



Visitor preferences on different safari tour packages: A Case Study of Udawalawe National Park in Sri Lanka

Rathnayake Mudiyanseelage Wasantha Rathnayake¹

¹Faculty of Management Studies, Sabaragamuwa University of Sri Lanka, Belihul Oya, Sri Lanka

Received 13 April 2021

Revised 19 June 2021

Accepted 29 July 2021

Abstract

In Sri Lanka, visitors to national parks are not offered a choice when they go on safari tours regarding the type of wildlife viewing that they are interested in such as elephant watching, bird watching or general wildlife viewing. Although wildlife watching is as much a recreational activity as an educational activity, visitor requirements are often not met at national parks. In the present study, under different prices, facilities and services, four tour packages were presented to the visitors as choice sets at Udawalawe National Park (UNP) in Sri Lanka. Four hundred visitor groups were surveyed at the ticket-issuing office located at the entrance to the UNP within a 06 months' period covering week days, weekends, holidays and school vacations. A choice experiment was conducted and 'different willingness to pay (WTP) values were estimated for the safari tours. In addition, the WTP values for the visitor facilities and services presented to visitors were estimated. There was a significant difference in demand for the attributes found in tour packages. The majority were willing to pay more for the attributes of distance to be travelled and the availability of a professional guide in the safari vehicle. There was less demand for the facility of 'open hood' and one stop relaxation service in the tour package. The findings of the study will be helpful to park managers in proposing a price structure for safari tours and in providing a proper service to visitors at the UNP.

Keywords: Choice Experiment, Wildlife, National Park, Mixed Logit Model, Willingness to Pay, Safari Tours

¹ Corresponding author: warath1@gmail.com
ORCID: <https://orcid.org/0000-0002-3949-2140>

INTRODUCTION

Over 238,000 protected areas, including national parks, have been created worldwide for bio-diversity conservation (IUCN & UNEP-WCMC, 2016). In Sri Lanka, the biodiversity conservation is mostly confined to the national parks. According to Orams (1997), Zeppel and Muloin (2008), Waylen et al. (2009), and Ballantyne et al. (2011), wildlife tourism has the potential to affect the knowledge, attitudes and behaviours of visitors in wildlife areas. It is believed that experience of nature creates increased awareness and appreciation of wildlife resources (Russel, 1994; Ballantyne et al., 2011; Larm et al., 2018). For example, Skibins et al. (2013) compared tourists on safari in Tanzania and visitors to US zoos and found that visitor behaviors reflected the concern for wildlife conservation through giving money to buy habitat for a particular species and making policies to protect wildlife.

Wildlife watching is a form of non-consumptive tourism, which can be considered as a nature conservation educational activity if it is accompanied by a professional interpreter's services. In a national park, different types of recreational services are to be found among which wildlife safari is a type of recreational facility that comes with an attendant interpretive service where an interpreter/guide interprets the wildlife and natural history of the park. According to Ham (1992), Tilden (1977) and Moscardo (1999), in a wildlife safari with a live interpretive programme (i.e., with an attendant interpretive service), the interpreter can enhance visitor enjoyment by providing entertaining experiences or better orientation to the available sights, resources, and activities of the park.

In Sri Lanka, 26 national parks have been declared and wildlife safaris are the most common recreational service found in these parks. The existing wildlife safaris in the parks are elephant watching, bird watching, general wildlife viewing, leopard watching and whale watching. The Udawalawe National Park (UNP), which is located 160 km away from Colombo, the capital of Sri Lanka, is a popular wildlife park for elephant watching, bird watching and general wildlife viewing.

In this park, at present, visitors have no choice regarding the type of safari tour that they wish to go on as their preference for a particular kind of wildlife viewing is not taken into consideration. Although a guide is assigned at the park to go by the preferences of the visitors, more often the guide will

lead the group based on his preference without considering the choice of the visitors in the safari vehicle. Furthermore, as wildlife viewing is an educational activity, it can be only accomplished if a good interpretational service is provided by a guide or an interpreter. Hence, visitor satisfaction is also dependent on the interpretational service provided at the national park. Moreover, visitor preferences regarding wildlife viewing have to be met. In a safari service, visitors mainly consider the following options/alternatives, among them; elephant watching or bird watching or general wildlife viewing, distance to be travelled within the national park, availability of a professional guide/nature interpreter in the safari vehicle, open-hood vehicle facility, at least one stop facility for relaxation and the price of the safari tour in addition to the ticketing price

But choices of visitors, if left to them, could vary producing a large number making it difficult to identify the visitor demand for different attributes in a tour package. Hence, the relative demand for various attributes have to be identified so that, based on that, the main determinants of a safari tour can be established. The main objective of the present study was investigating the visitor preferences on different safari tour packages offered by the UNP in economic terms applying mixed logit model.

