Exploring Preference Heterogeneity and Willingness to Pay for Tourist Facility Attributes in Kenyir Lake, Malaysia

Wan Norhidayah W Mohamad[a]
Universiti Putra Malaysia

Tareq Mzek[b]
Universiti Putra Malaysia

Zaiton Samdin[c]
Universiti Putra Malaysia

Bakti Hasan-Basri[d]
Universiti Utara Malaysia

Abstract: Natural environments with great recreational value can potentially support tourism, conserve natural areas and prevent environmental damage. However, visiting recreational destinations depends on several motivations related to visitors' preferences. Therefore, this study aims to identify the heterogeneity of Kenyir Lake, Malaysia, visitors' preferences and their willingness to pay (WTP) for tourist facility attributes. The choice experiment method has been widely used for economic valuation, and the latent class model can capture the heterogeneity of preferences by characterising respondents in various groups of preferences. The outcome of this study revealed heterogeneous preferences in two classes. The first class represented 91.3% and the second class represented 8.7% of respondents. Moreover, this study's respondents showed positive WTP values for most attributes. However, the most preferred attribute was superior toilet service, with a WTP estimation of RM7.63 in Class 1. While in Class 2, the most preferred attribute was new jetty construction with a WTP estimation of RM1.99. The findings of this study can assist policymakers in implementing more effective policies as it has provided detailed information about visitors' preferences for tourist facility attributes in Malaysia.

Keywords: Willingness to pay, choice experiment, preferences, heterogeneity, recreation
JEL classification: Q51, C25

[a] School of Business and Economics, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia. Email: w_norhidayah@upm.edu.my (Corresponding author)
[b] School of Business and Economics, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia. Email: TAREQ-UPM@hotmail.com
[c] School of Business and Economics, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia. Email: zaisa@upm.edu.my
[d] School of Economics, Finance and Banking, Universiti Utara Malaysia, 06010, Sintok, Kedah, Malaysia. Email: bakti@uum.edu.my

Article Info: *Received* 31 May 2022; *Revised* 22 November 2022; *Accepted* 23 November 2022
https://doi.org/10.22452/MJES.vol59no2.4

1. Introduction

Recreation is an essential activity that provides immeasurable value and benefits to people. These benefits include being physically active, improving the quality of life, increasing social interactions and enhancing knowledge (Boman et al., 2013; Surat, 2018). The loss of open green spaces and rapid urban development has increased and recreation in natural parks has become necessary for people's physical and mental health (Cetin & Sevik, 2016). Moreover, recreational parks built in natural environments can potentially support tourism and play an important role in conserving natural areas, such as wetlands and forests and preventing environmental damage (Ferretti-Gallon et al., 2021).

Choosing recreational destinations relies on the motivations for visiting, the availability of tourist attractions (AlKahtani et al., 2015) and the attraction and availability of the basic infrastructure provided at a park (Feng, 2017). Appropriate recreational park facilities (e.g., toilets, transportation services, playgrounds and trails) are key to encouraging physical activities. Therefore, increments in the number of a park's visitors are related to well-maintained, aesthetically attractive and safe facilities (Cheng et al., 2019). Moreover, although park settings motivate physical activities in general, researchers have discovered that particular recreation facilities, such as trails, sports facilities and playgrounds encourage physical activity more efficiently (Calogiuri et al., 2016; Fraiz et al., 2020).

Parks have mostly been designed and built without considering visitors' preferences, especially their primary facilities, which are important for visitors' comfort. Therefore, understanding natural park visitors' preferences could provide useful information for park managements to create more comfortable environments. A well-planned park that takes into account the preferences of the public will provide a lot of benefits. Such understanding enables prioritising resource allocation decisions for new facilities or upgrading the current facilities to offer better services (Hasan-Basri et al., 2015).

However, the demand for a product or service is influenced by several factors. Such factors include price, consumer tastes and preferences, the level of income of the consumer and the quality of the product. In addition, the demand for site visits is related to the quality and attributes of a site (Fraiz et al., 2020). Since the creation and upgrading of recreational facilities and services aim to provide visitors with an enjoyable recreational experience, it is important to understand the values that visitors prefer, impacting their satisfaction and welfare.

The demand curve approach can provide welfare measures in economics. Estimating the demand curve can be divided into two techniques: stated preference (SP) and revealed preference (RP). The main differences between the SP and RP are the data's origin and the data collection method. Revealed preference techniques include respondents' willingness to pay (WTP) value for goods and services by examining their actual or observed behaviour in existing markets or in the consumption of the product itself. In other words, the RP data reflects the actual choices of the respondents. The most well-known RP techniques are the travel cost method (TCM) and the hedonic pricing method (HPM).

In contrast, SP techniques are questionnaire-based and collect data through surveys by presenting the respondents with hypothetical choice situations. The SP's two main methods are the contingent valuation method (CVM) and the choice experiment (CE) method. These methods focus on understanding consumers' demand for goods and services, especially when they are not traded in the market (Sriarkarin & Lee, 2018). Nevertheless, SP techniques have become the prevalent mechanism to identify respondents' preferences for non-market goods and services. Specifically, the CE method has become more popular than the CVM as it provides more useful information in the environmental valuation (Adamowicz et al., 1998).

The CE model can be estimated by using the conditional logit model (CLM), mixed logit model (MXL) and latent class model (LCM) (Bateman et al., 2002). However, the CLM has some limitations concerning representing choice behaviour (Train, 2003). The MXL obviates the CLM's limitations and captures the presence of unobserved heterogeneity. Meanwhile, the LCM indicates the heterogeneity of preference by characterising respondents in various groups of preferences (Tibesigwa et al., 2020; Tsai & Chen, 2019).

The LCM has been used to estimate preference heterogeneity in various fields. Such fields include quality changes in water recreation (Tienhaara et al., 2021), understanding the recreational behaviour of forest visitors (Skov-Petersen et al., 2021), management in urban wetland parks (Yang, 2021), recreational ecosystem services in developing cities (Tibesigwa et al., 2020), diving site conservation (Emang et al., 2020), recreational fisheries (Arlinghaus et al., 2020), wildlife viewing activities in recreation areas (Kubo & Shoji, 2016), tourist activities and the pressure on ecosystems (León et al., 2015) and the recreational attributes and services of public parks (Hasan-Basri et al., 2015).

The LCM shows superiority in determining the heterogeneity of respondents' preferences in different classes (Tibesigwa et al., 2020; Tienhaara et al., 2020; Tsai & Chen, 2019). Thus, this study applies the CE method to consider preferences heterogeneity on tourist facility attributes using LCM at a recreational site. Moreover, an evaluation of visitors' preferences for tourist facility attributes was conducted to inform policymakers about the importance of considering visitors' preferences when providing facility attributes. The outcome of this study has provided policymakers with detailed information about visitors' preferences. Thus, it will assist in planning and implementing effective policies to improve recreational services.

This paper is organised into six sections. Section 2 discusses the choice of the study site. Section 3 explains the methodological approach used to explore preference heterogeneity and willingness to pay using the choice experiment method. Section 4 presents the main findings from the analyses, and section 5 presents a discussion. Lastly, section 6 concludes with policy implications.

