Journal of Marketing and Consumer Research - An Open Access International Journal
Vol.4 2014

Using Choice Experiments to Understand Visitors Preferences for the Man-Made Lake Ecotourism Services in Terengganu, Malaysia

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Abstract
This paper aims to capture the level of satisfaction of the visitors towards the ecotourism service attributes at Kenyir Lake, by providing results of a valuation study on the boat house services, which is the main focus in this research. A choice experiment is employed to estimate the visitors' preferences for boat house service attributes. The attributes investigated were visitors guide (TG), provision of safety equipment (SAFE), coverage for communication system (COMM), package of activities (ACTV) and extra package price (EPP). The simple conditional logit (CL) model and CL interaction model were estimated in order to identify the preferences of the visitors from various service options of boat house attributes. This study presents implications for the policy makers in guiding the future management and the improvement of boat house services. The results of this study will be able to facilitate the future management in establishing an efficient implementation in order to improve the boat house services to fulfill the visitors' satisfaction.
Keywords: Choice experiment, Kenyir Lake, Ecotourism service attributes, Conditional logit model, Boat house services.
Word Count: 5,655

1. Introduction

Ecotourism is a form of tourism that emphasizes on sustainable development and simultaneously increasing the standard of living to the surrounding communities includes wetland, national parks, marine parks, wildlife sanctuary, rivers and lakes. Kenyir Lake is a man-made lake that is originated from a hydroelectric project in 1985. It is enrich by various kinds of natural resources and is a home to a variety of wildlife. Apart from that, the boat house service which is the main mode of travel on Kenyir Lake has also become one of the interesting attractions for visitors.

A boat house is a large boat which is equipped with various facilities that include beds, kitchen, bathroom, refrigerator, television room, living room and dining room that are very comfortable. Each boat house can accommodate 15 to 20 visitors at one time. Presently, visitors can rent a boat house for with average RM 1000 per day. The boat house was originally operated by the local residents. The operation and management of the services were fully under the responsibility of the boat house operators. However, the Development Authority of Terengganu Tengah (KETENGAH), which is an agency under the Ministry of Rural and Regional Department is the responsible body that issues licenses and monitors the operation.

Recently, the number of visitors that stayed in the boat house has increased significantly on a yearly basis and is in lieu with the increasing number of the visitors visits at Kenyir Lake. **Table 1** shows the statistics of the visitors visits and rented the boat house at Kenyir Lake from the year 2004 until 2011which has increased from 2,411 visitors to 10,353 visitors in 2011. Moreover, the growing number of visitors has reached more than ten thousand begin in 2010 which indicate that the services have become increasingly popular among visitors. This trend can become a challenge to the boat house operators and local authorities, who must cater to the needs of the visitors and at the same time, ensuring the services of the boat house that can be convenience to them.

The main aim of the study is to estimate the visitors' preferences for the boat house service attributes in Kenyir Lake by using choice experiment technique. This exercise is important in order to realize that the service fulfils the requirement of the visitor preferences and their satisfaction towards the services. Thus, this paper is organised into four main sections. Section two describes the location of study. Section three explains the methodology and source of data used in the study. Empirical result are presented in Section four while the last section offer some discussion and concluding comments with regard to the findings.

Table 1
Number of Visitors Visitd and Accommodated in Boat house at Kenyir Lake

Year	Visitors Visits at Man-Made Kenyir Lake	Visitors Staying in boat house (Normal: 3 days 2 Nights)
2004	41,853	2,411
2005	50,815	6,877
2006	60,532	4,126
2007	92,199	6,864
2008	133,569	6,292
2009	189,388	7,681
2010	225,570	10,877
2011	275, 241	10,353

Source: KETENGAH, (2011)

