A TRAVEL COST ANALYSIS OF THE VALUE OF ADVENTURE TOURISM OF KAMPAR, MALAYSIA

ZULKIFLI MOHAMED[1], SYAMSUL HERMAN MOHAMMAD AFAND[2,3]*, AHMAD SHUIB[3], SRIDAR RAMACHANDRAN[2,3] AND SYAMIMI MOHD ADAM[3]

[1]*Malaysia Tourism Promotion Board Head Office, 9th Floor, No. 2, Tower 1, Jalan P5/6, Presint 5, 62200, Putrajaya, Malaysia. [2]School of Business and Economics, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia. [3]Institute of Agricultural and Food Policy Studies, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.*

Abstract: Adventure tourism in Kampar, Perak, has been highlighted in the National Ecotourism Plan of 2016 - 2025. Relying on its natural resources, the local government has planned to allocate RM53.52 million to further develop Kampar as an adventure tourism hub. Despite the significant public budget for Kampar, the economic value of the natural resources in providing adventure tourism are not known. This study aims to assess the value of adventure tourism of Kampar by applying the travel cost model to justify the allocation of public funds for and government efforts towards the development of adventure tourism. The researchers distributed and collected 305 usable questionnaires from visitors participating in adventure activities in Kampar for three months, including on weekdays, weekends, public holidays and school holidays. Multiple regression analysis showed that the travel cost negatively influenced the number of annual visits to Kampar. Another variable, service quality, was found to have a positive relationship with the number of annual visits, suggesting that excellent services offered by tour operators increased participation in adventure activities. Consumer surplus is estimated at RM452.48 per annual visit, while the economic value of adventure tourism resources in Kampar is estimated to be RM20,064,320.64 for 2016. This estimation addresses a market failure situation of a niche market in the tourism sector.

Keywords: Ecotourism, non-market valuation, travel cost method, river recreation, caving.

Introduction

There are many perspectives of Adventure Tourism (AT) in literature. The Adventure Travel Trade Association views AT as any tourist activity that include any two of the three following components, which are physical activities, cultural exchange or interactions, and engagement with nature (ATTA, 2015). In defining AT, several aspects were defined by several authors, with some suggesting up to six criteria (Sand & Gross, 2019). These include Ewert (1989) and ATTA (2013), who proposed three criterea, Schleske (1977) proposed four, while Sung *et al.* (1996) proposed six. Despite the variety of AT definitions, all the authors included the elements of risk and uncertainties (Rantala & Rokenses, 2018).

AT has so far not been an analytical concept, but rather a category examined by researchers from different backgrounds (Sand & Gross, 2019). But research in this field has gained momentum and the number of publications on the subject have risen over the last couple of years, especially since the 1990s (Rantala & Rokenses, 2018). Most AT studies focuses on management issues, safety and risks, visitor guidance, marketing, as well as social aspects, such as conflicts of use, psychological aspects, like thrill, behaviour, and even to theoretical, such as categorising adventure travellers (Sand & Gross, 2019).

Studies to put value on the resources for AT is still lacking. These kinds of studies are significant since AT is generally conducted in nature. The sustainability of AT relies on the condition of its setting (Buckley, 2011). Under the total economic value framework, the value of a natural resource is categorised into market

and non-market values (Matthew *et al.,* 2019a). In many situations, the utilisation of natural resources is market-driven since the assessment of the non-market value of natural resources is still lacking. Such a situation could lead to market failure, where decisions are taken without proper knowledge of the value of the resources. Non-market economic valuation techniques are well-known approaches in attending to the market failure of tourism consumption of natural resources.

AT is one of the fastest growing sectors its appeal among mainstream mass tourists is expanding (UNWTO, 2014). The significance of AT in Malaysia is well documented in the National Ecotourism Plan 2016-2025 (NEP 2016-2025). The plan highlights the significance of maximising the potential of eco-adventure tourism. NEP 2016-2025 designated the district of Kampar as one of the 60 pilot clusters dedicated for eco-adventure tourism in the country. The attractions in Kampar make the district a one-stop destination for AT in Malaysia (Gough, 2012). Kampar comprises many natural resources, like forests, limestone caves, and rivers, which has created many opportunities for the tourism industry to develop adventure-based activities (Shurbaini *et al.*, 2014). Generally,

these resources are terrestrial-based (forest and caves) and water-based (river) activities. Popular terrestrial-based acitivities include trekking to Bukit Batu Putih and caving in Gua Tempurung, whereas white-water rafting, tubing and kayaking in Sungai Kampar and waterfall abseiling at Ulu Geruntom are popular water-based activities. Kampar also offers less strenuous nature-based activities, like visiting the Rafflesia flower garden in Ulu Geroh, the Sahom Farm Retreat, Gaharu Tea Valley and Sungai Salu Waterfall. Zulkifli Mohamed *et al.* (2018) reported that the most popular AT activities in Kampar are adventure caving at Gua Tempurung (64.7%), followed by white-water rafting (51%), waterfall abseiling (18.6%), and kayaking (15.7%) (Figure 1).