2. Case Study of Kenyir Lake Recreational Area

Kenyir Lake is one of Malaysia's famous ecotourism sites. It offers a broad range of environmental goods and services to visitors. The lake contributes significant economic benefits to the country (Osnin & Abdul Rahman, 2018; Osnin et al., 2020). It is located in the west-central area of Terengganu, Malaysia (Figure 1). The surface area of Kenyir

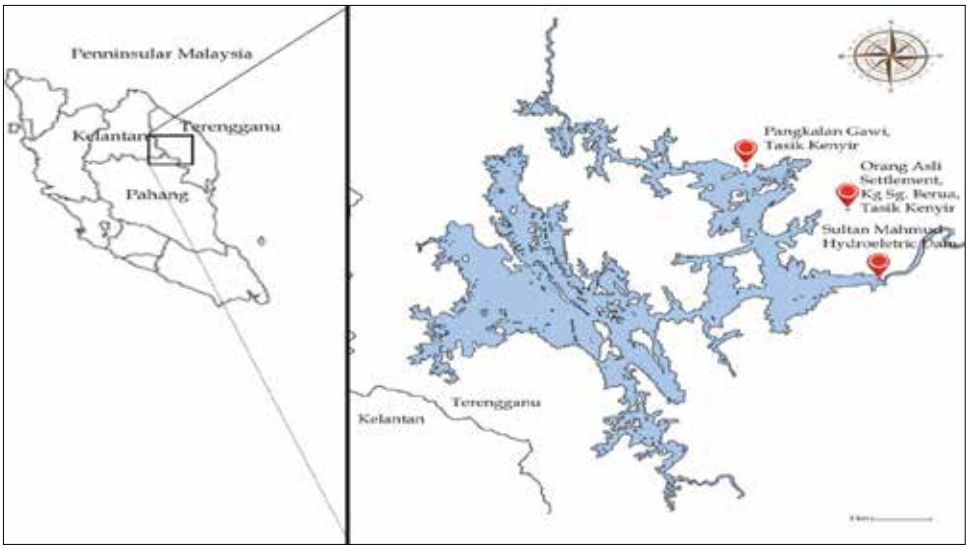

Figure 1. Location of Kenyir Lake
Source: Rahman et al. (2021).

lake is 260 km^2 and it is one of the two major lakes in Peninsular Malaysia. Kenyir Lake contains 340 small islands and is surrounded by some of the world's oldest tropical rainforests (Osnin & Abdul Rahman, 2018). Hundreds of species of wildlife, fish, exotic birds, flora and fauna have been identified as living here for thousands of years, which makes it a home for nature and ecotourism lovers.

Pengkalan Gawi or Gawi jetty, is the lake's main entry point (Figure 1). The jetty provides visitors with several recreational facilities and services. The facilities available include a tourist information centre, toilets, car parks, a resting hut, the main jetty and restaurants (Figure 2). The number of visitors who visited the lake reached 706,222 in 2015, with an average increase of 100,000 visitors per year (Osnin et al., 2020). In 2017, the number of visitors reached 808,336 (Ketengah, 2019). Besides, 78,251 visitors visited the "Festival Kenyir 2019" for four days, from 25 to 28 July 2019, to promote Kenyir Lake as a tourist destination in Malaysia (Ketengah, 2019). Moreover, the central Terengganu development authority has targeted 1 million visitors by 2021 (Ketengah, 2021). Such a substantial increase in visitors will exert great pressure on the lake's facilities, mostly at the main entry point.

In addition, based on a visitors' satisfaction survey conducted by Lembaga Kemajuan Terengganu Tengah (KETENGAH) in 2014, visitors were less satisfied with the quality of facilities at the jetty. This outcome was due to poor maintenance of the facilities, especially surrounding the jetty. Moreover, there has been a financial constraint as money to maintain the facilities comes from the federal government. Thus, the government has not fully covered the limited financial allocation and operational costs of the tourist area even though the government is responsible for providing important facilities as a public good that can be freely used. Implementing an entrance

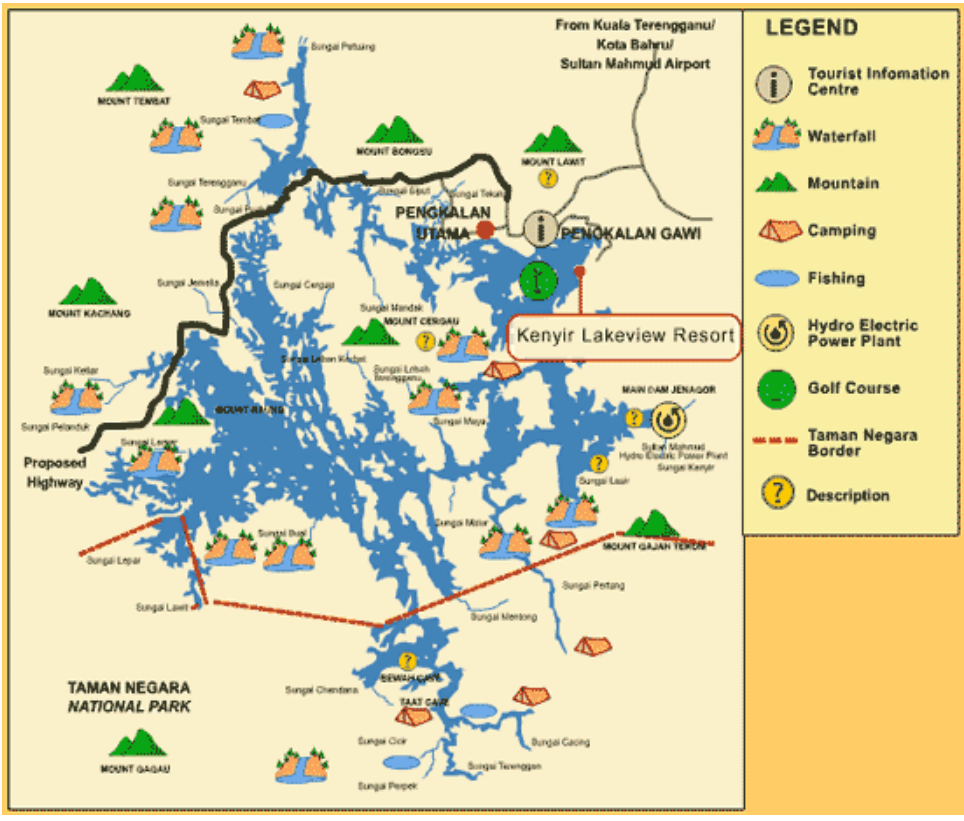

Figure 2. Recreational Attractions at Kenyir Lake
Source: Adapted from https://tasikkenyir.blogspot.com/search/label/Kenyir%20Lake

fee could be considered an alternative to cover the cost of operations at Kenyir Lake. Thus, the entrance fees could be used to provide better-quality facilities for visitors.