LITERATURE REVIEW

Scholars have frequently applied the discrete choice method to revealed preference data to estimate consumer preference for the different characteristics of quality-differentiated goods and services such as automobiles (Bento et al., 2009), housing (Bayer et al., 2007) and recreation sites (Von Haefen & Phaneuf, 2008; Hassan et al., 2019). Discrete choice models are widely used in studies of recreation demand. The discrete choices are studied using different logit models as the toolkits. Logit models vary starting from the simple binary logit model to the multinomial logit model (MNL) and the nested logit (NL) model. According to Koppelman and Sethi (2000) and Carrasco and Ortuzar (2002), the MNL and NL are the most popular of the generalized logit models. Domanski (2009) showed that, when the choice set faced by the individual becomes very large (i.e., on the order of hundreds or thousands of alternatives), computational limitations make estimation with the full choice set intractable.

The mixed logit method is more suitable for such situations and it is allowed by the existence of the independence of irrelevant alternatives (IIA)

assumption. Furthermore, the more advanced mixed logit models account for unobserved preference heterogeneity and overcome thereby the behavioral limitations of the IIA assumption. However, in doing so, they prohibit sampling of alternatives. Scholars such as, Parsons and Kealy (1992), Parsons and Needelman (1992), Feather (1994), and Bayer et al. (2007) showed that using alternatives in estimation can obviate such difficulties and produce consistent parameter estimates as also suggested by McFadden (1978). Von Haefen and Domanski (2018) confirmed that larger efficiency losses arise with smaller samples as predicted by theory. Therefore, the mixed logit model is considered to be the most promising state-of-the-art discrete choice model currently available.

Scholars have applied the mixed logit model in various recreational studies for taking policy decisions. For example, Termansen et al. (2008) applied the mixed logit models of recreational choices combined with GIS (Geographical Information Systems) to assess the economic benefits arising from policy initiatives. Further, Termansen et al. (2013) applied the mixed logit model to estimate the economic value of forest recreational services. Siderelis et al. (2011) used it to study site selection for recreational activities by visitors at the South Korean National Park. By examining visitor choices, they identified how park size and distance of trails affect choice patterns under different scenarios. Kemperman et al. (2005) applied the mixed logit method to predict the trip making propensity of visitors to urban parks. The model has also been used to study the recreational behavior of tourists. For example, Train (1998) studied the anglers' choice of fishing sites while Correia et al. (2007) studied the golf tourists' repeat choice behavior in Algarve. Lee et al. (2019) applied the mixed logit model to determine the significant attributes that affect glamping choices.

Despite the above-documented application of different discrete choice modeling approaches to recreational activities around the world, no study so far has used this model to investigate the probability of choosing an alternative safari tour package, willingness to pay (WTP) for each attribute in the safari tour package, and the determinants of choice of a safari tour package in economic terms.

Study Site

The study was carried out at the UNP in Sri Lanka (Figure 1). In the UNP, Tropical Dry Mixed Semi Evergreen Forest predominates and it is a prime habitat for large mammals including Asian Elephant (*Elephas maximus maximus*), Leopard (*Panthera pardus kotiya*), Sloth bear (*Melursus ursinus*), Golden jackal (*Canis aureus*), Water buffalo (*Bubalus bubalus*), Slender loris (*Loris tardigradus*), Wild boar (*Sus scropa*), Spotted deer (*Axis axis ceylonensis*), Barking deer (*Muntiacus muntjak*), Sambar (*Cervus unicolor*), Black napped hare (*Lepus nigricollis*) and Fishing cat (*Prionailurus viverrinus*). In addition, avifauna including endemic birds, large reptiles like Mugger crocodile (*Crocodylus palustris*), Estuarine crocodile (*Crocodylus porosus*) and Python (*Python molurus*) are found in the park. Wildlife safaris, camping and stays at wildlife bungalows are the main tourist activities in this park. At present, the UNP attracts more than 340,000 visitors annually and the majority of them come to enjoy ‘elephant watching’. It is said that around seventy Asian elephants can be seen on a safari tour in any given day conducted at the UNP.

