

## **Tourists' willingness to pay for entry to the Annapurna Conservation Area, Nepal**

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### **Abstract**

This study seeks to determine international tourists' willingness to pay (WTP) for entry fees in the Annapurna Conservation Area (ACA), Nepal. Data were collected in the ACA from May to June of 2011 where 101 international tourists participated in a contingent valuation survey. A modified New Environmental Paradigm scale, with both attitudinal and behavioural statements, was utilized to assess the influence of environmental commitment on WTP. The analysis suggests that the rating of trekking as the most important motive for entering the ACA was the only variable with a potentially important influence on WTP for the entrance fee into the ACA. A majority of participants were willing to pay considerably more than the current entry fee of USD 27. Environmental commitment was not found to have a significant effect on WTP. The mean and median WTP values were found to be USD 71.63 and USD 60, respectively. There is some evidence that this study may have been subjected to starting point bias. As such, the WTP values may be inflated.

### **Introduction**

Protected areas (PAs) are the cornerstone of biodiversity conservation efforts, and their numbers have been increasing worldwide. The majority of PAs throughout the world, however, are not financially self-sufficient and consequently are unable to meet either development or conservation objectives (IUCN, 2005). Inadequate funding limits the management and effectiveness of established PAs and plays a central role in the degradation of important natural resources (Bruner *et al.*, 2004).

Different mechanisms for the sustainable financing of PAs have been identified and debated, including domestic financing by governments and NGOs, foreign financing from international governments and NGOs, private sector support, and market-based strategies, such as tourism, resource user fees and ecological service payments (Emerson *et al.*, 2006). International tourism in particular has emerged as a major, and perhaps the primary, means of self-financing PAs (Boo, 1992; Dharmaratne *et al.*,

2000; Goodwin, 1996); it has become one of the few permitted uses of PAs that can generate financial benefits (Walpole *et al.*, 2001).

Tourist entrance fees in particular are perhaps one of the most controversial and politicized type of fee associated with visitation to PAs given the intangible nature of the product (Lindberg, 2001). Nevertheless, entrance fees for PAs can be justified in order to generate revenues to recover costs and ensure quality goods and services; cost recovery is a politically defensible position in regards to the amount of revenue to be collected (Laarman & Gregersen, 1996). However, based on existing entrance fee pricing policies in many developing countries, there is evidence of widespread adherence to consistently low entrance fees that are below the amounts required to finance operating budgets (Krug *et al.*, 2002; Laarman & Gregersen, 1996; Mmopelwa *et al.*, 2007).

The nonmonetary benefits of tourism have been valued using various economic estimation techniques and these studies have revealed that visitors and society in general place much higher value on PAs than traditional pricing structures reflect (Baral *et al.*, 2008; Barnes *et al.*, 1999; Bookbinder *et al.*, 1998; Chase *et al.*, 1998; Hadker *et al.*, 1997; Shultz *et al.*, 1998; Walpole *et al.*, 2001). The seemingly widespread inefficient pricing policies of PAs are likely due to a lack of understanding of the magnitude of their value, and the reluctance of managers and policymakers to raise existing fees for fear of the potential negative effects on the tourism industry (Dharmaratne *et al.*, 2000). Thus a better understanding of the true value placed on PAs by tourists, measured by tourists' WTP for access, is needed to set appropriate entrance fees that can further the financial sustainability of these areas.

The contingent valuation method (CVM) is a direct valuation method that uses a survey instrument to measure an individual's maximum WTP for a nonmarket good (ICEM, 2003). Compared to conventional attitudinal studies, the CVM provides a more accurate assessment of an individual's opinions and the estimated WTP can be incorporated into cost-benefit analyses (Cummings *et al.*, 1986). The use of a dichotomous choice (DC) framework with close-ended questions that require a "yes" or "no" answer has become the most widely used CVM format as it most closely resembles the way consumers make choices in the marketplace (Hanneman, 1984; Cummings *et al.*, 1986). The iterative bidding (IB) method is analogous to the DC format as it presents a series of DC WTP questions (Bateman *et al.*, 1995). This method has been advocated for its ability to capture the highest price consumers are willing to pay, thus measuring full consumer surplus (Cummings *et al.*, 1986). It is also statistically more efficient as it does not require as large of a sample size

to attain a given level of precision when compared to single-bound and double-bound DC formats (Mitchell & Carson, 1989).