3. Material and Methods

The CE method is the most commonly used method to measure economic benefits (Bateman et al., 2002). It has a strong theoretical foundation based on the characteristic theory of value (Lancaster, 1966), which suggests that the utility derived from goods and services are determined by the attributes of goods and services. Thus, the utility of goods and services can be expressed as a function of their attributes (Kotu et al., 2022). On the other hand, the random utility theory (RUT) by McFadden (1974) can measure an individual's preferences for various aspects of goods and services. The RUT assumes that not all of a consumer's choice decisions are directly observed by researchers. This situation means that when the consumers are choosing from different alternatives to maximise their utility, there are unobservable preferences which consumers only know, and the researcher treats them as random variables. Therefore, under the RUT,

the utility function for a representative consumer can be divided into observable and unobservable variables, as shown in Equation 1.

$$U_n = V_n + \varepsilon_n \quad (1)$$

where U_n is the utility from a good (n), V is the observable variable, and ε is the random unobservable variable.

The attraction of this method lies in an analyst's ability to estimate values for changes in several attributes along with multiple changes in attribute levels (Bateman et al., 2002). Respondents in the CE method are offered to choose from different choice situations described by a combination of several attributes and their levels in a hypothetical situation. They should make trade-offs between hypothetical situations and select the choice that maximises their utility. The responses to the choices are then directly translated to marginal WTP values through the estimation of the CE model. Bateman et al. (2002) provided guidelines for the CE design of the present study, and the steps for implementing the CE model are explained in the following sections.

3.1 Identifying the Attributes and their Levels

The attributes were selected based on previous recreational site studies, which have examined similar contexts (Adamowicz et al., 1994; Alpizar et al., 2003; Christie & Hanley, 2008; Hasan-Basri & Karim, 2016; Juutinen et al., 2011; Kaffashi et al., 2015; Yacob et al., 2009). For example, Hasan-Basri and Karim (2016) applied the CE model to determine public preferences for recreational parks' attributes in Malaysia. The chosen attributes for this study comprised recreational facilities, amenities, natural attractions, informational attributes and price. The LCM results revealed that recreational facilities were the most preferred attribute by visitors, followed by amenities, natural attractions and information. Meanwhile, socio-demographic factors, such as gender, education level and ethnicity influenced the class membership choice in the LCM. For example, in class 2, most respondents were male and had a university degree. Yeh et al. (2020) also revealed that respondents' attitudes and trust significantly affected class membership in the LCM.

However, to define the most relevant attributes for Kenyir Lake, the previously mentioned studies and proposed attributes were discussed in an online meeting with the tourism and development manager from the Lembaga Kemajuan Terengganu Tengah (KETENGAH) department in two focus group meetings. The focus group meetings were carried out before the pilot survey to refine the levels of the selected attributes and obtain feedback concerning the questionnaire.

Accordingly, six attributes were chosen for use in this study and are shown in Table 1. The first attribute was the toilet facilities provided at the main entrance point. Under current management, only ten conventional and two accessible toilets are provided for visitors. However, with the lake's increasing number of visitors every year, the provision of toilets should address the visitors' needs regarding availability and accessibility. The second attribute was the jetty, which consists of two levels, one jetty or two jetties. Currently, the available jetty cannot accommodate the increasing number of visitors who need to join a long queue while waiting for houseboats and speedboats. Having

Table 1. Kenyir Lake facilities attributes and their levels

Facilities and expected signs	Status quo	Levels
Toilet (+)	Basic: 10 conventional toilets + two accessible toilets	Basic Medium: Basic + shower room Superior: Medium + baby changing room
Jetty (+)	One	One Two
Car Park (+)	30 slots	30 slots 100 slots
Tourist Information Centre (+)	Basic: Brochure, pamphlet, information board	Basic Medium: basic + video presentation Superior: medium + tourist information officer
Playground (+)	Small	Small Big
Entrance fee (-)	RM0 per person	RM0, RM1, RM2.50, RM5, RM7.50, RM10

another jetty would separate visitors into small groups and avoid crowding while waiting for boats.

The third attribute was the car park with two levels; there are 30 and 100 car park slots at the jetty. The fourth and fifth attributes concerned the service of the tourist information centre (basic, medium and superior) and the size of the children's playground (small and large). The entrance fee to the lake was the final attribute to be included in the CE model design. The entrance fee had six levels ranging between RM0 (the current situation) and RM10. Implementing an entrance fee system in Malaysia is not new since it has been applied to national parks and recreational forests to support the management and operation of parks. For example, the entrance fees at Redang Island Marine Park and Perhentian Park range from RM2 to RM5. Meanwhile, Taman Negara National Park imposes a RM1 entrance fee.

3.2 The Experimental Design

The SAS software package generated the range of choice cards used in this study. Thirty-six choice cards resulted from the D-efficient experimental design. Each questionnaire version consisted of six different choice cards. Figure 3 presents the sample of a choice card in the CE model questions. For example, in Figure 3, the visitors were given a choice between two alternatives with costs of RM7.50 and RM10. The trade-off concerns whether superior toilet service, one jetty, additional car park slots, a medium tourist information centre and a small playground would be accepted rather than basic toilet services, two jetties, fewer car park slots, superior tourist information centre (TIC)

Facilities	Option 1	Option 2	Status Quo
Toilet	Superior	Basic	Basic
Jetty	One	Two	One
Car Park	100 slots	30 slots	30 slots
Tourist Information Centre	Medium	Superior	Basic
Children's Playground	Small	Large	Small
Entrance Fee	RM 7.50	RM 10	RM 0
Your Option	√		

Figure 3. Example of a choice card in the CE model questions

and a large playground. Moreover, before each choice card, the following statement was made, "suppose Figure 3 represents the scenarios of recreational facilities to be available in Kenyir Lake. Please tick (√) your preference in the box".

3.3 Sample Design and Implementation

The questionnaire was developed in English and Malay and was pre-tested to check the complexity of the questionnaire and if the questions were understandable and sufficient (Mariel et al., 2021). Moreover, a pilot study was conducted among visitors at Gawi Jetty in the first week of March 2016. Generally, the respondents could understand and complete the questionnaire within 20 to 25 minutes. However, several comments related to some questions were provided by respondents. Consequently, the final questionnaire was improved after considering the pre-test and pilot study comments.

The main surveys were carried out between March and May 2016 during afternoons, between 1.00 p.m. and 6.00 p.m. each weekday. Afternoons were the best time to approach visitors because, during this time, most of them had finished enjoying their activities. During weekends and public holidays, the surveys were carried out earlier and for a longer period, between 11.00 a.m. and 7.00 p.m. because the number of visitors was higher than on normal days. This study applied an intercept survey, and the visitors were randomly sampled. Face-to-face interviews were employed in the present study, following the recommendation of the panel report of the National Oceanic and Atmospheric Administration (NOAA) for gathering respondents' information (Portney, 1994). This survey type remains the most popular technique researchers apply in discrete CE applications (Christie et al., 2006; Hanley et al., 1998; Hensher & Greene, 2003).