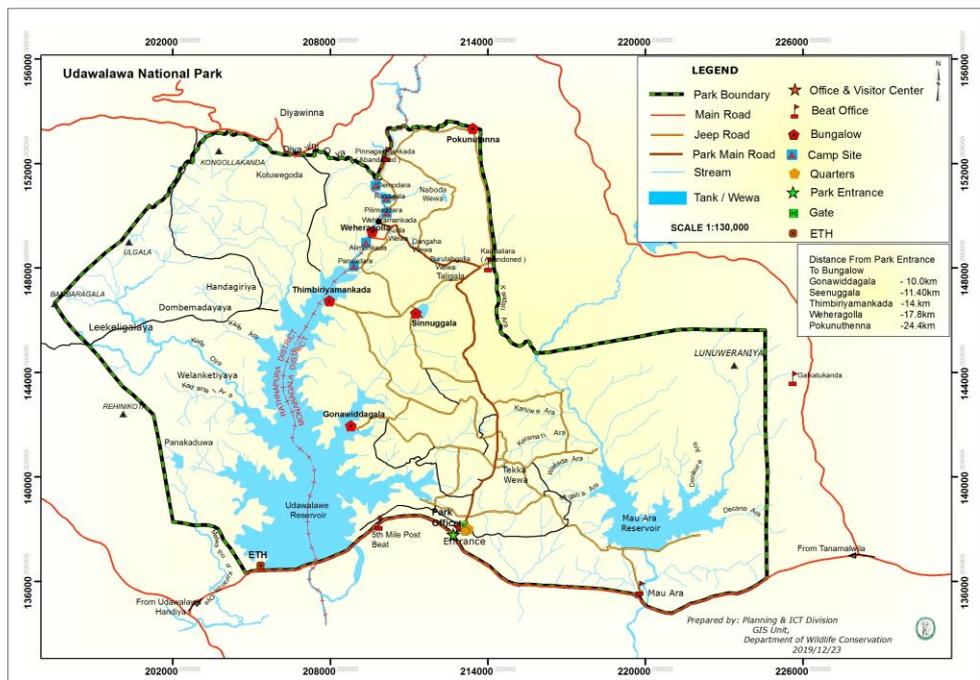


Figure 1: Base Map: Udawalawe National Park

METHODOLOGY

Mixed Logit Models generalize the conditional logit model by introducing an unobserved preference heterogeneity through the parameters (Train, 1998). This variation allows for richer substitution patterns making the mixed logit model an attractive tool for discrete choice modeling. The following model (Hole, 2007) gives the mixed logit choice probability:

$$P_{ni} = \int \frac{\exp(X'_{ni}\beta)}{\sum_{j=1}^J \exp(X'_{ni}\beta)} f(\beta|\theta) d\beta$$

where $f(\beta|\theta)$ is the density function of β . Allowing the coefficients to vary implies that we allow for the fact that different decision makers may have different preferences. If an individual is observed to make several choices, it can be taken into account in the analysis. Then, the probability of a particular sequence of choices is given by:

$$S_n = \int \prod_{t=1}^T \prod_{j=1}^J \left[\frac{\exp(X'_{njt}\beta)}{\sum_{j=1}^J \exp(X'_{njt}\beta)} \right]^{Y_{njt}} f(\beta|\theta) d\beta$$

where $Y_{njt} = 1$ if the individual chooses alternative j in the choice situation t and 0 otherwise. The θ parameters can be estimated by maximizing the simulated log-likelihood function.

$$SLL = \sum_{n=1}^N \ln \left\{ \frac{1}{R} \sum_{r=1}^R \prod_{t=1}^T \prod_{j=1}^J \left[\frac{\exp(X'_{njt}\beta_n^{[r]})}{\sum_{j=1}^J \exp(X'_{njt}\beta_n^{[r]})} \right]^{Y_{njt}} \right\}$$

where $\beta_n^{[r]}$ is the r^{th} draw for individual n from the distribution of β . This approach can be implemented in the mixed logit model in the Stata statistical package (Hole, 2007). The Willingness to Pay (WTP) for a particular attribute can be calculated through the use of Stata commands. Accordingly, since the price is assumed to be a fixed parameter, we have the convenient result as follows (Hole, 2007):

$$E(WTP^k) = - \frac{E(\beta^k)}{\beta^{price}}$$

Developing Choice Sets

Each choice set consisted of six attributes, namely, the price for a safari vehicle/jeep; wildlife viewing option – elephant watching only (EW), bird watching only (BW), and general wildlife viewing (GW); distance to be travelled in the park for wildlife watching; availability of a professional guide/interpreter in the vehicle for interpretation; availability of open-hood facility in the safari vehicle; and availability of at least one stop visitor facility for relaxation. Twelve alternative choice situations were developed, which were randomly put into three choice sets. A sample of the twelve choice alternatives are given in Table 1.

Sampling and Visitor Survey

Four hundred visitor groups were interviewed at the ticket-issuing office located at the entrance to the UNP within a 06 months' period in 2019 covering week days, weekends, holidays and school vacations. The ticketing procedure normally takes between 10 and 30 minutes based on the visitor numbers to the park and which time slot was utilized to interview the visitor groups. The interview time varied from 10-15 minutes depending on the discussion on wildlife and identification of their choices.

The stratified random sampling method was applied in the study and the person who seemed to be heading every 5th visitor group that came to the ticket counter was interviewed. The interviewee was shown twelve choice situations under three choice sets. These twelve choice sets were developed after conducting a preliminary survey with visitors and having discussions with safari jeep owners, guides/interpreters and Wildlife Officers at the UNP.

In the survey, a preliminary discussion was conducted with the head of the visitor group or the person who led the group to identify their visitor behavior and choices with regard to wildlife viewing. Thereafter, three choice sets, with 4 alternatives in each set, were presented to the interviewees and they were requested to select one alternative choice situation from each choice set. Although 400 visitor groups were surveyed, only 398 interviews were considered for analysis in the study. The 398 interviews represent 4776 cases for purposes of model estimation (398x12 treatments).