A 4.76% increase in the number of tourists visiting Perak in 2016 was observed, that is from 16 million visitors in 2015 to 16.8 million in 2016. In 2016 alone, a total of 98,171 visits involved adventure activities in Kampar (APT Consortium Sdn Bhd). The significance of Kampar in attracting high-yielding tourists that contributes to the economy was highlighted in the 11th Malaysia Plan (Ong, 2016). The development of tourism in Kampar is subject to public funding.
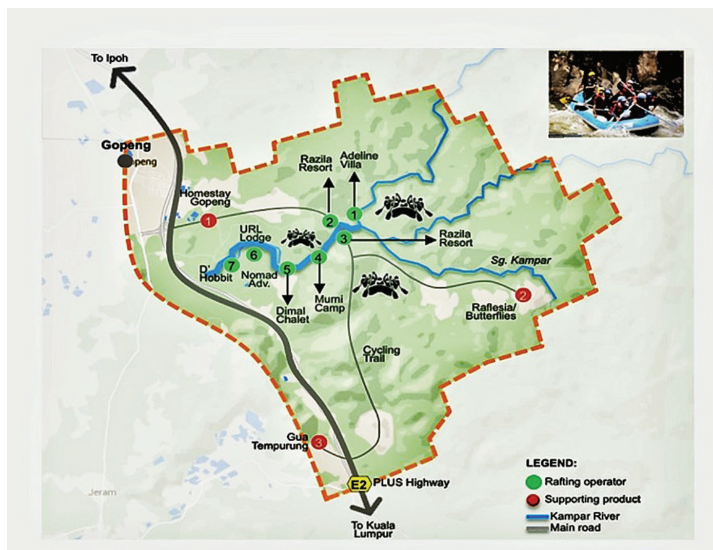

Figure 1: Location of adventure tourism attractions in Kampar
Source: Ministry of Tourism, Arts and Culture, 2016

Table 1: Visitor arrivals in Perak, Malaysia

Year	Number of Tourists (in million)
2015	16.0
2016	16.8
2017	20.1
2018	17.6
2019	21.1

Source: Department of Statistics Malaysia, 2020

The Perak government has allocated a total of RM25.5 million for upgrading, maintaining and promoting tourism in Perak in 2016 and 2017 (Ahmad, 2016; Suara Perak, 2017). Meanwhile, the local municipal council for Kampar outlined a sum of RM53.52 million for the development of the district as a vital tourism hub (Rancangan Tempatan, 2030). With high dependency on public funds, it is good practice to understand the benefit the area brings to community.

The tourism products of Kampar are made of non-market services provided by nature. No previous studies have provided information on the importance of natural resources in delivering AT experiences in Kampar. The absence of an economic valuation would lead to an incomplete knowledge of the area, which could result in a market failure. A non-market valuation is able to supply economic information on the resources, thus the consequences of market failure may be minimised. This study attempts to provide a valuation of Kampar's natural resources by employing a non-market valuation technique. The travel cost method (TCM) is the best option for two main reasons. Firstly, TCM is an economic valuation technique for ecosystem services that are not priced in a commercial market, particularly for recreational activities. There is an absence of market prices for outdoor recreational activities, making TCM a suitable method to estimate the monetary value for recreational services using natural resources. Second, TCM estimates are based on "actual" behaviour of the AT rather than hypothetical values. It is especially so since AT activities are conducted on site in Kampar, which reveals the travelling and expenditure behaviours of participants.

Travel Cost Method

A recreation demand model is useful to predict the demand for recreational activities and determine the value of recreational resources (Loomis & McTernan, 2014). TCM was a simple model that was derived by Hoteling in 1947. Clawson and Knetsch (1996) altered this method to estimate recreational demand as a function of travel costs, which was a substitute for price.

Revealed preference methods, like TCM, helps in the assessment of recreation trip demand and the valuation of recreation resources (Borzykowski *et al.,* 2017). Revealed preference indicates a scenario where the researcher relies on changes in travel costs incurred by visitors to trace a demand curve. TCM uses costs incurred by individuals or groups travelling from their home to the destination as a proxy for the price of the trip (Loomis & McTernan, 2014). The price (travel cost) and quantity (number of trips) are used to estimate the demand function and measuring the demand and value (Freeman *et al.,* 2014). This demand curve is used for the calculation of consumer surplus (CS).

TCM is an economic method used to derive the demand function for recreational activities based on travel costs incurred through price and visit frequency as a quantity in a given time period. By regressing the travel cost and visits, a recreational demand curve can be constructed, hence the area under the demand curve generates the value for CS. There have been studies where the economic value is calculated by multiplying CS with total visits within a certain period, such as one year (Razak *et al.,* 2018; Ali *et al.,* 2018). The value of adventure resources is estimated by determining the amount and time spent experiencing adventure activities. Juarez and Cañete (2013) stated that money and time spent by individuals to travel to the site helps in determining the value of outdoor recreational experience.

TCM studies consumption behaviour based on the consumption of natural resources (Atkinson & Mourato, 2008). In Malaysia, TCM studies are related to the recreational consumption of natural resources. Examples of the application of TCM in Malaysia assessing the recreational value of natural resources include those conducted on mangrove forests (Razak *et al.,* 2018) rivers (Ali *et al.,* 2018) and terrestrial forests (Matthew *et al.,* 2013; Syamsul Herman *et al.,* 2012). These researchers considered the number of trips made by an individual to a recreational site and the explicit and implicit travel costs incurred. These economic expenditures reflect the "price" of the goods and services and indirectly reflected the minimum amount a visitor was willing to pay for the resources.

Based on the travel information provided by the visitors, sucha s their demographic characteristics and other attributes, economists estimated the "derived demand", thereby calculating CS (Matthew *et al.,* 2013; Prayaga 2017). When the number of visitors to the environmental resource is available, the values are calculated using the revealed preference-based approach. In constructing a general demand model for recreational purposes of natural resources, a basic travel cost calculation can be carried out as shown below:

$$V_{ij} = f\,(TC_{ij}X_i) \qquad \text{[Eq.1]}$$

Where:

V_{ij} = no. of annual visits made by individual to site

TC_{ij} = travel cost incurred by individual to visit site

X_i = all factors determining individual, 's visits

Demographic Profile Variable

Many studies have shown that tourists' socio-demographic profile affected their willingness to buy adventure tour packages (Sirgy, 2010). Adventure tourists engage commercial operators for a guided outdoor adventure tour that requires strenuous physical activity and specialised equipment (Buckley, 2006a). Adventure tourists are adventure seekers and they are mostly made up of those who are young, active, educated and affluent who willingly spend money in pursuit of adventure (Swarbrooke *et al.,* 2003; Williams & Soutar, 2005). Women participate along with their men counterparts in adventure activities. In Malaysia, Cheah and Poh (2014) revealed that more women participated in physical activities (55.61%) compared with men (44.39%).