2. Methods

2.1 Study Area

Kenyir Lake is located in the state of Terengganu, east of Penisular Malaysia. This man-made lake was initially developed due to the water retention from the Kenyir Hydroelectric Dam that was completed in 1985 and it is the largest man-made lake ever built to generate electricity in Southeast Asia. The main entrance to Kenyir Lake is through Pengkalan Gawi which offers the services of a Visitors Information Centre, a jetty, a parking area, boats, boat house and a variety of water sports amenities for rental. Another ecotourism services provided here are chalets and resorts that are available at different prices to suit every budget. The Development Authority of Terengganu Tengah, (KETENGAH) an agency under the Ministry of Rural and Regional Department is the main responsible authority that manages Kenyir Lake from the overall aspect including the development planning of Kenyir Lake, providing infrastructure facilities, approved the application based on tourism programs and activities in the area of Kenyir Lake and giving out license for boat services. Some of the interesting activities that can be done are fishing, camping, jungle trekking, water sports and staying in the boat house. Kenyir Lake offers enjoyable experiences and unforgettable scenic beauty for the visitors.

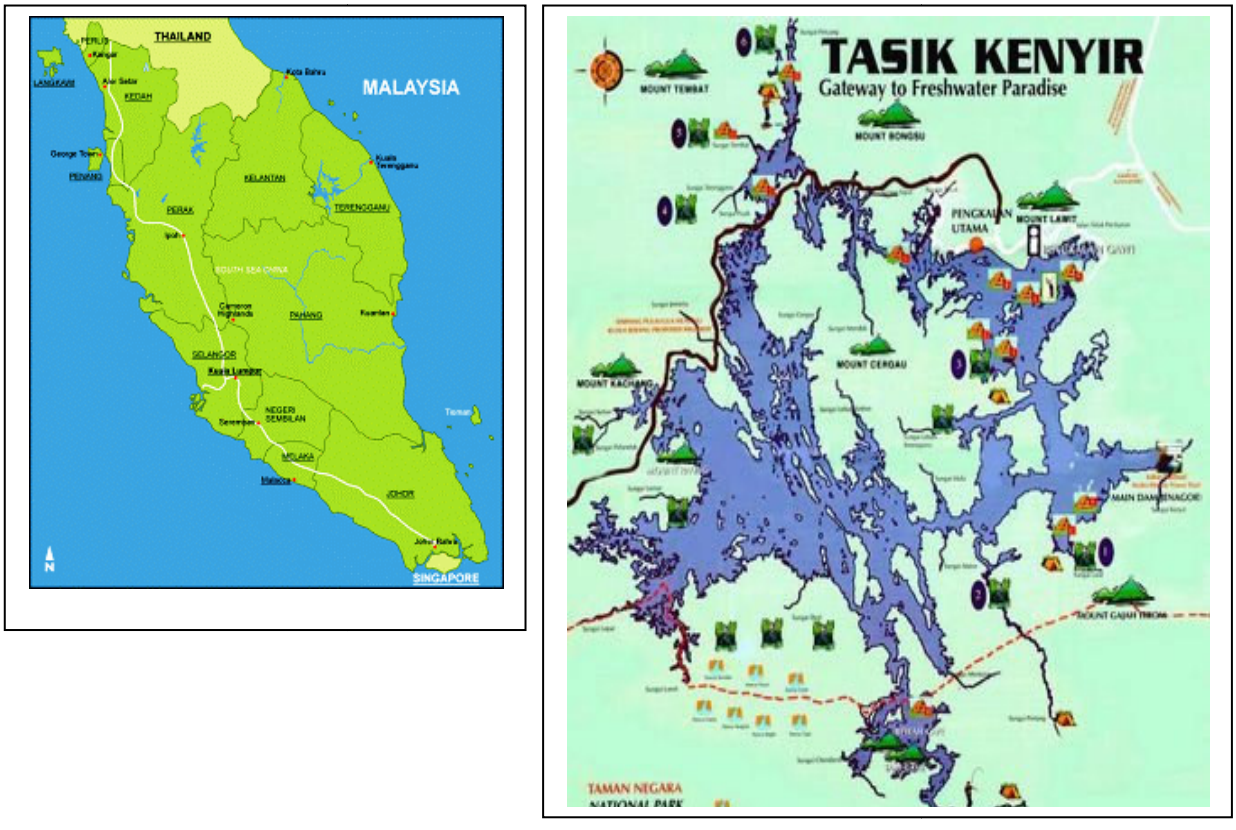

Figure 1 The Location of Kenyir Lake

Figure 2 The picture of Boat House in Kenyir Lake

2.2 Theoretical Background of the Choice Experiment

Choice experiment (CE) method is one of the main choice modeling (CM) alternatives that can be used to estimate the value of changes in environmental quality and services that are not reveal in market transactions. Choice modeling has it early origins in transportation and marketing fields and has been modified for applications in the environmental valuation exercise. The technique is versatile, and can be designed for a wide variety of purposes (Rolfe, 2006). CM is a family of survey-based methodologies for modeling preferences for goods, where the goods are describe in terms of their attributes and level (Hanley et al., 2001). In a nutshell, a choice experiment study involves asking the respondents to choose between different bundles of goods, where these goods are described in terms of their attributes and levels. A monetary value is included as one of the attributes, along with other attributes of importance, when describing the profile of the alternatives presented (Alpizar et al., 2001). By making one of these attributes a price or cost term, marginal utility estimates can be converted into willingness-to-pay estimates for changes in attribute levels, and welfare estimates obtained for combinations of attribute changes (Hanley et al., 2006).