It is generally assumed that WTP is a function of the personal characteristics of the respondents (e.g. income, age) and information about their behaviours. Research has shown that well-formed attitudes are good indicators of a person's actual and intended behaviours (Hadker *et al.*, 1997). In CV studies of environmental resources, analyzing environmental attitudes may be useful for explaining valuation responses and underlying motivations (Spash, 1997). The NOAA Panel on CV has recommended the use of assessments of attitudes towards the environment to help interpret responses to valuation questions (Arrow *et al.*, 1993, p. 4609).

Attitudinal questions in CV studies have often been limited to whether or not respondents are members of an environmental organization (e.g. Brown *et al.*, 1996; Dharmaratne *et al.*, 2000; Hanley & Graig, 1991; Loomis *et al.*, 2000; Turpie, 2003), although some studies have utilized the New Ecological Paradigm (NEP) scale to better gauge environmental attitudes (Cooper *et al.*, 2004; Kotchen & Reiling, 2000). The NEP scale is a standard measure of environmental concern consisting of 15 environmentally-related attitudinal statements that respondents agree or disagree with on a Likert scale (Schultz & Stone, 1994). Kotchen and Reiling (2000), however, suggest the use of a modified version with fewer items.

The present study undertakes a CV of the Annapurna Conservation Area (ACA) in Nepal, with the contingency factor being the entrance fee. The objective of this study is to determine if, and how much, tourists are willing to pay for an increase in the ACA entrance fee to support park management and conservation and development projects within the park. The current study includes behavioural statements in addition to attitudinal ones in a modified NEP scale to gauge tourists' environmental commitment in relation to their WTP for the entrance fee. Evidence of an individual's environmental commitment can be seen through both their pro-environmental attitudes and behaviours, as opposed to environmental concern which is seen through their attitudes alone and environmental behaviour.

## **Methods**

### *Study Area*

The ACA has been legally recognized as a PA since 1992. Its primary funding for core management operations is retrieved entirely through

visitor entrance fees (Gurung, 2003); special legislation allows it both to charge visitor entry fees and to retain them in order to finance operations and conservation and development projects. It is the largest conservation area in the country, covering an area of over 7,500 km<sup>2</sup>, with over 70,000 visitors per year (ACAP, 2009), and it is known to be one of the most geographically and culturally diverse areas in the world (Gurung & De Coursey, 1994). It is managed by the Annapurna Conservation Area Project (ACAP), whose mandate is to protect the environment and manage sustainable tourism and development (ACAP, 2009). Although the ACA has been able to generate a surplus from entrance fees in years with high levels of tourism, it has experienced large deficits in years with lower levels of tourism (Baral *et al.*, 2008). The current entry fee for the ACA is 2000 NRP (USD 27) for non-SAARC (*South Asian Association for Regional Cooperation*) citizens and it has remained unchanged since 1997.

#### *Survey Instrument and Sampling*

A written questionnaire was administered to 101 foreign tourists along the Annapurna Circuit Trek from May 14 to June 4, 2011. Respondents were approached in the lodges and teahouses to participate. A survey administrator was present to answer questions as needed and ensure comprehension of questions. The questionnaire was divided into four sections: 1) socio-demographic information; 2) purpose and motivations for visit; 3) assessment of environmental and social attitudes; and 4) assessment of the ACA. It contained a combination of dichotomous yes/no questions, statements to be ranked on a 5-point Likert scale, and a few open-ended questions. A modified NEP scale was used with nine questions measuring both attitude and current behaviour as they relate to pro-environmental actions.

Following the questionnaire, face-to-face interviews were conducted to elicit respondents' WTP for the ACA entry fee using the IB method. Respondents were presented with an initial dichotomous choice as to whether they were willing to pay a specified amount to enter the ACA. Five bid amounts were assigned at random (i.e. USD 30, 50, 70, 90 and 110). If respondents answered with a "yes," a bidding sequence ensued upwards until a "no" was reached, eliciting a maximum WTP; if respondents answered with a "no," a bidding sequence ensued downwards until a "yes" was reached. Respondents were also asked to provide their most important reasons for their WTP response in a final open-ended question.