A majority of adventure travellers are between the ages of 30 and 40 (Sung, 2004; Fletcher, 2010), from middle-class families and are well-educated (Fletcher, 2010). A study by the Adventure Travel Trade Association (2013) showed that adventure tourists 37% of them had a four-year degree, and 11% had a professional degree (11%), with an average annual income of US$46,800. The amount spent by the adventure tourists for trips (excluding airfare and gear) increased from $593 in 2009 to $947 in 2012. This expenditure increased for both soft and hard adventure trips. The average trip lasted for 10 days.

Service Quality of Adventure Operator

In many cases, visitors' choice and preferences are regularly a part of the input in formulating the management policy of public areas (Francis *et al.,* 2019). Many tourism studies used satisfaction to represent choice and preferences (Williams & Soutar, 2009; Matthew *et al.,* 2011). Adventure tourism is a commercialised tour, wherein the eco-adventure operator guides the tourists (Buckley, 2006b). Hence, service quality parameters, like guidance, safety measures, fees and overall satisfaction regarding the operation, shape tourists' experience and satisfaction. The delivery of quality services ensures the success of tour operators and affects the image of the destination.

Fornell *et al.* (1996) stated that perceived service quality affected customer satisfaction. Huang *et al.* (2010) studied the effect of tour services on customer satisfaction in package tours based on three aspects: guidance,

satisfactory tour services, and enjoyable tour experience. The results revealed that satisfaction with the tour service quality was based on the guide service, experience derived from leisure activities and food.

In adventure tourism, tour guides represent the tourist company and ensure the smooth operation of the programmes. The tour guides act as group leaders, participate in the activities, ensure the safety of the tourists, educate people and interpret the environment (Poudel & Nyaupane, 2011). Tourist satisfaction refers to the quality of experience and psychological outcome derived by interacting with different service facets (Baker & Crompton, 2000). Studies discussed motivating factors that encourage tourists to revisit a site, like customer satisfaction, perceived quality (Hui *et al.,* 2007; Pizam *et al.,* 2016), safety and risk reduction (Gitelson and Crompton 1984; Kozak 2001), destination competitiveness (Mazanec *et al.,* 2007), past experience and destination image (Beerli & Martín, 2004).

Income Effect

A mixed relationship was noted between income and participation (Syamsul, 2010). Income was seen to negatively (Sohngen *et al.,* 2000; Loomis, 2003) or positively (Bin *et al.,* 2005; Martínez-Espiñeira & Amoako-Tuffour, 2009) affect the overall trip number and experience. A negative relationship between visits and income suggest that the recreational location is an inferior product (Syamsul *et al.,* 2013). As tourists earn more and have an increased disposable income, they visit other locations that might be more costly, resulting a decrease in visits to the former location in question.

Materials and Methods

This study applied TCM as the working method. The method was designed specifically for estimating the recreational uses of natural resources (Ward & Beal, 2000; Syamsul Herman *et al.,* 2013; Ali *et al.,* 2018) making it the best method for the study. Another strong

reason to use TCM is the consistency of the method with the theory of demand. In a TCM study, the dependant variable is represented with frequency of visit over a time period, while the independent variable is the cost variable, which, in this case, is the travelling cost. Secondly, additional independent variables are the determinants of demand, such as socio-demographics and taste and preferences. In this study, we included cost-related variables, as well as socio-demographic and perception variables to allow for a representative model.

Specification of the Demand Model

The problem of heteroscedasticity is common in cross-sectional data due to the vact that cross-sectional data invariably involves observations on economic units of varying sizes at a given point in time (Rosopa & Schroeder, 2013).

Since the variances are not homogenous across zones (observations), the Ordinary Least Square estimators will be statistically inefficient, increasing the size of the confidence interval (Diamantedes, 2000). To resolve this, the model is transformed into a Semi-log model by taking its natural log. By means of changing (transforming) the data from their original form, it is a possible correction for heteroscedasticity, non-normality, and non-additivity (Zar, 1999) In this study, the model was transformed into a semi-Log (SL) model. The SL model corrects for the heteroscedasticity issue and eliminates the potential issues related to the negative trip prediction that occurred in linear functional forms (Ahmad, 1994; Syamsul, 2010). The SL demand function model for individuals is shown below:

Based on Equation 1, the demand model for AT in Kampar is specified as below:

$$LnV_{ij} = b_0 - b_1 TravC + b_2 ServiceQ + b_3 Income + \varepsilon_i$$

Where:

LnV_{ij} : Frequency of annual trips undertaken by an individual *i* to Kampar *j* to participate in adventure activities (dependent bariable)

TravC : Overall round-trip travel cost

incurred by an individual travelling to Kampar

ServiceQ : Service quality index of adventure tour operators (tour guide, safety, fees and overall satisfaction)

Income : Monthly income of the individual

b_0 - b_1 : Coefficients estimated

ε_i : Error

Measurement of the Travel Cost (TravC) Variable

In this study, the price is measured by calculating tourists' cost of traveling to the site from their residences, as all tourists need to travel to Kampar to participate in on-site outdoor recreational activities. It was assumed that the respondents travelled using the shortest route to reach Kampar from their residencess. The respondents of the study were restricted to those who participated in at least one of the AT activities in Kampar, such as caving, white-water rafting/kayaking and waterfall abseiling. The restriction is to avoid multipurpose visits that may cause an overestimation of the value.

The travel cost (TravC) variable is derived by multiplying cost per kilometre and the distance travelled by the respondents to reach Kampar. TravC is the summation of mileage and personal costs. The study follows the official travel reimbursement rate (RM0.70/km) by the Ministry of Finance, Malaysia (Perbendaharaan Malaysia, 2013) as the rate for mileage cost.