The choice experiment technique allows trade-offs between goods in the choice set or attribute profile, as well as monetary compensation (Hanley et al., 2001). Therefore, this study, boat house operators can examine the numbers of attributes related to boat house services that the visitors are willing to trade off for another. This information could improve the efficient of the services. There are two aspects of CE related to theoretical foundations. The CE technique is an application of the Characteristics Theory of Value by Lancaster (1966) combined with the Random Utility Theory by Manski (1977). According to Lancaster (1966), the good per se, do not give utility to the consumer; it possesses characteristics, and these characteristics give rise to utility; goods will possess more than one characteristic, and many characteristics will be shared by more than one type of goods and goods in combination may possess characteristics different from separate goods. Meanwhile, the random utility theory (RUT) can help to derive the best estimator of the unknown true utility function and this theory relates utility directly to the probability of choosing an alternative from a set of alternatives (Mohd Rusli et al., 2009).

Conditional logit is commonly used to estimate the CE exercise, Hanley et al., (1998) and Train (2003). Using their method, consider the vector of all attributes of alternative j as faced by respondent i as $Z_{ij.}$ The respondent would gain a definite level of utility from each alternative. According to Lancaster (1966), the utility that respondent *i* can obtain from alternative j, denoted U_{ij} can be written as $U_{ij} = U(Z_{ij})$. U is a utility function. The utility that respondents derive from any options is assumed to depend on the attributes. The respondent chooses the alternative that provides the greatest utility. Alternative *j* will be chosen over some other option *k,* therefore the behavioural model if and only if $U_{ij} > U_{ik,}$; $j \neq k$. Then, we can write; $U(Z_{ij}) > U(Z_{ik})$; $j \neq k$. Thus, the individual utility function (for individual i), where the respondent is facing a set of j alternatives (j= 1…..J) can be written as:

$$U_{ij} = V_{ij} + \varepsilon_{ij.}$$

Assume now that the utility function can be partitioned into two parts; one deterministic and in principle observable (denoted as V_{ij}) and one random and unobservable, denoted as ε_{ij} (Hanley et al., 1998). In this situation, the ε_{ij} is not known and therefore is treated as a random term. The joint density of the random vectors, $\varepsilon_i = (\varepsilon_{i1,} \varepsilon_{i2}\ldots. \varepsilon_{ij})$ is denoted $f(\varepsilon_i)$. With this density, the researcher can make probabilistic statements about the decision-maker's choice. The probability that respondent *i* choose alternative *j* is (Train, 2003); P_{ij} = Prob (V_{ij} -