Moreover, to determine the appropriate sample size, Pearmain et al.'s rule of thumb suggested that a sample size of more than 100 can provide a basis for modelling preference data for discrete CE designs (as cited in de Bekker-Grob et al., 2015), whereas Bennett and Blamey (2001) proposed the minimum sample size of 50 respondents for a sub-sample in the CE design. Thus, the present study followed both recommendations.

Collecting information from respondents involved several procedures. Firstly, potential respondents were approached at the Gawi Jetty area, and they were given a brief introduction concerning the purpose of the study. Then, potential respondents were asked for their permission to conduct the interview. If they agreed, the interview continued. Otherwise, other respondents were approached. A total of 192 respondents were interviewed. Some respondents failed to complete the questionnaire, and their responses were not included in the analysis. The discarded sample was 6.25% or 12 respondents of the total sample. Overall, visitors with no children were more likely to complete the survey. This outcome was because visitors who had commitments with their children were busy and were more hesitant to participate in the survey due to time constraints. Therefore, only 180 completed questionnaires were used in the final analysis.

3.4 Data Analysis

As mentioned previously, the theoretical basis for choice experiment analysis mainly follows the theory of value and the random utility theory, which has been well explained in Train (2003). Moreover, in CE, a respondent *n* chooses among a set of alternatives *J* in the choice set. Each alternative gives a certain level of utility to the respondent. Thus, the utility *U*, which respondent *n* obtains from the alternative *j* is U_{nj} and $j = 1,...,J$. This utility is known to the respondent but not to the researcher. However, the utility of choice consists of an observable component of the utility estimated by the researcher. The error term of the utility is unknown to the researcher. Therefore, the utility *U* of the respondent *n* of choosing an alternative *j* can be written as shown in Equation 2.

$$U_{nj} = V_{nj} + \varepsilon_{nj} \tag{2}$$

where U_{nj} is the utility obtained by respondent *n* from the alternative *j*, V_{nj} is the visible component of the utility estimated by the researcher, and ε_{nj} is the error term of the utility unknown to the researcher.

The derivation of LCM in this study was based on Swait (1994, 2006). Thus, the model was developed from a two-stage model: a choice model conditional on class membership and a class membership model. The utility function for respondent *n*'s choice, among *J* alternatives, assumed that the respondent belongs to class *s* and can be written as shown in Equation 3.

$$U_{nj|s} = \beta_s x_{nj} + \varepsilon_{nj|s} \tag{3}$$

where β_s is the class-specific coefficient vector, x_{nj} is the attribute vector of each alternative, and $\varepsilon_{nj|s}$ is the random component of utility for respondent *n* accordingly, under the assumption that the random error terms ε_{nj} are independently and identically distributed and follow a Type 1 extreme value distribution. Thus, the probability that alternative *j* is chosen by respondent *n* who belongs to class *s* is as shown in Equation 4.

$$P_{nj|s} = \frac{e^{\beta_s x_{nj}}}{\int J^{e^{\beta_s * nj}}} \tag{4}$$

Equation 4's model provides the first-choice model, conditional on class membership. Within class membership, the choice is characterised by the independence of irrelevant alternatives' properties inherent to the CE model.

Secondly, the class membership model was developed. The prediction of an individual's membership in a particular class was made using an unobservable latent class membership likelihood function (Y_{ns}) as shown in Equation 5.

$$Y_{ns} = \Gamma'_s Z_n + V_{ns}, s = 1,\ldots,S \tag{5}$$

where Γ'_s is a class-specific parameter, vector Z_n is the vector of individual respondent variables, for instance socioeconomics, attitudes or perception, that affect classification probabilities, and V_{ns} is the stochastic error term.

Assuming that the stochastic error terms V_{ns} are identically and independently distributed, the class assignment probabilities for class membership Q_{ns} is as shown in Equation 6.

$$Q_{ns} = \frac{e^{\Gamma'_s Z_n}}{\sum_s e^{\Gamma'_s Z_n}} \tag{6}$$

The products of the probabilities in Equations 4 and 6 were estimated concurrently through the latent class model, as shown in Equation 7, to develop a model that accounts for choice and class membership.

$$P_{njs} = P_{nj|s} \times Q_{ns} \tag{7}$$

Thus, the probability P_{njs} that respondent n chooses alternative j and belongs to class s are shown in Equation 8.

$$P_{njs} = \left[\frac{e^{\beta_s x_{nj}}}{\int J^{e^{\beta_s x_{nj}}}}\right] \times \left[\frac{e^{\Gamma'_s Z_n}}{\sum_s e^{\Gamma'_s Z_n}}\right] \tag{8}$$

Moreover, the marginal probability of observing respondent n in class s selecting alternative j is as shown in Equation 9.

$$P_{njs} = \sum_{s=1}^{S} \left[\frac{e^{\beta_s x_{nj}}}{\int J^{e^{\beta_s x_{nj}}}}\right] \times \left[\frac{e^{\Gamma'_s Z_n}}{\sum_s e^{\Gamma'_s Z_n}}\right] \tag{9}$$

Equation 9 describes the probability of choosing the alternative j which is equal to the sum over all latent classes s of the class-specific membership model conditional on class P_{njs} multiplied by the probability of being in the Q_{ns} class. The β values for every class and the probability of membership were estimated by simulation as described by Swait (1994).

Moreover, in a latent class model, the number of class s can be determined using various statistical tests. Such tests include the Akaike information criterion (AIC), Akaike information criterion three (AIC-3) and the Bayesian information criterion (BIC) (Campbell et al., 2011; Garrod et al., 2012; Tibesigwa et al., 2020; Tienhaara et al., 2020) where the model with the minimum information criteria value is preferred. The number of classes can also be determined by reflecting on the study's aims,

past research experience and the researcher's judgement. Furthermore, the welfare measures can be estimated using choice model data by calculating the marginal WTP values, also called "the implicit price", as shown in Equation 10. This measure helps to understand the impact of attribute changes on economics and also the implications for the associated policy.

$$WTP = -\frac{\beta_i}{\beta_{cost}} \tag{10}$$

where, β_i is the coefficient of any of the attributes in the model and β_{cost} is the price coefficient. The LCM model was estimated with the maximum likelihood function using the NLOGIT 4.0 software application, and the results are discussed in the following section.

4. Results and Discussion

4.1 Descriptive Statistics of Socio-demographic Characteristics

The total number of respondents was 180, the majority were males comprising 61.7% and 38.3% were females. Additionally, 40.6% of the respondents belonged to the 25–34 age group, followed by the 35–44 age group, comprising 28.3% of the total respondents as shown in Table 2. Moreover, most visitors had a high education level, with 37.2% holding a diploma, 34.4% holding an undergraduate and postgraduate degree, and only 3.4% having a minimum primary education. The results in Table 2 show that 68.9% of

Table 2. Visitors' socio-demographic characteristics

	Variable	(%) of Sample	Census
Gender	Male	61.7	51
	Female	38.3	49
Age Group	18 to 24	14.4	21.2
	25 to 34	40.6	25.8
	35 to 44	28.3	19.6
	45 to 54	10.6	15.8
	>55	6.1	17.6
Nationality	Local	98.3	91.6
	Foreign	1.7	8.4
Education	Primary school	3.4	
	Secondary school	14.4	
	Pre-university	10.6	
	Diploma	37.2	
	Undergraduate & postgraduate	34.4	
Monthly gross household income	<RM2000	10.5	
	RM2001 to RM4000	68.9	
	>RM4001	20.6	

Note: USD1 in 2016 equalled approximately RM4.
Source: Central Bank of Malaysia, 2022.

the respondents fall into the medium-income category with monthly incomes ranging between RM2001–RM4000, only 10.5% earned less than RM2000, while 20.6% of respondents were in the high-income category.