The second part of cost per kilometre is personal costs, which comprise toll charges, petrol, and any cost related to the trip. For respondents travelling using personal vehicles, the personal cost is divided by number of passengers in the same vehicle. Meanwhile, if respondents travelled with family, OPE is assumed for the whole family. For respondents who arrived in groups in a rental vehicle, OPE is determined by proportionating the rental rate and number of individuals in the group. This study required respondents to state the geographical location of their residences, i.e. housing area or village, *mukim*, district, state, postcode and also the name of the nearest town or city. The measurement of distance between the study site and respondents' residences are based on the Malaysia Distance Travelling and Driving Direction by globeFeed.com, as shown below:
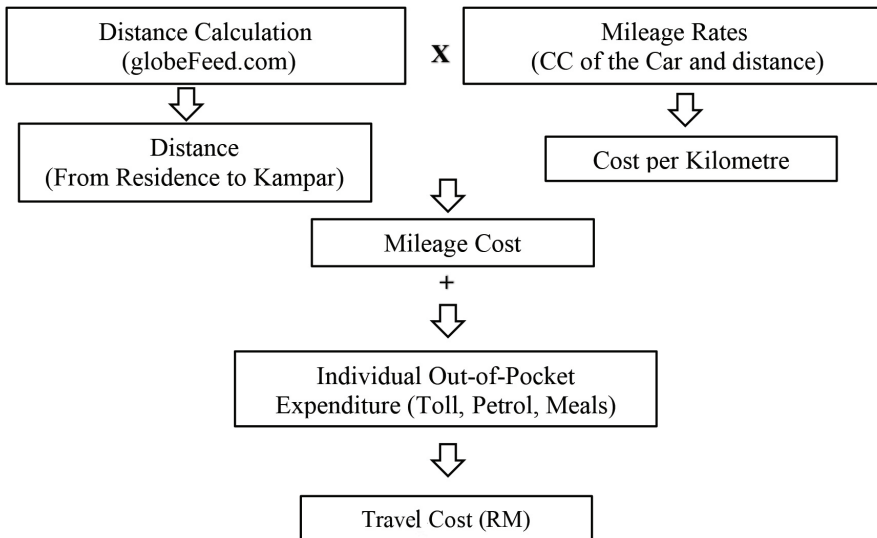

Figure 2: The measurement of the TravC variable

Measurement of the Service Quality (ServiceQ) variable

The variable ServiceQ is measured by having a satisfaction mean score of five aspects of AT service provider. Using a five-point Likert scale, ranging from very satisfied (5) to very not satisfied (1), respondents were asked to rank five AT aspects in Kampar, which are tour operator service, tour fees, activity experience, safety and tour guide service.

Definition of Income Variable

Income is a socio-economic variable that measures respondents' monthly gross income.

Survey and Sampling Procedures

In this study, face-to-face interviews were conducted using a structured questionnaire. Data were collected for three months in 2016. Data was collected in this particular year is as permission was granted to conduct the study in 2016. The primary data collection at the site was costly, and to obtain funding for data collection was also obtained in 2016. However, the surveys included weekdays, weekends, public and school holidays to ensure suitable and representative respondents. The interview locations were 1) The entrance of Gua Tempurung; 2) two white-water rafting and tubing stations in Kampung Jahang and near the hideout campsite station; 3) waterfall abseiling at Ulu Geruntum, and 4) resorts based on tour guides' advice.

Since the public have easy access to these locations, it was difficult to obtain a frame for probability sampling. However, a cluster sampling technique was used group the samples into three location-based clusters. Based on Zigmund and Babin (2010), a 5% point error was selected for this study since it was used in other studies, particularly for business research. A total of 350 samples were collected, but only 305 were usable, owing to a 5% sampling error rate. Interviews were conducted by trained enumerators, using a structured questionnaire in Malay and English. Only domestic respondents that have a monthly income were selected to avoid an overestimation bias, and they must have participated in at least one adventure activity. The respondents were briefed about the purpose and objectives of the survey and were interviewed for 15 to 20 minutes. The respondents included group leaders. If the group was a family, the respondents selected were either the father,/ mother or eldest brother. However, in non-relative groups, the selected respondents were the person in charge of the trip. It was assumed that the data provided by the group leader represented the data for the entire group (Syamsul, 2010).

Results and Findings

Socio-Demographic and Profile Characteristics

The survey indicates an almost equal distribution of men (46.6%) and women (53.4%) participating in AT. A majority of tourists (74.7%) were between 21 and 40 years old. It is understandable that the younger age group are more inclined towards AT, as the activities are vigorous compared with other tourism segments (Matthew *et al.,* 2019b). The highest portion of the tourists were Malay (78.7%). Most of the tourist had a monthly gross income of between RM1,001 to RM3,000 (42.3%), with 84.3% of them having tertiary-level education (diploma and above)

Adventure caving at Gua Tempurung (72.8%) was the most popular activity, followed by white-water rafting (35.7%), waterfall abseiling (17.7%) and kayaking (7.2%). The visitors opted for one-day (61.0%), two-day, one-night (21.6%), or three-day and two-night (17.0%) trips. Packaged activities, like caving in Gua Tempurung and white-water rafting in Sungai Kampar, which could be completed within eight hours, were among the most popular ones (65%). The majority of the adventure tourists (40.4%) were from the Klang Valley (Selangor or Kuala Lumpur), followed by Perak (37%). Table 2 below describes the socio-demographic characteristics of the respondents.