$V_{ik}) > (\varepsilon_{ij} - \varepsilon_{ik})$; $j \neq k$. This probability is a cumulative distribution, which is the probability that each random term, $\varepsilon_{ij} - \varepsilon_{ik}$ is less than the observed quantity $V_{ij} - V_{ik}$. Hence, by using the density $f(\varepsilon_i)$ this cumulative probability can be rewritten as; $P_{ij} = \int I(\varepsilon_{ij} - \varepsilon_{ik}) < (V_{ij} - V_{ik}) f(\varepsilon_i) d\varepsilon$.

In order to estimate a random utility model, a distribution on error terms must be specified. If error terms are assumed to be independently and identically distributed (IID), and if this distribution can be assumed to be a Gumbel distribution (the error terms are logistically distributed), the conditional logit model can be developed. Thus, the probability of respondent i choosing alternative j can be formed as:

$$P_{ij} = \frac{\exp(\mu V_{ij})}{\sum_j^t \exp(\mu V_{ik})} \quad \text{---------- (1)}$$

The assumption of independent and identically distributed error terms implies the independence of irrelevant attributes (IIA). According to Ghorbani et al., (2011), the property of IIA states that the relative probabilities of two options being selected are unaffected by the introduction or removal of other alternatives. The functional form of the respondent systematic component of the utility function, by assuming that V_{ij} is a linear parameter, can be expressed as:

$$V_{ij} = \beta_1 X_{ij} + \beta_2 X_{2ij} + \ldots. \beta_n X_{nij} \quad \text{---------- (2)}$$

where X_s are the variables in the utility function and the β_s are coefficients to be estimated. If a single vector of coefficients β_s applies to the whole, associated utility functions and the scale parameter μ assumed to be equal to 1, $\mu = 1$, then we can rewrite as:

$$P_{ij} = \frac{\exp(\beta V_{ij})}{\sum_j^t \exp(\beta V_{ik})} \quad \text{---------- (3)}$$

Where P_{ij} = Respondent i choice probability of alternative j, X_{ij} and X_{ik} are the vectors describing the attributes of j and k and β is a vectors of coefficients. Then, the next step is to calculate the willingness to pay estimation, which is based on β values. The β values show the effect on utility of changes in the attributes, but for a cost-benefit analysis, the money-metric measure of willingness to pay (WTP) is needed (Hanley and Barbier, 2009). For a marginal change in an attribute, WTP is typically derived by dividing the β value of each non-price attribute by the β value of the price attribute.

$$WTP = \frac{-\beta X1}{\beta C} \quad \text{---------- (4)}$$

The indirect utility function, $V_{ij} = \beta_1 X_{ij} + \beta_2 X_{2ij} + \ldots. \beta_n X_{nij}$ is linear and therefore a ratio of any two coefficients provides information about the trade-off or marginal rate of substitution between the corresponding variables. This value for any attributes (other than price attribute) is called the implicit price or marginal rate of substitution (MRS) (Hanley and Barbier, 2009).

2.3 The Design and Approaches of Choice Experiment

Generally, the main stages in designing a choice experiment are selection of attributes, assignment of levels, choosing experimental design, construction of choice sets and measuring preferences. In CE questionnaire design, it is important to decide the number of attributes and levels which are related to the study site problem at the first design stage. In this case, the goods to be valued are the boat house service attributes at Kenyir Lake. The selected attributes and their levels are reported in Table 2.

Five boat house service attributes were selected and used in this study. The first attribute is visitors guide (TG). Two levels are chosen: qualified and unqualified visitors guide. The role of a visitors guide is not only to handle or drive the boat but also to provide information to the visitors and give an explanation about the features of Kenyir Lake. The second attribute is safety equipment (SAFE). Two levels are chosen: adequate and inadequate. The safety equipment includes the equipment that already existed in the boat house, for instance safety jackets, buoys, medicines and others. The third attribute is communication system (COMM). Two levels are chosen: no coverage and coverage exists. A communication system is important to make sure visitors that stay at the lake can maintain connection with the outside world, especially in the case of emergency.