Table 1: Sample Choice Sets with Twelve Choice Alternatives with Options under Each Attribute

	Price (LKR)	Wildlife viewing	Distance to be travelled	Availability of a professional interpreter	Availability of an open hood facility	Availability of one stop facility for relaxation
Set 1	5500	EW	Less than 30km	Available	Not available	Not available
	4500	EB	Less than 30km	Available	Available	Not available
	6500	BW	More than 30km	Not available	Not available	Not available
	5000	GW	Less than 30km	Not available	Not available	Available
Set 2	6500	EW	Less than 30km	Available	Not available	Not available
	4500	EB	Less than 30km	Not available	Not available	Available
	5000	BW	More than 30km	Not available	Available	Not available
	5500	GW	Less than 30km	Available	Not available	Not available
Set 3	6500	EW	Less than 30km	Not available	Not available	Not available
	5500	EB	Less than 30km	Available	Not available	Available
	5000	GW	Less than 30km	Available	Available	Not available
	4500	BW	More than 30km	Not available	Not available	Available

Notes: EB- Elephant and bird watching, EW - Elephant watching, BW - Bird watching, GW - General wildlife viewing.

A series of choice experiments with twelve alternative packages were administered to visitors. The following attributes were included in the experiment.

- Price in Sri Lanka Rupees (LKR)
- Alternative wildlife observations (i.e., main focus on elephant watching, main focus on bird watching and general wildlife viewing)
- Availability of a professional nature interpreter in the safari jeep (0-1 dummy variable)
- Distance to be traveled within the park under the safari package (0-1 dummy variable. 1 = to be traveled more than 30 km. 0 = less than 30 km)
- Availability of ‘open hood’ facility in the vehicle (0 -1 dummy variable)
- Making available at least ‘one stop’ where the safari vehicle can be stopped for relaxation during the safari in the park” (0 -1 dummy variable)

The recorded data were analyzed using the Stata statistical package. The study investigated the probability of visitors choosing an alternative if the company is well-known; the probability of choosing an alternative in a choice situation; and the willingness to pay for each attribute.

RESULTS AND DISCUSSION

Demographic Characteristics of Respondents

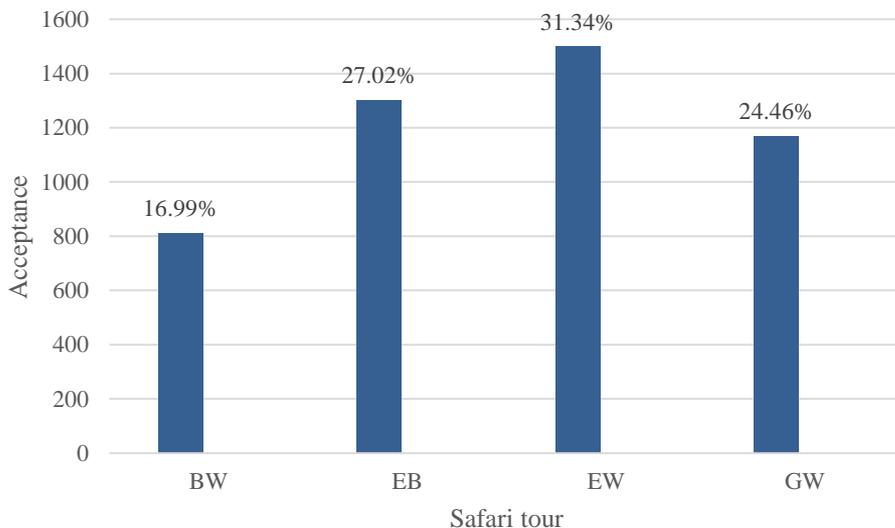
The summary of the visitor profile is given in Table 2. In terms of gender, the majority of the respondents (i.e., those who led the group) were males representing 71% of the total respondents. Most of the respondents were found in ‘35-45 years’ age category and up to ‘advanced level’ educational category. While the majority of the respondents (87.45%) were employed, a smaller percentage of respondents were either retired or house wives. The mean monthly household income was LKR 54,618.58, which is much higher than that of the officially announced poverty level for Sri Lanka. A high percentage of visitors (62.54% percent) in the sample had visited the park at least once before the current visit. . It is noteworthy that a considerable percentage of interviewed visitors (15.75%) held jobs or positions in environment- or tourism-related fields. As shown by Rathnayake (2015, 2016), those who work in environment- or tourism-related fields appear more willing to visit natural sites.

Table 2: Demographic Characteristics of Respondents

Characteristics	Mean	Std. Error
Household income (LKR) per month (hhinc)	54,618.58	7588.74
Visited the park before	62.54%	
Working in tourism- or environment-related field	15.75%	

Acceptance of a Safari Tour Package

In the present study, four safari tour packages were proposed and the acceptance level for each safari tour package is shown in Figure 2. The highest acceptance level of 31.34% was recorded for the elephant watching safari tour while the lowest acceptance level was recorded for bird watching at 16.99%. The acceptance levels for tour packages for elephant and bird watching and for general wildlife watching were recorded at 27.02% and 24.46%, respectively. Accordingly, the highest expressed interest by visitors to the UNP was for the elephant watching tour package and a combined elephant and bird watching tour package respectively. On the other hand, a few visitors were interested in the bird watching tour package.