Table 2: Demographic profiles of the respondents

Characteristic		Frequency	Percentage (%)
Gender	Male	142	46.6
	Female	163	53.4
Age	below 20	31	10.2
	21-30	144	47.2
	31-40	84	27.5
	41-50	34	11.1
	51 or above	12	3.9
Race	Malay	240	78.7
	Chinese	52	17.0
	Indian	7	2.3
	Others	6	2.0
Income	Below RM 1000	71	23.3
	RM 1001-RM3000	129	42.3
	RM 3001-RM6000	79	25.9
	RM6001 or above	26	8.5
Education Level	Primary School	2	0.6
	Secondary school	46	15.1
	University/College	257	84.3
Activity	White water rafting	109	35.7
	River Kayaking	22	7.2
	Waterfall Abseiling	54	17.7
	Adventure caving	222	72.8
	Other activities	35	11.5
Freq. of Visit (2016)	First times	97	31.8
	Second times	147	48.2
	Third times	28	9.2
	Fourth times	14	4.6
	Fifth times and more	19	6.1
State of origin	Perak	113	37.0
	Selangor	96	31.5
	Kuala Lumpur	27	8.9
	Negeri Sembilan	13	4.3
	Johor	11	3.6
	Melaka	9	3.0
	Pulau Pinang	15	4.9
	Kedah	7	2.3
	Others state	14	4.5

(N=305)

Travel Characteristics

The visit frequency is the dependent variable for this study. The results show that the majority of the respondents were visiting for the second time (48.2%), while 31.8% were first-timers, and 9.2% were visiting for the third time in 2016. The average repeat visits to Kampar in 2016 is 2.21 per person. The average distance from residences to the site is 155.95 km. The average travel time is 2.01 hour, while the longest and shortest travel time is seven hours and ten minutes, respectively (Table 3).

Tour package costs for adventure activities in Kampar ranges between RM8 and RM160 per activity. A total of 64.9% spent less than RM100 on one activity, such as adventure caving, tubing or trekking to Batu Putih; while 34.4% of the tourists spent between RM101 and RM200 on white-water rafting or a combination of white-water rafting and adventure caving (Table 4).

Table 3: Descriptive analysis of travel costs

Variable	Mean	Median	Std. Dev	Min.	Max.
Frequency of Visit (2016)	2.21	2.00	1.699	1	13
Travel Cost (RM)	252.1448	270.8000	191.25719	10.00	945.00
Distance (KM) POR to Site	155.9528	180.0000	109.33942	10.60	541.00
Travel Time (Hours)	2.0156	2.0000	1.31799	0.10	7.00

Table 4: Travel characteristic statistics

Travel Characteristic		Frequency	Percentage (%)
Frequency of Visits in 2016	First times	97	31.8
	Second times	147	48.2
	Third times	28	9.2
	Fourth times	14	4.6
	Fifth times and more	19	6.1
On-Site Time	Day trips (<12hours)	186	61.0
	1 night/24 hours	66	21.6
	2 night/48 hours	52	17.0
	3 night/72hours	1	0.3
Distance to Site	100 km and below	107	35.1
	101 km – 200 km	111	36.4
	201 km – 300 km	63	20.7
	301 km – 400 km	15	4.9
	More than 401 km	9	3.0
Travel Time	< 1/2 hour	54	17.7
	1/2 - 1 hour	52	17.0
	1 -1/2 hour	14	4.6
	1 1/2-2 hours	64	21.0
	2-21/2 hours	40	13.1
	>2 1/2 hours	81	26.6

Travel Cost	RM 50 and below	28	9.18
	RM51-RM100	86	28.2
	RM101-RM150	20	6.56
	RM151-RM200	5	1.64
	More than RM201	166	54.42
Tour Package	RM1-RM100	198	64.9
	RM101-RM200	105	34.4
	RM201-RM300	2	0.7

Mean Satisfaction on Quality Service

The service quality is a measure of the perceived satisfaction by the respondents towards the quality of selected attributes of AT in Kampar (Table 5). On average, the respondents were satisfied with all attributes, which are tour operators (4.23), fees (4.13), adventure activities (4.42), safety (4.27) and guide services (4.50).

Multiple Regression Analysis

The coefficient of determination (R^2) shows that 14.2% of the visits per year were explained by all regressors (Table 6).

The multiple regression analysis result is presented in Table 7. The dependent variable is individual visits per year denoting quantity, while the independent variables are price (travel cost), demographic (income) and perception (satisfaction).

Among all independent variables, TravC and ServiceQ were found to be significant at a 95% level, while income has no effect on visits (Table 7). The negative TravC coefficient is consistent with the demand theory, where quantity of demand (V) decreases as the cost of travel (TravC) increases. The results indicate that individuals who live further incur a higher cost to visit Kampar compared with those living nearby. The negative coefficient indicates a downward sloping demand curve from left to right.

Table 5: Mean satisfaction towards the service quality of adventure operators

Variables	Mean	Median	Mode	Min	Max
Satisfaction toward Adventure Tour Operator	4.23	4.25	5.00	1.00	5.00
Satisfaction toward Fees	4.13	4.00	4.00	1.00	5.00
Satisfaction Toward Experience (Adventure Activity)	4.42	5.00	5.00	2.00	5.00
Satisfaction toward safety	4.27	4.33	5.00	1.00	5.00
Satisfaction toward Tour Guide service	4.50	5.00	5.00	1.00	5.00

Table 6: Output summary of stepwise regression (semi-log)

ANOVA	
R^2	0.142
Adj. R^2	0.134
F value	16.657
Std. Error of Estimate	0.43702

Table 7: Multiple regression output

Variable	β	T-Value	Sig.
(Constant)	0.913	4.796	0.000
(RM)	-0.001	-6.405	0.000*
ServiceQ (Likert)	0.111	2.648	0.009*
(RM)	8.765E-6	1.015	0.311

*Significant at 0.05 confident level

Customer satisfaction with operators' quality of service shows a positive sign and the T-test is significant with a 95% confidence level. It reveals that customers are satisfied with the quality, encouraging them in participating the AT activities. This is also supported with the descriptive results, where all attributes were ranked satisfactory. The positive coefficient suggests that visitation and participation would increases if respondents' satisfaction with the quality of service grows. Tourist satisfaction in the service industry, such as tourism, is constantly studied. Earlier studies also noted a positive relationship between service quality and participation in recreational activities, especially at the same locations. These included a relationship between customer satisfaction and perceived quality (Hui *et al.,* 2007), destination products (Akama & Kieti, 2003), safety and risk reduction (Kozak, 2001), word-of-mouth novelty (Hui *et al.,* 2007; Jang *et al.,* 2007), destination competitiveness (Mazanec *et al.,* 2007), past experiences and destination image (Beerli & Martín, 2004).