4.2 LCM Model Estimation

Discussion concerning the LCM results is divided into three sections. The first section determines the number of classes, the second discusses the LCM model estimation and visitors' preferences, and the third determines the visitors' WTP for the attributes.

4.2.1 Determining the Number of Classes

The results in Table 3 show that the pseudo-R^2 increased by 42.3% by moving from one class (0.262) to two classes (0.454) and slightly increased to 0.474 in the three classes model and 0.494 in the four classes model. This increment in pseudo-R^2 indicated the existence of heterogeneity in the data and revealed that it was possible to identify classes. However, it does not specify the number of classes. Therefore, the values of the information criterion AIC, AIC-3 and BIC were checked, and the information criterion with the lowest value would be preferred (Provencher et al., 2002). Based on Table 3, the results for the statistical information criterion based on the number of classes presented were not consistent with the AIC, and the AIC-3 criteria favoured the four classes, whereas the BIC criterion favoured two classes only.

Since there is no specific guidance to determine which criterion should be preferred, the information criterion (AIC, AIC-3 and BIC) was used to decide the number of classes. Therefore, this study identified the classes according to significant coefficients in different classes. The results showed that the number of significant coefficients decreased once the number of classes was increased from two to three. Therefore, the two-class model was chosen.

Table 3. A comparison of Pseudo-R^2, AIC, AIC-3 and BIC in the different classes

Number of classes	1	2	3	4
No. of parameters	8	17	26	35
AIC	1449.164	1329.18	1300.338	1270.614
AIC-3	2173.746	1993.77	1950.507	1905.921
BIC	1489.040	1413.92	1429.941	1445.079
Log-likelihood	-716.582	-647.59	-624.169	-600.307
Pseudo-R^2	0.262	0.454	0.474	0.494
No. of observations	1080	1080	1080	1080

4.2.2 Results for the LCM Model Estimation

The estimation of LCM employed in this study was:

$$V = \beta_1 \text{Toilet2} + \beta_2 \text{Toilet3} + \beta_3 \text{Jetty2} + \beta_4 \text{CarP100} + \beta_5 \text{TIC2} + \beta_6 \text{TIC3} + \beta_7 \text{PlayG2} + \beta_8 \text{Fee} + \beta_n Zn$$

where *Zn* denotes interactions between socio-demographic characteristics and the fee. The LCM was estimated using the maximum likelihood procedure, and the choice data exhibited heterogeneity of preferences for the attributes used in the study. This outcome can be seen from the estimated parameters differences in magnitude and significance. Class 1 represented 91.3% of the total sample, while Class 2 represented 8.7%. The profiling results suggested that most of the respondents in class 1 were male, aged 25 to 34 years old and had attained a diploma. While in class 2, the majority of the respondents were male, aged 25 to 44 years old and had attained secondary school as shown in Table 4.

Table 4. Descriptive statistics for the characteristics of each class

	Class 1 (%)	Class 2 (%)
Male	56	6
Female	35	3
Age: 18 to 24 years	13	1
Age: 25 to 34 years old	38	3
Age: 35 to 44 years old	26	3
Age: 45 to 54 years old	10	1
Age: 55 years old and above	4	2
Education: Primary school	2	1
Education: Secondary school	12	3
Education: Pre-university	8	2
Education: Diploma	36	1
Education: Undergraduate & postgraduate	33	2

Furthermore, the results of the LCM estimation showed the difference between respondents' preferences between Class 1 and Class 2 as shown in Table 5.

Table 5. LCM model estimation results

	Class 1		Class 2	
Attributes	Coefficient	t-statistic	Coefficient	t-statistic
Toilet2	1.410	10.915***	-0.441	-0.954
Toilet3	2.146	14.19***	0.796	1.816*
Jetty2	1.491	13.45***	1.241	3.770***
CarP100	1.485	12.615***	0.754	2.274**
TIC2	0.045	0.364	-0.325	-0.892
TIC3	0.411	3.419***	-1.079	-1.934*
PlayG2	0.519	5.292***	-0.963	-2.237**
Fee	-0.281	-11.83***	-0.622	-6.080***
Log-likelihood function: $LL(\beta_b)$		-647.59		
Log-likelihood: $LL(\beta_0)$		-1186.501		
Pseudo-R^2		0.454		
Adjusted pseudo-R^2		0.45		

Note: *** significant at 1%, ** significant at 5% and * significant at 10%.

The attributes in Class 1 were significant at the 1% level with the expected sign, except for medium tourist information service (TIC2), which was not significant. Nevertheless, the attributes in Class 2 varied as it showed a significance level of 1% for two jetties (Jetty2), 5% for one hundred parking slots (CarP100) and a big playground (PlayG2) and 10% for superior toilet facilities (Toilet3) and a superior tourist information service (TIC3). The fee parameters for both classes were statistically significant at a 1% level with an expected negative sign, which indicated an inverse relationship between the entrance fees and visitors' WTP. The higher the price, the lower the individual's willingness to pay.

The results indicated that respondents in Class 1 chose facilities that had both levels of toilet facilities (Toilet2 and Toilet3), two jetties (Jetty2), one hundred parking slots (CarP100), a superior tourist information service (TIC3) and a big playground (PlayG2). Meanwhile, in Class 2, respondents had positive preferences for superior toilet facilities (Toilet3), two jetties (Jetty2) and one hundred parking slots (CarP100). However, the respondents in Class 2 had a negative preference for a superior level of the tourist information centre (TIC3) and a big playground (PlayG2).

However, differences in age and education level can explain the difference in preferences between these two classes. For example, the difference in the significance level for toilet attributes between visitors in Class 1 and those in Class 2. Whereby in Class 1, both Toilet2 and Toilet3 were highly significant at the 1% level; in Class 2, Toilet2 was not significant, and Toilet3 was significant at a lower level (10% level). This outcome could be because Class 2 relatively contained more elderly visitors than Class 1. Older people would not prefer toilets with baby changing room facilities because they are less likely to have babies or prefer quiet facilities. Moreover, the TIC3 attribute was highly significant at 1%, showing a positive sign in Class 1 but significant at a lower level (10%) in Class 2 with a negative sign. This outcome could be because the respondents with a higher level of education in Class 1 had a sense of gathering knowledge and obtaining more information.