**Figure 2:** Acceptance level of alternative safari tours by the visitors

Acceptance of Proposed Tour Package Values

The study proposed four packages ranging in price from LKR 4000 to LKR 6000. It was found that, as expected, the majority (46.69%) were interested in the least expensive tour package valued at LKR 4000 (Figure 3). There was no significant difference (ranging from 16.48% to 19.24%) among interviewees when it came to selecting a tour package from among those priced between LKR 4500, LKR 5000 and LKR 6000. This suggests that 47.31% were considering the price as well as what was in the tour package when making their choice of a package.

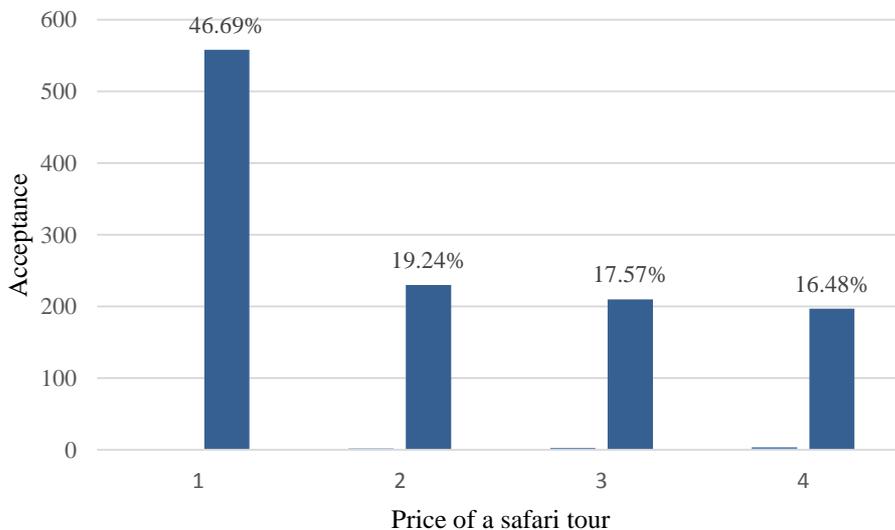


Figure 3: Acceptance level of prices allocated for the safari tour packages

Note: 1= LKR 4500, 2=LKR 5000, 3= LKR 5500 & 4=LKR 6500

Choice Experiment Analysis

Table 3 gives the estimated parameters, standard errors and p-values for the mixed logit model. It shows that there is a significant preference heterogeneity for all the attributes in the model. All the parameters of the mixed logit model were highly significant. However, the relative sizes of the parameters were not identical. The open-hood vehicle (parameter 'openh) has the largest standard deviation while the price for a safari vehicle has the smallest. The correlation in error terms is reported in the lower part of Table 3.

Table 3: Results of mixed logit regression model

Variable	Co-efficient
Mean	
Price	-0.001637*** (0.00011)
Alternative	0.49501*** (0.09541)
Distance	1.87341*** (0.22501)
Pro-guide	1.525631*** (0.16930)
Open	3.72394*** (0.33982)
One stop	3.82169*** (0.31426)
SD	
Alternative	0.86909*** (0.09813)
Distance	1.90797*** (0.21952)
Pro-guide	1.12976*** (0.15762)
Open	2.62258*** (0.32019)
One stop	2.24794*** (0.25258)

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The parameters ‘alternative’ (alternative tour package), ‘distance’ and ‘proguides’ (professional guide service) were positive and highly significant. This indicates that visitor choice regarding an alternative safari tour package is mainly determined by the proposed safari tour, the distance to be travelled, and availability of a professional guide within the safari vehicle. The parameters ‘price’, ‘openh’ (open-hood safari vehicle) and ‘onestop’ (at least one stop for use as a relaxation facility) are negative with regard to choosing an alternative safari tour package. This shows that visitors prefer ‘lower prices for a safari tour option’, ‘open hood safari vehicles’ and ‘stopping inside the park for relaxation’. A likelihood ratio test for the joint significance of the standard deviations reported was -1133.4573 while the associated p -value was small, implying rejection of the null hypothesis that all the standard deviations are equal to zero.

Demand for a Safari Tour

The overall demand (in terms of WTP) for a safari tour package was estimated as LKR 4425.18 per visit, which means that visitors were willing to pay that amount for a safari vehicle for watching wildlife at the UNP. The WTP values for each safari tour alternative were estimated by applying Stata commands and Table 4 gives the resultant WTP value for each tour package. The highest WTP value was recorded for the bird-watching safari tour while the lowest WTP was recorded for the elephant-watching tour. Further, the

results reveal that visitors are willing to pay LKR 4522.30 for a safari tour that combines elephant and bird watching. For general wildlife watching, a WTP value of LKR 4227.14 was estimated.

