	.647
Very Safe Waters	8.95	(4.85, 13.06)	11.52	(7.71, 16.48)	.237
	n=9735		**n=10230**		**n=19965**

[1]These p-values are from a combined dataset that has additional interaction terms of tourist and the levels of each attribute