The other attribute is the package of activities (ACTV). Three levels are chosen: normal, premium and super. The normal activities offered by boat house operators are visiting the National Park, Bewah Cave, Lasir Waterfall, Kelah Sanctuary and fishing. The premium package activity includes normal package with one additional activity, while the super package activity includes normal package with two additional activities. The measurement of the ecotourism service value in this study is simply using the extra package price (EPP) of the boat house services as a monetary attribute. The lowest price per night for one boat house operator is RM1000. Increasing the package's price of the boat house will allow a better quality of services, increasing the safety of the facilities, employment of a qualified visitors guide, availability of communication system coverage and visitors can also enjoy additional activities offered in the boat house package. Four levels are chosen: no increase in package price, increase by 10%, increase by 20% and increase by 30%. However, among all selected variables, four variables that were expected to have a positive sign are qualified visitors guide, adequate safety equipment, coverage for communication system and additional package of activity. These variables are expected to have a positive impact on respondents' utility. Extra package price variable is expected to have a negative impact on the

respondents' utility because it decreases disposable income for other goods or services during their visit and therefore the expected sign will be negative.

Table 2
Attributes, levels and variables used in the study for House Boat Service

Attribute and Levels	Variables	Priory Expectation
Visitor Guide (NG)		
a. *No nature guide*	*VG 1*	+ ve
b. Licensed nature guide	VG 2	
Safety equipment (SAFE)		
a. *Adequate safety equipments*	*SAVE 1*	+ ve
b. Inadequate safety equipments	SAVE 2	
Communication system (COMM)		
a. *No coverage*	*COMM 1*	+ ve
b. Coverage exists	COMM 2	
Package of activities (ACTV)		
a. *Normal activity packages*	*ACTV1*	+ ve
b. Premium activity packages	ACTV 2	
c. Super activity packages	ACTV 3	
Extra Package Price (EPP)		
a. 10% increase from average EPP	10%	- ve
b. 20% increase from average EPP	20%	
c. 30% increase from average EPP	30%	

Italic: Status Quo

2.3 Data Collection

The experimental survey was conducted at Kenyir Lake from January to April 2012 with the total sample comprised of 285 visitors which randomly interviewed during their staying in the boat house. The question design was to choose a set of boat house service attributes related to the study site. The attributes used to describe the alternatives in each choice set should be relevant to the policy making process and must have meaning to the people who will answer the questionnaire (Bennett and Blamey, 2001). In this case, finally, five boat house attributes were selected and applied a series of multiple choices to respondents. Each choice of set had three alternatives; house boat ecotourism service options one and two are the alternatives and option three as a status quo option. The status quo option was provided for respondents who do not want to change for the service options as described.

Table 3 shows three service options of the boat house from which you will be asked to choose the most desirable option. For example, if you choose the service from option 1 in preference to service from option 2 that would mean you are happy to pay a 30% increase instead of a 10% increase in the package price of a boat house in order to have a qualified visitors guide, adequate safety equipment, coverage for a communication system and a normal activity package. If you choose the service from option 2 you will get an unqualified visitors guide, possibly inadequate safety equipment, no coverage for a communication system, a premium activity package, but will only have to pay a 10% increase rather than a 30% increase.