Table 4: Estimated WTP values for alternative safari tours

WTP for safari tour alternatives (LKR)			
Elephant watching	General wildlife watching	Elephant and bird watching	Bird watching
3933.70	4227.14	4522.30	4589.51

In addition to the demand for each safari tour package, the demand for applied attributes were also estimated (see Table 5). The Table shows that the highest WTP values are for the parameters ‘distance’ and ‘proguide’, which mean that selection of a particular tour package is mainly determined by the distance to be travelled inside the UNP and the availability of a professional guide in the safari vehicle. Lower WTP values were indicated for the availability of facilities such as open-hood vehicle and one stop facility.

Table 5: The WTP values for each attribute

WTP for each attribute (LKR)			
Distance to be travelled	Availability of a professional guide	Open hood vehicle	One stop facility
1363.03	1067.89	634.53	343.35

Revenue generation under Package Level

According to the records on visitor numbers for 2019, the UNP received 41,228 safari jeeps. Hence, Table 6 gives the revenue under each category based on the acceptance level of each tour package and the estimated WTP value for each tour package.

As Table 6 shows, the maximum revenue can be obtained from the ‘elephant watching’ tour package and the combined elephant and bird watching tour package, respectively. The total revenue is estimated at LKR 176.28 million. If a mean WTP value of LKR 4425.18 is applied, the revenue will be LKR 182.75 million, which constitutes a 3.6% revenue increase for the Park. Accordingly, safari jeep owners can get their revenue increased by applying a flat rate for the safari tour package. On the other hand, visitor satisfaction too can be either increased or decreased by different values (see Table 6). Thus, the lowest satisfaction levels per year are recorded for elephant watching and

general wildlife watching, respectively. If the mean WTP value of LKR 4425.18 is implemented for the combined elephant and bird watching package and for the bird watching package the satisfaction level would increase by LKR 1.08 million and LKR 1.15 million, respectively.

Table 6: Revenue under each safari tour package

Safari tour package	Expected vehicles	WTP	Revenue	Revenue Mean WTP	Difference
Elephant watching	12943	3933.70	50.91	57.27	-6.36
General wildlife watching	10101	4227.14	42.70	44.70	-2.00
Elephant and bird watching	11159	4522.3	50.46	49.38	1.08
Bird watching	7017	4589.51	32.20	31.05	1.15
Total Revenue			176.28	182.75	-6.12

Note: Revenue and the differences are in LKR million

The overall decrease in satisfaction level would be LKR 6.12 million if the resultant WTP value was to be taken as the price of a safari tour package. This indicates that more facilities should be added and the services should be improved if the safari tour packages are to be separately priced and implemented at the UNP. However, at present, the price of a tour package is more than LKR 4500.00 in actual practice. Accordingly, if more facilities were added and services improved as mentioned in the choice sets, it will not be an issue in sense of visitor satisfaction. The relationship between revenue under different resultant WTP values and the mean WTP value of a tour package are given in Figure 4.

Figure 4 shows that there is a big gap in the revenue between the estimated WTP values for the elephant watching and general wildlife watching tour packages if the type of tour package is not considered. The revenue difference is minimal for elephant and bird watching packages under the estimated WTP values with an estimated flat value of WTP at LKR 4425.18. Therefore, if the value of the tour package is priced at LKR 4425.18, the majority of visitors will accept it as the safari vehicle price for wildlife watching at the UNP.