#### *Data Analysis*

Pearson chi-square and basic frequencies were the statistical tests performed using SPSS. Three indices were created – environmental

concern or attitude (EA), environmental behaviour (EB) and environmental commitment (EAB) – and their values were determined based on the summation of the 5-point Likert scale ratings. To determine a level of comparison, a score of 80% or above was chosen to represent strong environmental attitudes, behavior and commitment; 24 out of 30 for EA, 12 out of 15 for EB and 36 out of 45 for EAB.

Variables that were hypothesized to have an effect on tourists' WTP were the amount of money spent on travel and leisure per year, the main motivation for the visit being the trekking experience, the use of a guide, their experience in the ACA, whether they had visited a PA before, whether they considered there to be no comparable destination to the ACA, the amount of time spent in the ACA, and their level of environmental commitment (based on their environmental attitudes and behaviors).

## **Results**

In the sample, 53.5% of respondents were female, 46.5% were male and the mean age was 29.6 (the median was 27) with a range from 18-61 years. The sample consisted of visitors from 20 different countries: Europe (55.4%); North America (20.8%); Australia and New Zealand (15.8%); Israel (5.0%); South America (2.0%); and Asia (1.0%). The majority of respondents spent less than USD 5,000 per year over the last five years (63.3%), while only 37.6% spent more than USD 5,000 per year. A high proportion of respondents (71.3%) specified that they had paid to enter a PA other than the ACA before. When asked to rate their main motives for entering the ACA, 92% rated trekking as important or very important. Only 32.6% of respondents had hired a guide for their trip. A very high proportion of the respondents (92.1%) rated their experience in the ACA to be positive (good or excellent). Only 5.9% rated their experience average and 2.0% rated their experience as poor. The majority of respondents rated the condition of the environment as average (31.7%), good (41.6%) and excellent (14.9%). A small proportion of respondents reported the condition of the environment as poor (3%) or very poor (8.9%). Participants rated the signage and information provided for tourists as very poor (2.0%), poor (18.8%), average (37.6%), good (30.7%) and excellent (9.9%). The mean number of days spent in the ACA was found to be 15.28 and the median was 14 days. On average, respondents spent USD 20.7 per day with a minimum of USD 7 and a maximum of USD 100. The descriptive statistics for the indices indicated a strong level (at least 80%) of environmental concern and commitment in the sample, and just below a strong level of environmental behaviour (Table 2).

Respondents were willing to pay more than the current entrance fee of USD 27, with a mean of USD 71.63 and a median of USD 60. The most common responses when respondents were asked their most important reason for their WTP response were they were “unsure of where the money is going” and that there was a “lack of transparency on spending” (33.6%) and that they had “budget constraints” (18.8%).

**Table 2.** Descriptive statistics of EA, EB, and EAB indices.

	EA (/30)	EB (/15)	EAB (/45)
Sample Size	101	101	101
Mean	24.3	11.8	36.14
Median	25.0	12.0	37.0
Std. Deviation	3.4	2.3	4.96

When comparing WTP to the eight variables, no statistically significant strong relationships were found; based on Pearson chi square values there was no evidence to reject the null hypothesis that no relationship exists between WTP and the eight variables (Table 3). The Pearson chi square significance level for the rating of trekking as being the most important motivation for visiting the ACA was the only result indicative of a potentially important relationship with WTP.

**Table 3.** Crosstabulations of willingness to pay versus comparable destination and number of days in the ACA.

		Comparable destination?		Number of days spent in the ACA	
		No	Yes	0-15 days	16-30 days
WTP Group	USD 30-60	18	34	31	21
	USD 70-110	25	24	29	20

**Table 4.** Crosstabulations of willingness to pay versus experience in the ACA, use of a guide and previous paid entry into a PA.