Table 3
Example of a set of choices as presented to participants

Attributes	OPTION 1	OPTION 2	STATUS QUO
Visitors Guide	Qualified	Unqualified	Unqualified
Safety Equipment	Adequate	Inadequate	Inadequate
Communication system	Coverage exist	No coverage	No Coverage
Package of Activity	Normal	Premium	Normal
Extra Package Price	30%	10%	RM1000
I Choose:	√		

3. 0 Results

3.1 Sample Characteristics

Table 4 presents the result of the socio-economic profile of the respondents. There were 285 respondents in the survey. Out of the total number of respondents, 149 (52.3%) were male and 136 (47.7%) were female. The respondents included visitors aged between 19 and over 50 years old. From the table it can be seen that 196

(68.8%) of the respondents have a number in the household of between 1 to 5, followed by between 2-10 (29.1%) and 11-13 (2.1%). The category of education level showed that 42.8 % of the respondents attained secondary education level while diploma, university degree and pre-university formed 20.0 %, 16.8 % and 13.3 % respectively of the sample. The lowest education level was primary school with 0.7 % while the highest education level, namely PhD and Master level showed 6.4 %.

From the results it can be seen that the majority of visitors that come to Kenyir Lake has a high level of education. In terms of profession, most of the respondents are businessman (23.5%) followed by service workers (17.5%) and housewives (14.7%) while professional and technician, and administration and management, showed the same percentage (13.7%). Sales workers indicated 9.8 % and the lowest result was for labour at 7.0 %. For the income levels, the majority of visitors (37.5%) earned a monthly income per household of between RM 1,001-RM 2,000. This was followed by the income group of less than RM 1,000 (31.2%), followed by groups RM 2,001-RM 3,000 (16.8%), RM 4,001 and above (8.2%) and between RM 3,001-RM 4,000 (6.3%). Normally, respondents who earn a higher income are willing to pay a higher price for extra package.

Table 4
Socio economic characteristics of the sample at Kenyir Lake

Characteristics	Frequency	Percentage
Gender		
Male	149	52.3
Age		
Less than 20 year	21	7.4
21-30 year	166	58.3
31-40 year	56	19.6
41-50 year	34	11.9
More than 51 year	8	2.8
Education Level		
Primary school	2	0.7
Secondary school	122	42.8
Pre-University	38	13.3
Diploma	57	20.0
Degree	48	16.8
Higher Degree	18	6.4
Individual Monthly Income		
Less than RM 10000	273	60.9
RM 1001 – RM2000	104	23.2
RM 2001 – RM3000	30	6.7
RM 3001 – RM4000	22	4.9
More than RM 4001	19	4.2
NGO Member		
No	277	97.2
Number in Household		
1-5	196	68.8
2-10	83	29.1
11-13	6	2.1

3.2 Conditional Logit

Table 5 presents the estimation results for the simple conditional logit model. The parameters of the model are generally in accordance with the priori expectation. The variables TG2, SAFE2, COMM2 and ACTV2 were significant at the 1% level with the correct expected sign. ACTV3 also had the correct expected sign, but it was not statistically significant. This means that the respondents prefer less activities rather than additional package activities, namely a super package activity. EPP was significant at the 1% level and with an expected negative sign. This indicates that as the package price for the house boast increases, respondents are less likely to contribute because of the decrease in the utility level.

In the interaction model, the interaction variables were included but only the significant variables are presented, except for the main attributes. This interaction model which included socio-economic variables and main attributes in the model had a positive influence on the model fit. There were five socio-economic variables included in the model; age, education, income, number in the household and gender. The included interactions created rich information about particular influences of choice for every level incorporated into the model (Mohd Rusli *et al.,* 2009). The entire interaction model was compared with the simple model and the log-likelihood ratio value was found to be higher compared to the simple model. Improvement of the model was also evidenced by the increase in Pseudo-R^2 from the simple model to the interaction model. These indicated that the interaction

model was a more accurate model.

In the final model, the log-likelihood ratio increased from -1415.38 to -1390.49, the Pseudo-R^2 increased from 0.095 to 0.111, and the adjusted R^2 increased from 0.094 to 0.107, implying a more accurate model compared to the simple version. The increase in Pseudo-R^2 implied that in the expanded model, the proportion of choice increased compared to the simple model (Kaffashi *et al.,* 2011). For the primary attributes, there were four variables that were significant in this model (SAFE2, ACTV2, ACTV3 and EPP). In a comparison of this model with the previous simple model, the COMM2 and ACTV3 variable have been changed to a negative sign for this model. Meanwhile, the variables TG2 and COMM2 tended to be insignificant, but ACTV3 tended to be more significant compared to the simple model. This indicates that there are strong relationships affected by the interaction variables with respect to the primary attributes (Mohd Rusli *et al.,* 2009).