4.2.3 WTP Estimation

Willingness to pay can be interpreted as the maximum amount an individual is willing to pay to secure the benefit or worth of goods or avoid unwanted goods. The WTP for each attribute was calculated as the ratio of the attribute coefficients with the fee coefficient using the Wald procedure (Delta method) in the Nlogit 4 software application. Table 6 shows the WTP values (in Ringgit Malaysia) for the main attributes of the LCM. The WTP results revealed that the respondents in Class 1 had the highest WTP value of RM7.633 for superior toilet services, followed by RM5.302 for providing two jetties and RM5.283 for one hundred parking slots. In contrast, the highest WTP value in Class 2 was RM1.994 for providing two jetties, RM1.279 for superior toilet services and RM1.211 for providing one hundred parking slots.

5. Discussion

Generally, the findings revealed that visitors showed positive WTP for most attributes. Thus, the results indicated that the respondents realised the benefit they would obtain

Table 6. Results of the WTP estimation

	Class 1		Class 2	
Attribute	WTP	t-statistic	WTP	t-statistic
Toilet2	5.016	9.516***	-0.708	-0.933
Toilet3	7.633	13.120***	1.279	1.874*
Jetty2	5.302	13.770***	1.994	3.576***
CarP100	5.283	14.660***	1.211	2.381**
TIC2	0.161	0.360	-0.522	-0.900
TIC3	1.461	3.349***	-1.733	-1.895*
PlayG2	1.845	5.457***	-1.546	-2.120**

Note: *** significant at 1%, ** significant at 5% and * significant at 10%.

from implementing an entrance fee and accepted the proposed value. This finding was similar to a study by Ribet and Brander (2020), who explored the preferences and WTP for trail running races in Hong Kong country parks using a choice experiment. The outcome of their study showed that trail runners were willing to pay extra charges over race entry fees for the preservation of natural areas. In addition, the mean willingness to pay was between USD12 to USD24 for drinking water fountains, trail maintenance and biodiversity conservation. In addition, a study by Lal et al. (2017) revealed positive WTP values for recreational services and park entrance fees in Nyungwe National Park in Rwanda. The authors suggested that the potential revenue would help support Rwanda's nature-based tourism industry. Similarly, the revenue from future entrance fees to Kenyir Lake will support the improvement of services provided at the lake according to visitors' preferences.

Moreover, the results of the present study indicated the heterogeneity of visitors' preferences. The highest WTP estimation in Class 1 was for the Toilet3 attribute at RM7.633, followed by Jetty2 and CarP100 at RM5.302 and RM5.283, respectively. While in Class 2, the highest WTP estimation in the class was for Jetty2 with a WTP of RM1.994. This was followed by Toilet3 at RM1.279 and CarP100 at RM1.211. The outcomes of this study are in line with previous studies, which show the heterogeneity among visitors' preferences and their WTP for improving the services in recreational sites and the clustering of visitors concerning their preferences.

For example, Skov-Petersen et al. (2021) also showed heterogeneous preferences for recreational behaviour and assessed forest visitors' route preferences among visitors. In addition, a study by Yang (2021) showed visitors' heterogeneous preferences for conservation and park management in Xixi National Wetland Park in China. The study's findings revealed that biodiversity improvement was the most important attribute, followed by information-related facilities, cultural facilities and services. Moreover, the results indicated that the preferences were heterogeneous, and the average willingness to pay was between USD1.64 to USD3.35 for information-related facilities and USD1.83 to USD2.04 for cultural facilities and services. Finally, a study by Hasan-Basri et al. (2015) indicated that recreational facilities were the most preferred attribute for parks in Kuala Lumpur. The WTP for these attributes ranged from RM3.25

to RM39.96. Thus, the results indicated that visitors had a WTP of up to RM40.00 per visit if the facilities were improved.

However, the latent class analyses showed a relatively homogeneous sample where Class 1 consisted of 91.3% and Class 2 represented 8.7% of the total sample. This result was in line with the findings of Haegeli and Strong-Cvetich (2020). Their results indicated that the largest latent class consisted of 89% of the total respondents, followed by 6% for the second and 5% for the last classes. Accordingly, these two classes could be named according to the main factor influencing the class (e.g., age and education). Similarly, the results of a study by Tienhaara et al. (2021) highlighted the different classes in the population. Namely, summer house owners, tourists and locals made their decisions regarding the number of recreation visits based on different influences of visitors towards quality changes in water recreation in Puruvesi Lake in eastern Finland.

6. Conclusion

This study aimed to determine visitors' heterogeneous preferences and WTP using the LCM due to the lack of valuation estimates regarding recreational site attributes in Malaysia, particularly at Kenyir Lake, Terengganu and the inability of policymakers to deliver a more effective strategy for the improvement of recreational facilities. The results revealed that respondents were divided into two Classes. In Class 1, all values were highly significant with the expected sign. While in Class 2, only three attributes, namely, Toilet3, Jetty2, and CarP100, showed positive values. However, Class 1 held the highest WTP value of all attributes compared to Class 2.

The WTP estimates from this study have provided useful evidence to inform policymakers regarding how financial allocations can be optimally invested to improve tourist facilities based on the public's needs. In many cases, public park managers face difficulties in allocating a limited amount of money. As a result, it is common to find that financial allocations for public parks are invested unwisely. For example, some parks provide tourist facilities that do not meet the needs of the public. In the worst-case scenario, unneeded or unimportant facilities provided in parks might involve high maintenance costs that are not feasible to maintain in the long term.

Implementing an entrance fee is the most significant policy implication of this study. In other words, this study examined using private money to enhance the quality and quantity of the tourist facility attributes at Kenyir Lake. This situation allows policymakers to justify why private money should be invested in recreational sites. With the increase in the number of visitors every year, the KETENGAH department should consider imposing an entrance fee or other charges for visitors as a viable way of increasing revenues to cover the development and maintenance of tourist facilities at Kenyir Lake.

Thus, with the increasing number of tourists coming to the lake every year, providing toilet services with an additional bathroom and baby changing room is crucial. Moreover, the funds from the entrance fee could also be allocated to constructing a new jetty that would reduce congestion for boats and houseboats loading and unloading passengers while also considering increasing the number of car parking

slots to avoid congestion problems for visitors. Finally, this study has contributed to the existing literature by examining the heterogeneity of visitors' preferences. The heterogeneity results have important implications because they provide an accurate variation in outcomes between visitor preferences. Therefore, it is suggested to provide different facility types that meet visitors' demands and financial abilities. For example, provide a separate baby changing room to avoid noise that may affect elderly visitors, valet parking services for visitors willing to pay extra and a tour guide service for visitors who wish to get more information.

References

Adamowicz, W., Boxall, P., Williams, M., & Louviere, J. (1998). Stated preference approaches for measuring passive use values: Choice experiments and contingent valuation. *American Journal of Agricultural Economics, 80*(1), 64–75. https://doi.org/10.2307/3180269

Adamowicz, W., Louviere, J., & Williams, M. (1994). Combining revealed and stated preference methods for valuing environmental amenities. *Journal of Environmental Economics and Management, 26*(3), 271–292. https://doi.org/10.1006/jeem.1994.1017

AlKahtani, S.J.H., Xia, J.C., Veenendaaland, B., Caulfield, C., & Hughes, M. (2015). Building a conceptual framework for determining individual differences of accessibility to tourist attractions. *Tourism Management Perspectives, 16*, 28–42. https://doi.org/10.1016/j.tmp.2015.05.002

Alpizar, F., Carlsson, F., & Martinsson, P. (2003). Using choice experiments for non-market valuation. *Economic lssues, 8*(1), 83–110.