Income is positively related to visits. Similar results were noted earlier by Beedie and Hudson (2003), where people with higher incomes are likely to participate in adventure activities. However, the variable of income does not have any effect towards visit frequency per year. Income is omitted from the subsequent discussion.

Estimation of CS and Adventure Tourism Economic Value

The benefit of AT is measured by measuring its CS. CS represents the recreational use value

attached to a recreational site. It also refers to the additional value beyond travel costs derived by the people when visiting a recreation site (Sohngen *et al.,* 2000).

CS for AT in Kampar was estimated as follows (Stoeckl & Mules, 2006):

$$CS \text{ per person} = 1/(-\beta)$$

Where β refers to the coefficient of travel cost variable (-0.001). Hence, the CS per trip is calculated as follows:

$$CS \text{ /visit /year} \quad = 1/\text{-} \beta$$
$$= 1/(-0.001)$$
$$= RM1000.00$$

Nevertheless, the estimated values are based on visitation, rather than individual benefit. The economic value of adventure tourism is estimated by multiplying CS/trip, and number of people participating in Kampar. Hence, the researchers divided the total CS with the average number of annual trips to obtain CS per person/ trip. Here, the average trip was 2.21 trips/year, and the CS was calculated as follows:

Average visit/person/year in 2016 = 2.21

Consumer surplus (CS) per person/visit
= RM1000/2.21
= RM452.48/person/trip

The estimated CS from the study is RM452.48 per person per trip in 2016. The CS value indicates the satisfaction a person obtained upon participation in AT and this derives the economic value of the AT in Kampar. While CS is an estimation for a single person per trip, the economic value of the whole area is represented as a sum of all tourists. Hence, the

annual adventure tourism for Kampar in 2016 is calculated as follows:

Annual adventure tourism = (CS/person/trip) × (total number of visitors to Kampar, in 2016).

In 2016, a total of 98,171 visits (44,343 visitors) involved adventure activities at Kampar. The total economic value of AT is estimated to be RM 20,064,320.64 in 2016.

Conclusions

Market failure is commonly associated with most non-market resources. We address the market failure conditions by conducting an economic assessment on the niche adventure tourism product of Kampar.

The estimated non-market value of Kampar is RM20,064,320.64, which is solely from adventure tourism. Therefore, the estimated economic value from this study could be used as a yardstick for the stakeholders of Kampar to forecast any change in managing the destination. In addition, under present conditions, if relevant authorities of Kampar intended to request additional allocations for maintenance and new developments, it would be more justifiable now since the benefits of Kampar is presented in monetary terms.

The importance of Kampar has been highlighted in governmental plans and expenditures. The question is, does the marketing efforts for Kampar as an AT site worthwhile? Under the current management's strategies, the value estimates obtained from this study confirm that there is substantial economic value in terms of the tourism use of Kampar. This economic value seems to justify the efforts to transform Kampar into a venue for adventure tourism, not only for Perak, but also for the nation.

An important point to note is that the estimated economic value is highly associated with the visitation rates to Kampar. This reveals how essential it is for Kampar to receive constant tourists. Changes in visitations will also affect its economic value. Therefore, there is a need for the management to have strategies, i.e.

regular promotion, marketing and allocations, to maintain and increase visitations as this will maintain and increase the economic value.

From the study, we identified that satisfaction also affects visitation. As taste and preference are among principle predictors in demand theory, the variable of quality of service was incorporated to understand consumer preferences. The study discovered that consumer satisfaction contributes to the demand of AT, which is expected in the hospitality sector. Although how much satisfaction contributes to the economic value is not thoroughly discussed here, and there is a need to maintain the quality of services. Since not much can be done with regards to the travel-related variable, the stakeholders in Kampar, especially tourism providers, might need to focus on identifying satisfaction in future studies. The collection of data on these satisfaction factors would supply relevant agencies with the feedback on service and hospitality quality in Kampar. Thus, this information can be used to formulate strategies to attract visitors and enhance the AT value.

Though the study was conducted post-site development, the economic valuation of Kampar had direct implications, indicating that natural resources must be sustainably used for AT activities. Nevertheless, further studies, such as carrying capacity, needs to be conducted to consider the effect of such measures on total visits, along with the physical impact of eco-adventure activities on the site resources.

This study demonstrated the sustainable use of natural resources for a tourism product. The estimated economic value clarifies the benefits the public obtain from AT. If there is a change in land use, for example conversion to extractive consumption, the estimated value will be affected. These estimated economic values can give an impression to policymakers of the public's well-being, which can be altered due to the changes in the use of resources. In other words, these economic values are the means to maintain the sustainability of natural resources in their original form.

Acknowledgements

References

Ali, A. H. M., Afandi, S. H. M., Emmy, P. J., Shuib, A., Ramachandran, S., & Samdin, Z. (2018). Assessment of non consumptive wildlife oriented tourism in Sukau, Sabah using Travel Cost Method. *International Journal of Business and Society*, *19*, 47-55.

Ahmad, S. (2016). *Apa kejutan Bajet Perak 2017?* Retrieved April 20, 2018, from http://www.sinarharian.com.my/politik/apa-kejutan-bajet-perak-2017-1.585554

Ahmad, S. (1994). *Demand for and value of outdoor recreation in Langkawi by domestic visitors.* [Ph.D. Thesis, Universiti Putra Malaysia] (Unpublished).

Akama, J. S., & Kieti, D. M. (2003). Measuring tourist satisfaction with Kenya's wildlife safari: A case study of Tsavo West National Park. *Tourism Management*, *24*(1), 73-81.