		How would you rate your experience in the ACA so far?				Participant hired a guide for trekking		Paid to enter a PA before?	
		Poor	Average	Good	Excellent	No	Yes	No	Yes
WTP Group	USD 30-60	0	3	24	25	37	15	14	38
	USD 70-110	2	3	15	29	32	17	15	34

**Table 5.** Crosstabulations of willingness to pay versus trekking as main motive and money spent on travel.

		Motive - Trekking					How much money spent on travel per year (USD)?	
		Very Unimportant	Unimportant	Neutral	Important	Very Important	0-4999 USD	5000 USD +
WTP Group	USD 30-60	1	1	5	14	31	35	16
	USD 70-110	1	0	0	13	35	27	20

### Discussion

The results reveal considerable WTP for the ACA entrance fee; the current entrance fee of USD 27 is much lower than what a majority of respondents stated they would be willing to pay. These results are consistent with those of Baral *et al.* (2008) who found that tourists were willing to pay a considerable amount more than the current entrance fee, with a mean of USD 69.2 and a median of USD 74.3. Of the eight variables that were hypothesized to have an effect on WTP, whether respondents rated trekking as important or very important as their main motivation for visiting the ACA was the only variable found to have a small but potentially important influence on WTP.

Although it has been found that individuals with positive environmental attitudes are more likely to engage in environmentally responsible behaviours (Azjen & Fishbein, 1980; Hines *et al.*, 1986; Schwepker & Cornwell, 1991) the relationship between environmental attitudes and behaviours has often been weak (Krause, 1993; Roberts, 1996; Van Liere & Dunlap, 1981). Thapa (1999) found in his study on the relation between environmental attitudes and environmentally responsible behaviour that “those individuals who reported ecocentric attitudes were likely to demonstrate activism behaviour pertaining to environmental issues, whereas those individuals with technocentric attitudes were not likely to participate” (p. 435). This study found a high level (at or above

80%) of environmental concern, behaviour and commitment. These results are consistent with those of Holden and Sparrowhawk (2002), who investigated the motivations of trekkers in the ACA and also found that a majority had a high level of concern over environmental issues. Furthermore, neither of these indices were found to be significantly related to WTP. The results also suggest that there was no difference as to whether environmental attitude, behaviour or commitment is a better indicator of WTP for this sample.

Although the use of five different starting bids in this study aimed to minimize starting point bias (where maximum WTP can be influenced by the starting bid in the auction process), the results suggest the presence of starting point bias. Of the 27.7% of respondents that were WTP the highest bid amount of USD 110, 28.6% (8/28) of these had a starting bid of USD 110, 25% (7/28) had a starting bid of USD 90, 17.9% (5/28) had a starting bid of USD 70, 14.3% (4/28) had a starting bid of USD 50 and 14.3% (4/28) had a starting bid of USD 30. The implications of this are that the use of the IB elicitation method may be inherently subject to starting point bias, which has been found in other studies that also utilized the IB method (Bateman *et al.*, 2001; Boyle *et al.*, 1985; Desvousges *et al.*, 1983; Mitchell & Carson, 1989). Given the potential presence of starting point bias, the WTP values obtained in this study may be inflated.

It was found that 27% of respondents were willing to pay the maximum bid amount of USD 110; however, according to Whittington (1998), it is advisable that the highest bid price be rejected by 90-95% of respondents to increase the credibility of the CV results. Unfortunately, this study did not achieve this and based on the results, the upper limit of the bid range was truncated. As Whittington (1998) has pointed out, researchers have often made the mistake of utilizing a range of bids that is too narrow when using a referendum-type elicitation procedure. This study was subject to this mistake as well and the distribution of WTP responses did not fit under a normal distribution curve. This may be a potential explanation as to why no statistically significant strong relationships were found between the eight variables and WTP.

## **Conclusion**

Evidence from this and other studies has shown that the potential for increased revenue generation for PAs through increased entrance fees is largely not being realized. The results of this study illustrate that a majority of visitors to the ACA are willing to pay considerably more than the current entrance fee of USD 27. Although the results did not reject the null hypothesis that no relationship exists between WTP and the eight variables examined, no strong relationships between the variables and



WTP were determined with a high level of confidence. Potential explanations for a lack of statistically significant relationships between these variables and WTP that demonstrate a high level of confidence are the truncation of the upper bid limit and the potential presence of starting point bias.

Statements related to environmentally-responsible behaviour, in addition to the attitudinal statements of the NEP scale, were included to capture a sense of respondents' overall environmental commitment. However, neither environmental concern, behaviour nor commitment were found to have a significant relationship with WTP. Furthermore, there was no difference as to whether environmental attitude, behaviour or commitment is a better indicator of WTP for this sample.

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*Himalayan Journal of Development and Democracy, Vol. 6, No. 1, 2011*

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