Arlinghaus, R., Beardmore, B., Riepe, C., & Pagel, T. (2020). Species-specific preference heterogeneity in German freshwater anglers, with implications for management. *Journal of Outdoor Recreation and Tourism, 32*, Article 100216. https://doi.org/10.1016/j.jort.2019.03.006

Bateman, I.J., Carson, R.T., Day, B., Hanemann, M., Hanley, N., Hett, T., Jones-Lee, M., Loomes, G., Mourato, S., Özdemiroglu, E., Pearce, D.W., Sugden, R., & Swanson, J. (2002). *Economic valuation with stated preference techniques: A manual*. Edward Elgar Publishing.

Bennett, J., & Blamey, R. (2001). *The choice modelling approach to environmental valuation*. Edward Elgar Publishing.

Boman, M., Fredman, P., Lundmark, L., & Ericsson, G. (2013). Outdoor recreation – a necessity or a luxury? Estimation of Engel curves for Sweden. *Journal of Outdoor Recreation and Tourism, 3–4*, 49–56. https://doi.org/10.1016/j.jort.2013.09.002

Calogiuri, G., Patil, G.G., & Aamodt, G. (2016). Is green exercise for all? A descriptive study of green exercise habits and promoting factors in adult Norwegians. *International Journal of Environmental Research and Public Health, 13*(11), Article 1165. https://doi.org/10.3390/ijerph13111165

Campbell, D., Hensher, D.A., & Scarpa, R. (2011). Non-attendance to attributes in environmental choice analysis: A latent class specification. *Journal of Environmental Planning and Management, 54*(8), 1061–1076. https://doi.org/10.1080/09640568.2010.549367

Cetin, M., & Sevik, H. (2016). Evaluating the recreation potential of Ilgaz Mountain National Park in Turkey. *Environmental Monitoring and Assessment, 188*, Article 52. https://doi.org/10.1007/s10661-015-5064-7

Cheng, L., Caset, F., De Vos, J., Derudder, B., & Witlox, F. (2019). Investigating walking accessibility to recreational amenities for elderly people in Nanjing, China. *Transportation Research Part D: Transport and Environment, 76*, 85–99. https://doi.org/10.1016/j.trd.2019.09.019

Christie, M., & Hanley, N. (2008). Evaluation of heterogeneous preferences for forest recreation in the UK using choice experiments. In E. Birol & P. Koundouri (Eds.), *Choice experiments*

informing environmental policy (220–248). Edward Elgar Publishing. https://doi.org/10.4337/9781848441255

Christie, M., Hanley, N., Warren, J., Murphy, K., Wright, R., & Hyde, T. (2006). Valuing the diversity of biodiversity. *Ecological Economics, 58*(2), 304–317. https://doi.org/10.1016/j.ecolecon.2005.07.034

De Bekker-Grob, E.W., Donkers, B., Jonker, M.F., & Stolk, E.A. (2015). Sample size requirements for discrete-choice experiments in healthcare: A practical guide. *The Patient – Patient-Centered Outcomes Research, 8*, 373–384. https://doi.org/10.1007/s40271-015-0118-z

Emang, D., Lundhede, T.H., & Thorsen, B.J. (2020). The role of divers' experience for their valuation of diving site conservation: The case of Sipadan, Borneo. *Journal of Outdoor Recreation and Tourism, 32*, Article 100237. https://doi.org/10.1016/j.jort.2019.100237

Feng, J. (2017). The influence of built environment on travel behavior of the elderly in urban China. *Transportation Research Part D: Transport and Environment, 52*(Part B), 619–633. https://doi.org/10.1016/j.trd.2016.11.003

Ferretti-Gallon, K., Griggs, E., Shrestha, A., & Wang, G. (2021). National parks best practices: Lessons from a century's worth of national parks management. *International Journal of Geoheritage and Parks, 9*(3), 335–346. https://doi.org/10.1016/j.ijgeop.2021.05.004

Fraiz, J.A., De Carlos, P., & Araújo, N. (2020). Disclosing homogeneity within heterogeneity: A segmentation of Spanish active tourism based on motivational pull factors. *Journal of Outdoor Recreation and Tourism, 30*, Article 100294. https://doi.org/10.1016/j.jort.2020.100294

Garrod, G., Ruto, E., Willis, K., & Powe, N. (2012). Heterogeneity of preferences for the benefits of environmental stewardship: A latent-class approach. *Ecological Economics, 76*, 104–111. https://doi.org/10.1016/j.ecolecon.2012.02.011

Haegeli, P., & Strong-Cvetich, L.R. (2020). Using discrete choice experiments to examine the stepwise nature of avalanche risk management decisions—An example from mountain snowmobiling. *Journal of Outdoor Recreation and Tourism, 32*, Article 100165. https://doi.org/10.1016/j.jort.2018.01.007

Hanley, N., MacMillan, D., Wright, R.E., Bullock, C., Simpson, I., Parsisson, D., & Crabtree, B. (1998). Contingent valuation versus choice experiments: Estimating the benefits of environmentally sensitive areas in Scotland. *Journal of Agricultural Economics, 49*(1), 1–15. https://doi.org/10.1111/j.1477-9552.1998.tb01248.x

Hasan-Basri, B., & Abd Karim, M.Z. (2016). Can benefits in recreational parks in Malaysia be transferred? A choice experiment (CE) technique. *International Journal of Tourism Research, 18*(1), 19–26. https://doi.org/10.1002/jtr.2028

Hasan-Basri, B., Abd Karim, M.Z., & Bakar, N. (2015). Willingness to pay for recreational attributes of public parks: A choice experiment approach. *The Singapore Economic Review, 60*(5), Article 1550048. https://doi.org/10.1142/S0217590815500484

Hensher, D.A., & Greene, W.H. (2003). The mixed logit model: The state of practice. *Transportation, 30*(2), 133–176. https://doi.org/10.1023/A:1022558715350

Juutinen, A., Mitani, Y., Mäntymaa, E., Shoji, Y., Siikamäki, P., & Svento, R. (2011). Combining ecological and recreational aspects in national park management: A choice experiment application. *Ecological Economics, 70*(6), 1231–1239. https://doi.org/10.1016/j.ecolecon. 2011.02.006

Kaffashi, S., Radam, A., Shamsudin, M.N., Yacob, M.R., & Nordin, N.H. (2015). Ecological conservation, ecotourism, and sustainable management: The case of Penang National Park. *Forests, 6*(7), 2345–2370. https://doi.org/10.3390/f6072345

Ketengah. (2019). *Laporan Tahunan Lembaga Kemajuan Terengganu Tengah (KETENGAH)*. https://www.ketengah.gov.my/laporan-tahunan-ketengah/