Amoako-Tuffour, J., & Martínez-Espiñeira, R. (2012). Leisure and the net opportunity cost of travel time in recreation demand analysis: An application to gros morne national park. *Journal of Applied Economics*, *15*(1), 25-49.

Atkinson, G., & Mourato, S. (2008). Environmental Cost-Benefit Analysis. *Annual Review of Environment and Resources*, *33*(1), 317-344.

ATTA - Adventure Travel Trade Association. (2013). *Adventure tourism market study.* Seattle: ATTA document.

ATTA - Adventure Travel Trade Association. (2015). *The 2015 report*. Seattle: ATTA document.

Baker, D. A., & Crompton, J. L. (2000). Quality, satisfaction and behavioral intentions. *Annals of Tourism Research*, *27*(3), 785-804.

Beedie, P., & Hudson, S. (2003). Emergence of mountain-based. *Annals of Tourism Research*, *30*(3), 625-643.

Beerli, A., & Martín, J. D. (2004). Factors influencing destination image. *Annals of Tourism Research*, *31*(3), 657-681.

Bin, O., Landry, C. E., Ellis, C. L., & Vogelsong, H. (2005). Some consumer surplus estimates for North Carolina Beaches. *Marine Resource Economics*, *20*(2), 145-161.

Borzykowski, N., Baranzini, A., & Maradan, D. (2017). A travel cost assessment of the demand for recreation in Swiss forests. *Review of Agricultural, Food and Environmental Studies*.

Buckley, R. (2006a). *Adventure tourism*. Oxford: CAB International. http://www.academia.edu/25849948/

Buckley, R. (2006b). Adventure Tourism Research: A guide to the literature. *Tourism Recreation Research*, *31*(2), 75-83.

Cheah, Y. K., & Poh, B. K. (2014). The determinants of participation in physical activity in Malaysia. *Osong Public Health and Research Perspectives*, *5*(1), 20-27.

Ewert, A. (1989). *Outdoor adventure pursuits: Foundation, models and theories*. New York: Publishing.

Fletcher, R. (2010). The emperor's new adventure: Public secrecy and the paradox of adventure tourism. *Journal of Contemporary Ethnography*, *39*(1), 6-33.

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American Customer Satisfaction Index:

Nature, purpose, and findings. *Journal of Marketing*, *60*(4), 7.

Freeman, M. A., Herriges, J. A., & Kling, C. L. (2014). *The measurement of environmental resource values*.

Francis, F. J., Hassan, A., Mohd Afandi, S. H., Radam, A. (in press) Incorporating visitor's preferences into the policy framework of a Rainforest Discovery Centre. *Tourism Review.* doi:10.1108/TR-01-2019-0009

Gitelson, R. J., & Crompton, J. L. (1984). Insights into the repeat vacation phenomenon. *Annals of Tourism Research*, *11*(2), 199-217.

Huang, S., Hsu, C. H. C., & Chan, A. (2010). Tour guide performance and tourist satisfaction: A study of the package tours in Shanghai. *Journal of Hospitality and Tourism Research*, *34*(1), 3-33.

Hui, T. K., Wan, D., & Ho, A. (2007). Tourists' satisfaction, recommendation and revisiting Singapore. *Tourism Management*, *28*(4), 965-975.

James, G. (2012). *Kinta and Perak: An Eco-Adventure Playground*. Retrieved February 13, 2018, from http://www.ipohecho.com.my/v2/2012/05/01/kinta-and-perak-an-eco-adventure-playground/

Jang, S., Cheong, S., & Feng, R. (2007). Temporal destination revisit intention: The effects of novelty seeking and satisfaction. *Tourism Management*, *28*(2), 580-590.

Kozak, M. (2001). Repeater's behavior at two distinct destinations. *Annals of Tourism Research*, *28*(3), 784-807.

Loomis, J. (2003). Travel cost demand model based river recreation benefit estimates with on-site and household surveys: Comparative results and a correction procedure. *Water Resources Research*, *39*(4).

Loomis, J., & McTernan, J. (2014). Economic value of instream flow for non-commercial whitewater boating using recreation demand and contingent valuation methods.

Environmental Management, *53*(3), 510-519.

Matthew, N. K., Ahmad, S., Ramachandran, S., Syamsul Herman, M. A., & Zaiton, S. (2018) Visitors preferences on forest conservation and management in Endau-Rompin National Park. *Journal of Tropical Science, 30*(3), 354-361.

Matthew, N. K., Shuib, A., Ramachandran, S., & Mohammad Afandi, S. H. (2013). Demand Model of International Visitors to the Kilim Karst Geoforest Park, Langkawi: Application of Itcm Model. *Journal of Applied Economics and Business*, *1*(4), 51-66.

Matthew, N. K., Shuib, A., Ramachandran, S., Afandi, S. H. M. (2019a). Total economic value of ecosystem services in Malaysia: A review. *Journal of Sustainability Science and Management, 14*(5), 148-163.

Matthew, N. K., Shuib, A., Ramachandran, S., Afandi, S. H. M., & Kunjumaran, V. (2019b). Profiling the segments of visitors in adventure tourism: Comparisons between visitors by recreational sites. *International Journal of Business and Society*, *20*(3), 1076-1095.

Matthew, N. K., Shuib, A., Ramachandran, S., Herman, S., & Nair, V. (2011). Exploring economic valuation and impact of rural tourism. *TEAM Journal of Hospitality and Tourism*, *8*(1), 6-9.

Martínez-Espiñeira, R., & Amoako-Tuffour, J. (2009). Multi-destination and multi-purpose trip effects in the analysis of the demand for trips to a remote recreational site. *Environmental Management*, *43*(6), 1146-1161.

Mazanec, J. A., Wöber, K., & Zins, A. H. (2007). Tourism destination competitiveness: From definition to explanation? *Journal of Travel Research*, *46*(1), 86-95.

Ministry of Tourism, Arts and Culture. (2016). *National Ecotourism Plan, 2016-2025*. Putrajaya.