The sign of SAFE2 was positive which was in agreement with the a priori expectation, similar to the simple model, and was significant at the 1% level. The positive sign implied that an adequate amount of safety equipment installed on a boat house can have a positive impact on utility. In addition, the sign for ACTV2 was also positive and in agreement with the a priori expectation, similar to the simple model and was significant at the 1 % level. The positive sign implied that the utility increased with an increase in additional package activities offered by the boat house operator. Visitors preferred to enjoy one more additional activity rather than the activities that are already a part of the normal package. The coefficient of ACTV3 was negative and significant at the 5% level indicating that respondents did not prefer too many additional activities offered in the boat house package. All interaction variables were significant at the 5% level and higher, except for ACT2-INC and SAFE2-HHN. Age variables, TG2-AGE and ACT3-AGE were positive and significant in relation to the visitors guide services and additional super package activities offered by the boat house operator.

However, negative signs resulted by providing adequate safety equipment (SAFE2-AGE) and for the additional premium activity package (ACT2-AGE) offered by the boat house operator. The positive sign for the age coefficients for the visitors guide services indicated that the older generation had a greater preference than the younger generation in getting a qualified visitors guide. Meanwhile, the positive sign for the age coefficient for the super package activity indicated that older generation prefer to have two more additional activities than the younger generation who are satisfied with the existing activities offered. The negative sign coefficient for SAFE2-AGE implied that younger generation prefer adequate safety equipment in the boat house than the older generation, while the negative sign coefficient for ACT2-AGE implied that younger generation support one more additional activity in the package of activities that were offered on the contrary with the older generation.

The positive sign of SAFE2-EDU indicated that the higher educated respondents give greater support for installing adequate safety equipment in the boat house. The income variable was significant with a positive sign for the interaction with the level 2 of the activity package in the ACT2-INC variable. This indicated that the respondents with a higher income support one more additional activity in the premium activity package rather than respondents with a lower income level. The negative sign coefficient for SAFE2-HHN implied that respondents with a large number in the household less prefer the provision of adequate safety equipment in the boat house compared to respondents with a small number in the household. The significant positive sign on the gender variable for the interaction with a communication system at level 2 in the COMM2-GEN variable indicated that men have more interest than women in increasing the quality of communication services from a no coverage situation to a position where coverage exists.

Table 5
Conditional Logit Simple and Interaction models

Variable	Conditional Logit	
	Simple Model	Interaction Model
TG2	0.850*** (0.191)	0.145 (0.373)
SAFE2	1.229*** (0.436)	0.814*** (0.625)
COMM2	0.351*** (0.106)	-0.304 (0.206)
ACTV2	0.985*** (0.2625	1.572*** (0.375)
ACTV3	0.182 (0.277)	-0.919** (0.463)
EPP	-0.052*** (0.019)	-0.056*** (0.019)
TG2_AGE		0.024** (0.01)
SAFE2_AGE		-0.032*** (0.012)
ACT2_AGE		-0.021** (0.008)
ACT3_AGE		0.035*** (0.011)
SAFE2_EDU		0.054*** (0.019)
ACT2_INC		0.000* (0.000)
SAFE2_HHN		-0.037* (0.019)
COMM2_GEN		0.444*** (0.118)
Log likelihood Pseudo-R^2 Adjusted Pseudo-R^2 Number of observations	-1415.382 0.09 0.09 1425	-1390.49 0.11 0.10 1425

3.3 Marginal Value

The marginal rate of substitution indicates the WTP of respondents according to their (truly revealed) preferences (Siebert, 2008). In this section, it should be noted that the marginal values measured are in percentages (%) related to the extra package price at average price of RM1000. For instance in our study one of the attributes was visitors guide, so by dividing the β value of this attribute by the β value of price, this would show the average willingness to pay of the respondents to increase the quality of the visitors guide from the current level.