Ketengah. (2021, January 2). [BERNAMA] *Visit Kenyir year 2021 targets one million tourist arrivals*. Lembaga Kemajuan Terengganu Tengah. https://www.ketengah.gov.my/bernama-visit-kenyir-year-2021-targets-one-million-tourist-arrivals/

Kotu, B.H., Oyinbo, O., Hoeschle-Zeledon, I., Nurudeen, A.R., Kizito, F., & Boyubie, B. (2022). Smallholder farmers' preferences for sustainable intensification attributes in maize production: Evidence from Ghana. *World Development, 152*, Article 105789. https://doi.org/10.1016/j.worlddev.2021.105789

Kubo, T., & Shoji, Y. (2016). Demand for bear viewing hikes: Implications for balancing visitor satisfaction with safety in protected areas. *Journal of Outdoor Recreation and Tourism, 16*, 44–49. https://doi.org/10.1016/J.JORT.2016.09.004

Lal, P., Wolde, B., Masozera, M., Burli, P., Alavalapati, J., Ranjan, A., Montambault, J., Banerjee, O., Ochuodho, T., & Mugabo, R. (2017). Valuing visitor services and access to protected areas: The case of Nyungwe National Park in Rwanda. *Tourism Management, 61*, 141–151. https://doi.org/10.1016/j.tourman.2017.01.019

Lancaster, K.J. (1966). A new approach to consumer theory. *Journal of Political Economy, 74*(2), 132–157. https://doi.org/10.1086/259131

León, C.J., De León, J., Araña, J.E., & González, M.M. (2015). Tourists' preferences for congestion, residents' welfare and the ecosystems in a national park. *Ecological Economics, 118*, 21–29. https://doi.org/10.1016/j.ecolecon.2015.07.003

Mariel, P., Hoyos, D., Meyerhoff, J., Czajkowski, M., Dekker, T., Glenk, K., Jacobsen, J.B., Liebe, U., Olsen, S.B., Sagebiel, J., & Thiene, M. (2021). *Environmental valuation with discrete choice experiments: Guidance on design, implementation and data analysis*. Springer Nature. https://doi.org/10.1007/978-3-030-62669-3

McFadden, D. (1974). Conditional logit analysis of qualitative choice behavior. In P. Zarembka (Ed.), *Economic theory and mathematical economics* (pp. 105–152). Academic Press.

Osnin, N.A., & Abdul Rahman, N.S.F. (2018). Assessment and ranking of inland navigation practices in Malaysia: The case of Kenyir Lake. *Asian Journal of Shipping and Logistics, 34*(4), 289–296. https://doi.org/10.1016/j.ajsl.2018.12.002

Osnin, N.A., Rahman, N.S.F., & Fuad, A.F.A. (2020). Assessment of inland navigation at Kenyir Lake to safeguard societal wellbeing. *Journal of Sustainability Science and Management, 15*(1), 81–92.

Portney, P.R. (1994). The contingent valuation debate: Why economists should care. *Journal of Economic Perspectives, 8*(4), 3–17. https://doi.org/10.1257/jep.8.4.3

Provencher, B., Baerenklau, K.A., & Bishop, R.C. (2002). A finite mixture logit model of recreational angling with serially correlated random utility. *American Journal of Agricultural Economics, 84*(4), 1066–1075. https://doi.org/10.1111/1467-8276.00054

Rahman M.N.A., Lola M.S., Ramlee M.N.A., Abdullah M.T., & Ariffin M.S.A. (2021). Ecological balance towards sustainable index of Tasik Kenyir. In M.T. Abdullah, C.V. Bartholomew, & A. Mohammad (Eds.) *Resource use and sustainability of Orang Asli: Indigenous communities in Peninsular Malaysia* (pp. 215–224). Springer, Cham. https://doi.org/10.1007/978-3-030-64961-6_14

Ribet, S., & Brander, L.M. (2020). Willingness to pay of trail runners for sustainable country park use in Hong Kong. *Journal of Outdoor Recreation and Tourism, 31*, Article 100320. https://doi.org/10.1016/j.jort.2020.100320

Skov-Petersen, H., Jensen, F.S., & Jacobsen, J.B. (2021). Assessment of forest visitors' route preferences – Impact encounters across a range of forest environments. *Journal of Outdoor Recreation and Tourism, 36*, Article 100452. https://doi.org/10.1016/j.jort.2021.100452

Sriarkarin, S., & Lee, C.H. (2018). Integrating multiple attributes for sustainable development in a national park. *Tourism Management Perspectives, 28*, 113–125. https://doi.org/10.1016/j.tmp.2018.08.007

Surat, H. (2018). Evaluation of recreational preferences of visitors in National Park, Turkey. *International Journal of Ecosystems and Ecology Science (IJEES), 8*(1), 153–164.

Swait, J. (1994). A structural equation model of latent segmentation and product choice for cross-sectional revealed preference choice data. *Journal of Retailing and Consumer Services, 1*(2), 77–89. https://doi.org/10.1016/0969-6989(94)90002-7

Swait, J. (2006). Advanced choice model. In B.J. Kanninen (Ed.), *Valuing environmental amenities using stated choice studies: A common sense approach to theory and practice* (pp. 229–293). Springer, Dordrecht.

Tibesigwa, B., Ntuli, H., & Lokina, R. (2020). Valuing recreational ecosystem services in developing cities: The case of urban parks in Dar es Salaam, Tanzania. *Cities, 106*, Article 102853. https://doi.org/10.1016/j.cities.2020.102853

Tienhaara, A., Lankia, T., Lehtonen, O., & Pouta, E. (2021). Heterogeneous preferences towards quality changes in water recreation: Latent class model for contingent behavior data. *Journal of Outdoor Recreation and Tourism, 35*, Article 100386. https://doi.org/10.1016/j.jort.2021.100386

Tienhaara, A., Pouta, E., Lunner Kolstrup, C., Pinzke, S., Janmere, L., & Järvinen, M. (2020). Consumer preferences for riding lessons in Finland, Sweden and Latvia. *Journal of Outdoor Recreation and Tourism, 32*, Article 100141. https://doi.org/10.1016/j.jort.2017.06.002

Train, K. (2003). *Discrete choice methods with simulation*. Cambridge University Press.

Tsai, T.-H., & Chen, C.-M. (2019). Evaluating tourists' preferences for attributes of thematic itineraries: Holy folklore statue in Kinmen. *Tourism Management Perspectives, 30*, 208–219. https://doi.org/10.1016/j.tmp.2019.02.010

Yeh, C.-H., Hartmann, M., & Langen, N. (2020). The role of trust in explaining food choice: Combining choice experiment and attribute best-worst scaling. *Foods, 9*(1), Article 45. https://doi.org/10.3390/foods9010045

Yacob, M.R., Shuib, A., & Mamat, M.P. (2009). The application of choice experiments in the analysis of visitors' preferences for ecotourism facilities and services in Redang Island Marine Park. *International Journal of Business and Society, 10*(2), 39–52.

Yang, J. (2021). The heterogeneous preferences for conservation and management in urban wetland parks: A case study from China. *Urban Forestry & Urban Greening, 60*, Article 127064. https://doi.org/10.1016/j.ufug.2021.127064