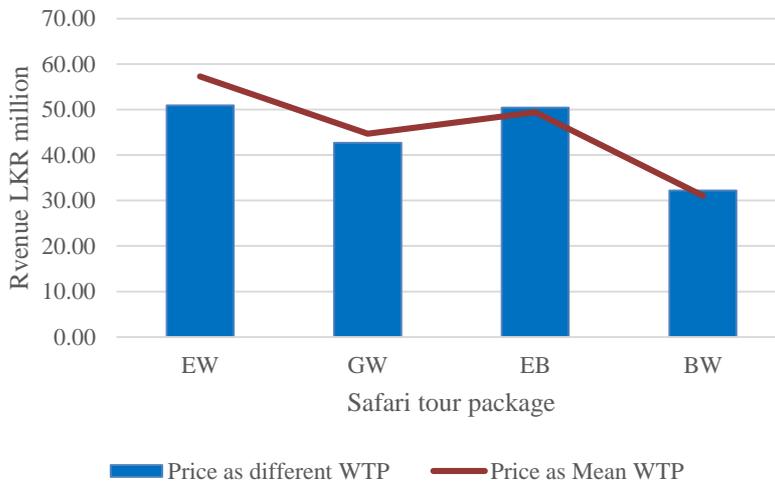


Figure 4: Revenue under the estimated WTP values

LIMITATIONS OF THE STUDY

In selecting choice sets, the visitors appear to be mainly dependent upon their past experience on wildlife viewing at the national park. This is because, among the safari tour packages, the differences between WTP values for packages were not significant except in the case of the elephant watching safari package. Further, as has been the case in other studies applying contingent valuation methods, in this study too there were limitations and hypothetical biases in selecting a particular choice set. As pointed out by several scholars, the estimated value does not exhibit the scope of the choice set and, hence, the respondents are either unable or find it difficult to understand the value of a safari tour package (Boyle et al., 1993; Foster & Mourato, 2003; Hausman et al., 1995; Shavell, 1993). Market failure has also been cited as a reason for the respondents failing to understand the value of a particular tour package. Furthermore, informational biases provided by the interviewer, too, can influence the respondents' choice. Considering these pitfalls, a proper training was given to the enumerators on how to interview and present the choice sets and to collect information correctly so as to minimize the hypothetical and informational biases. In addition, the questionnaire was pretested several times and accordingly revised to minimize the biases of the responses given by the respondents during the survey.

CONCLUSION

This study contributes to the existing literature on wildlife watching and recreation. Choice modeling was applied in assessing visitor preferences for different tour packages to be operated at the UNP. On average, the respondents preferred the elephant watching tour package under a price of LKR 3933.70. If a tour package is not specified, their WTP was LKR 4425.18. There was a significant difference in demand for the attributes found in tour packages. The majority were willing to pay more for the attributes of distance to be travelled and the availability of a professional guide in the safari vehicle. There was less demand for the facility of ‘open hood’ and one stop relaxation service in the tour package. In general, the open hood facility was mainly demanded by those groups interested in bird watching. These values are important in designing tour packages and for pricing the tour packages available at the UNP. There is potential for offering four types of safari tour packages, such as elephant watching, elephant and bird watching, general wildlife watching and bird watching. At present, different prices are charged from visitors for a safari tour by safari jeep owners without taking into consideration visitor preferences with the amount charged varying from LKR 4500 to LKR 7000 without a scientific basis for such price variations. There is no consideration of, for example, the vehicle condition, number of visitors in the group, travelling time, and whether the tour group is local or foreign.

FUTURE DIRECTIONS AND IMPLICATIONS

The present study suggests possible ways for the park managers and safari jeep owners to design a price structure for the safari tours and safari tour vehicle hiring at the UNP for a proper operation of safari tours. In addition, the study will be helpful in assigning guides based on visitors’ choice of tour packages as guides are knowledgeable in different fields such as bird watching, elephant watching, and general wildlife watching. There is also a need for a better nature interpretation to meet visitor requirements. Hence, the park management should take steps to train their guides so they become professional guides who can provide specialized knowledge to visitors in different wildlife viewing fields.

ACKNOWLEDGEMENT

The author would like to thank the anonymous reviewers for their excellent reviewer suggestions in completing this study.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

REFERENCES

Ballantyne, R., Packer, J., and Sutherland, L. A. (2011). Visitors' memories of wildlife tourism: Implications for design of powerful interpretive experiences. *Tourism Management*, 32(4), 770-779.

Bayer, P., Ferreira, F., and McMillan, R. (2007). A Unified Framework for Measuring Preferences for Schools and Neighborhoods. *Journal of Political Economy*, 115(4), 588-638.

Bento, A. M., Goulder, L. H., Jacobsen, M., and Von-Haefen, R. (2009). Efficiency and Distributional Impacts of Increased U.S. Gasoline Taxes. *American Economic Review*, 99(3), 667-699.

Boyle, K. J., Welsh, M. P., and Bishop, R. C. (1993). The role of question order and respondent experience in contingent-valuation studies. *Journal of Environmental Economics and Management*, 25(1), S80-S99

Carrasco, J. A., and Ortuzar, J. de D. (2002). Review and assessment of the nested logit model. *Transport Reviews*, 22(2), 197-218.

Correia, A., Barros, C. P., and Silvestre, A. L. (2007). Golf Tourism Repeat Choice Behaviour in the Algarve: A Mixed Logit Approach. *Tourism Economics*, 13(1), 111-127.

Domanski, A. (2009). Estimating Mixed Logit Recreation Demand Models With Large Choice Sets. Paper presented at the Annual Meeting of Agricultural and Applied Economics Association, Milwaukee, Wisconsin.

Feather, P. (1994). Sampling and Aggregation Issues in Random Utility Model Estimation. *American Journal of Agricultural Economics*, 76(4), 772-780.

Foster, V., and Mourato, S. (2003). Elicitation Format and Sensitivity to Scope. *Environmental and Resource Economics*, 24, 141-161.

Ham, S. 1992, *Environmental Interpretation: A practical guide for people with big ideas and small budgets*. Colorado, Golden: North America Press.

Hassan, M. N., Najimi, A., and Rashidi, T. H. (2019). A two-stage recreational destination choice study incorporating fuzzy logic in discrete choice modelling. *Transport Research Part F: Traffic Psychology and Behaviour*, 67, 123-141.