Table 6
Marginal Value for CL Simple and Interaction Models

Variable	Marginal Value	
	CL simple (%)	CL interaction (%)
TG2	16.32	2.58
SAFE2	23.58	14.41
COMM2	6.74	-5.38
ACTV2	18.69	27.83
ACTV3	3.49	-16.28

Table 6 shows the marginal value for both CL simple and interaction models. For example, marginal value calculated for TG2 from the simple model is 16.32 which indicate that each one of the unit that increase in visitors guide services has a marginal value of 16.32% in the extra package price, or respondents are willing to pay 16.32% increases in the extra package price to increase the visitors guide services from the current level.

Marginal value of TG2 for the CL interaction model is 2.58, lower than the simple model.
The marginal value for SAFE2 is 23.58 in the simple model. Respondents are willing to pay an increase of 23.58% in extra package price for the adequate safety equipment prepared in the boat house. In the interaction model, the marginal value for SAFE2 is 14.41, lower than the simple CL model. The marginal value for COMM2 is 6.74 in the simple model and -5.38 in the interaction model. The negative sign indicates that utility has been reduced. This means that each one of the unit that decrease in the coverage for communication system has a marginal value of 5.38% in extra package price for the interaction model.
The marginal value for ACTV2 is 18.69 in the simple model and 27.8 in the interaction model. For the simple CL model, respondents are willing to pay an increase of 18.69% in extra package price for one additional activity offered in the premium package of activity meanwhile in the interaction model respondents are willing to pay an increase of 27.83% in extra package price in order to enjoy one additional activity in premium package. The variable ACTV3 shows the positive marginal value of 3.49 in the simple CL model but it tends to be negative 16.28 in the interaction model. As a conclusion, the highest willingness to pay of the respondents for the CL simple and interaction models are SAFE2 (23.58%) and ACTV2 (27.83%) respectively.
The results also show that the adequate safety equipment installed in the boat house has the highest positive marginal value in simple CL, while the premium package activity has the highest positive marginal value in CL interaction model, which reveal the two main preferences of the respondents. Adequate safety equipment is important to protect our life and safety during vacation in the boat house. Furthermore, the respondents prefer one additional activity offered in the premium package activity. The marginal value results show that the two main preferences of respondents towards the boat house attributes were SAFE2 and ACTV2, followed by TG2 and COMM2. ACTV3 gave the lowest marginal value in simple CL and it tends to be negative in CL interaction model which means that the respondents prefer less activities rather than additional activities offered by super package.

4. Conclusions

The main objective of this study is to present the empirical analysis of the CE in order to estimate the visitors' preferences for boat house service attributes in Kenyir Lake. In the CL interaction model, there were four primary variables that were significant (SAFE2, ACTV2, ACTV3 and EPP). In a comparison of this model with the simple CL model, it can be seen that COMM2 and ACTV3 changed to a negative sign, TG2 and COMM2 tended to be insignificant, but ACTV3 tended to be significant compared to the simple model which reveals that there are strong relationships affected by the interaction variables with respect to the primary attributes.
From the marginal value results, it can be said that the adequate safety equipment (SAFE2) installed in the boat house and premium package activity (ACTV2) are most preferred by the respondents because they are willing to pay higher for both variables in the extra package price and this is followed by TG2 and COMM2 variables. In order to fulfil the visitors' satisfaction and maintain the demand for the boat house services in the future, this information is very significant and useful to the boat house operators and Kenyir Lake manager as a guide to improve their management from the current status quo level to the better service provision. The expansion of the new Mixed Logit model by using the other possible alternatives could be considered for the future study.

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