Nur Syuhada, C. I. (2013). *Recreational value of mountain biking at Putrajaya Challenge Park, Malaysia*. Unpublished Degree of Master of Science, Universiti Putra Malaysia, Malaysia.

Razak, N. A., Afandi., S. H. M., Shuib, A., & Ghani, A. N. A. (2018). Visitors travelling time cost for ecotourism at Matang Mangrove Forest Reserve. *International Journal of Business and Society*, *19*(1966), 117-127.

Rosopa, P. J., Schaffer, M. M., & Schroeder, A. N. (2013). Managing heteroscedasticity in general linear models. *Psychological Methods, 18*(3), 335-351. https://doi.org/10.1037/a0032553

Ong, H. P. (2016). Industry Analysis Ecotourism in UNESCO World Heritage Sites: Uplifting communities, opportunities and economies. *TEAM Journal of Hospitality and Tourism Journal of Hospitality and Tourism*, *13*(1), 1823-4003.

Perbendaharaan Malaysia. (2013). *Pekeliling Perbendaharaan Malaysia*: Kadar dan Syarat Tuntutan Elaun, Kemudahan dan Bayaran Kepada Pegawai Perkhidmatan Awam Kerana Menjalankan Tugas Rasmi. Kerajaan Malaysia.

Pizam, A., Shapoval, V., & Ellis, T. (2016). Customer satisfaction and its measurement in hospitality enterprises: A revisit and update. *International Journal of Contemporary Hospitality Management*, *28*(1), 2-35.

Poudel, S., & Nyaupane, G. P. (2011). Exploring the roles of tour guides in trekking tourism. In *Travel and Tourism Research Association (TTRA) Annual Conference*. Ontario, Canada.

Prayaga, P. (2017). Estimating the value of beach recreation for locals in the Great Barrier Reef Marine Park, Australia. *Economic Analysis and Policy*, *53*, 9-18.

Rantala, O., & Rokenses, A. (2018). Is adventure tourism a coherent concept? A review of research approaches on adventure tourism. *Annals of Leisure Research*. https://doi.org/10.1080/11745398.2016.1250647.

Samos Juarez, A., & Bernabeu Cañete, R. (2013). Valuation of the recreational use of the Calares del Mundo and Sima Natural Park through the travel cost method. *Forest Systems*, *22*(2), 189-201.

Sand, Manuel & Gross, Sven (2019). Tourism research on adventure tourism - Current themes and developments. *Journal of Outdoor Recreation and Tourism*, *28*. https://doi.org/10.1016/j.jort.2019.100261

Schleske. (1977). *Abenteuer - wagnis - Risiko im Sport: Struktur und Bedeutung in padagogischer Sicht*. Schorndorf: Hofmann.

Shurbaini, Azyan, I., & Hamzah, A. (2014). Conflict measurement among groups within a heterogeneous local community in a rural tourism destination: A case study of Gopeng Ecoadventure, Perak, Malaysia. In *International Conference on Urban and Regional Planning (ICURP) 2014*. Skudai, Johor.

Sirgy, M. J. (2010). Toward a quality-of-life theory of leisure travel satisfaction. *Journal of Travel Research*, *49*(2), 246-260.

Sohngen, B., Lichtkoppler, F., & Bielen, M. (2000). *The value of day trips to Lake Erie beaches (Columbus OH, Ohio Sea Grant Extension Technical Report TB-039)*.

Stoeckl, N., & Mules, T. (2006). A travel cost analysis of the Australian Alps. *Tourism Economics*, *12*(4), 495-518.

Suara Perak. (2017). *Perak, Persekutuan Kerjasama Rangka Pelan Eko-Pelancongan - Suara Perak*. Retrieved April 20, 2018, from https://www.suaraperak.com/perak-persekutuan-kerjasama-rangka-pelan-eko-pelancongan/

Sung, H. H., Morrison, A. M., & O'Leary, J. T. (1996). Definition of adventure travel. Conceptual framework for empirical application from the providers' perspective.

Asia Pacific Journal of Tourism Research, 01(02), 47-67

Swarbrooke, J., Beard, C., Leckie, S., & Pomfret, G. (2003). *Adventure tourism: The new frontier*. London: Butterworth-Heinemann.

Syamsul Herman, M. A. (2010). *Valuing recreational benefits of Perlis State Park, Malaysia using Travel Cost Method.* (Unpublished Doctoral dissertation). Universiti Putra Malaysia, Malaysia.

Syamsul Herman, M. A., Ahmad, S., Ramachandran, S., Mohd Rusli, Y., & Richards, A. (2012). The need for recreational economic valuation at perlis state park. *Malaysian Forester, 75*(1), 73-80.

Syamsul Herman, M. A., Ahmad, S., Ramachandran, S., & Rusli, M. Y. (2013). Recreational economic value of the Perlis State Park, Malaysia: An application of Zonal Travel Cost Model. *Journal of Tropical Agricultural Science, 36*, 295-310.

UNWTO. (2014). *Global report on adventure tourism*. Madrid, Spain: United Nation World Tourism Organization.

Williams, P., & Soutar, G. (2005). Close to the "Edge": Critical issues for adventure tourism operators. *Asia Pacific Journal of Tourism Research, 10*(3), 247-261.

Williams, P., & Soutar, G. (2009). Value, satisfaction and behavioral intentions in an adventure tourism context. *Annals of Tourism Research, 36*(3), 413-438.

Zigmund, W. G., Carr, J. C., Griffi, M., & Fuller jacobsen, B. (2010). *Business Research Methods. South-Western, Cengage Learning* (Vol. 8).

Zulkifli Mohamed, Syamsul Herman, M. A., Ramachandran, S., Ahmad, S., & Kunasekaran, P. (2018). Adventure tourism in Kampar, Malaysia: Profile and visit characteristics of domestic visitors. *International Journal of Business and Society, 19*, 175-185.