Hausman, J. A., Leonard, G. K., and McFadden, D. (1995). A utility-consistent, combined discrete choice and count data model Assessing recreational use losses due to natural resource damage. *Journal of Public Economics*, 56(1), 1-30.

Hole, A. R. (2007). Fitting mixed logit models by using maximum simulated likelihood. *Stata Journal*, 7, 388–401.

Kemperman, A. D. A. M., Ponje, M. M. W., and Timmermans, H. J. P. (2005). Analyzing heterogeneity and substitution in trip-making propensity to urban parks: a mixed logit model. *Tourism Analysis*, 10(3), 223-232.

Koppelman, F. S., and Sethi, V. (2000). *Closed Form Logit Models*. In D. A. Hensher & K. J. Button (Eds.), *Handbook of Transport Modeling* (pp 221-228). Pergamon Press, Oxford.

Larm, M., Elmhagen, B., Granquist, S. M., Brundin, E. and Angebjorn, A. (2018). The role of wildlife tourism in conservation of endangered species: Implications of safari tourism for conservation of the Arctic fox in Sweden. *Human Dimensions of Wildlife*, 23(3), 257-272.

Lee, W. S., Lee, J. K., and Moon, J. (2019). Influential attributes for the selection of luxury camping: A mixed-logit method. *Journal of Hospitality and Tourism Management*, 40, 88-93.

McFadden, D. (1978). *Modeling the Choice of Residential Location*. In A. Karlqvist & et al. (Eds.), *Spatial Interaction Theory and Planning Models*. Amsterdam: North Holland.

Moscardo, G. (1999). *Making visitors mindful: principles for creating quality sustainable visitor experiences through effective communication*. USA: Sagamore Publishing.

Orams, M. B. (1997). Historical accounts of human-dolphin interaction and recent developments in wild dolphin based tourism in Australia. *Tourism Management*, 18(5), 317-326.

Parsons, G., & Kealy, M. (1992). Randomly Drawn Opportunity Sets in a Random Utility Model of Lake Recreation. *Land Economics*, 68(1), 93-106.

Parsons, G., & Needelman, M. (1992). Site Aggregation in a Random Utility Model of Recreation. *Land Economics*, 68(4), 418-433.

R. M. W. Rathnayake (2015). Estimating Demand for Turtle Conservation at Rekawa Sanctuary in Sri Lanka. Working Paper No. 92-15. South Asian Network for the Development and Environmental Economics, Kathmandu, Nepal

Rathnayake, R. M. W. (2016). Vehicle crowding vs. consumer surplus: A case study at Wasgomuwa National Park in Sri Lanka applying HTCM approach. *Tourism Management Perspectives*, 20 (2016), 30–37.

Russell, C. L. (1994). Ecotourism as experiential environmental education? *Journal of Experiential Education*, 17, 16–22.

Shavell, S. (1993). *Contingent valuation of the nonuse value of natural resources. Implications for public policy and the liability system*, United Kingdom: Emerald Group Publishing Ltd.

Siderelis, C., Moore, R. L., & Lee, J. H. (2011). A Mixed Logist Model of Visitors' National Park Choices. *Society & Natural Resources*, 24(8), 799-813.

Skibins, J.C., Powell, R. B., & Hallo, J. C. (2013). Charisma and conservation: Charismatic megafauna's influence on safari and zoo tourists' pro-conservation behaviors. *Biodiversity and Conservation*, 22(4), 959-982.

Termansen, M., McClean, C. J., & Jensen, F. S. (2013). Modelling and mapping spatial heterogeneity in forest recreation services. *Ecological Economics*, 92, 48-57.

Termansen, M., Zandersen, M., & Mcclean, C. (2008). Spatial substitution patterns in forest recreation. *Regional Science and Urban Economics*, 38(1), 81-97.

Tilden, F. (1977). *Interpreting Our Heritage*. (3rd ed.). Chapel Hill: North Carolina Press.

Train, K. (1998). Recreational demand models with taste variation, *Land Economics*, 74 (2), 230-239.

Von Haefen R. H., & Domanski, A. (2018). Estimation and welfare analysis from mixed logit models with large choice sets. *Journal of Environmental Economics and Management*, 90, 101-118.

Von Haefen, R. & Phaneuf, D. (2008). Identifying Demand Parameters in the Presence of Unobservables: A Combined Revealed and Stated Preference Approach, *Journal of Environmental Economics and Management*, 56, 19-32.

UNEP-WCMC & IUCN (2016). *Protected Planet Report*. UNEP-WCMC and IUCN: Cambridge UK and Gland, Switzerland.

Waylen, K. A., McGowan, J. K., Pawi Study Group & Milner-Gulland, E. J. (2009). Ecotourism positively affects awareness and attitudes but not conservation behaviours: a case study at Grande Riviere, Trinidad, *Oryx*, 43(3), 343-351.

Zeppel, H. & Muloin, S. (2008). Conservation Benefits of Interpretation of Marine Wildlife Tours. *Human Dimensions of Wildlife*, 13, 280-294.