

VISITORS' WILLINGNESS TO PAY FOR ENTRANCE FEE AT PUNCAK JANING FOREST ECO-PARK, KEDAH, MALAYSIA

Nurin Fadhlin MH¹, Matthew NK^{1, 2, *} & Shuib A¹

¹Department of Environment, Faculty of Forestry and Environment, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia

²Institute of Tropical Agriculture and Food Security (ITAFoS), Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia

*nitankoshy@upm.edu.my

Submitted March 2020; accepted September 2020

The aim of this study was to determine visitors' willingness to pay for conservation fee at Puncak Janing Forest Eco-Park in Kedah, Malaysia. Three hundred visitors of the park were selected using convenience sampling. The findings showed that that willingness to pay for each household using double bounded contingent valuation method was RM18.53 per annum. The findings can be used for policy implementation and improve forest conservation projects.

Keywords: Double bound CVM, economic value, maintenance cost, policy, convenience sampling

INTRODUCTION

Forests are universally important as reservoirs and sinks of carbon. Given the apparent benefits obtained from the forest, environmental economists have attempted to place economic values on forest conservation efforts (Adhikari & Baral 2018). Forest rating and management can provide opportunities for residents around recreational forest in terms of income and exposure to the importance of the forest (Kang et al. 2015). Forests also function as open laboratories for conducting research and as an avenue for educational trips. Recreational forests that offer ecotourism sites can enhance national income and have economic impacts on the society around the national park, and contribute to the national economic growth (Kamri et al. 2017). The environment of recreational forests are fragile ecosystems and sensitive to human disturbances (Prado et al. 2017). Any human made element in the park should be designed and built cautiously. Consequently, a good strategy in establishing recreational forests as well as the appropriate management system is essential to attain the main goal of recreational forests, which is preservation (Ribeiro et al. 2018). Ecotourism is perceived as an effective tool towards conservation of recreational forests (Sabran et al. 2019). One of the main advantages of ecotourism is nature awareness,

which can promote and improve consciousness towards natural environments (Fletcher 2019). Sustainable and intelligent use of recreational forests will safeguard ecosystems for the benefit of future generations. However, there are constant debates on whether the government's effort to develop ecotourism may have negative effects on the ecosystems.

The forests in Malaysia are lowland dipterocarp forests, hill dipterocarp forests, upper hill dipterocarp forests, oak-laurel forests, montane ericaceous forests, peat swamp forests, and mangrove forests. In addition, there are also smaller areas of freshwater swamp forests, heath forests, forests on limestone and forests on quartz ridges. Forest eco-park areas are referred to as parks or recreational forests with beautiful and natural environments that serve as areas away from the hustle and bustle of city life and aimed at providing recreational and tourism facilities (FDPM 2017).

Puncak Janing is one of the forest eco-parks in the state of Kedah, and is visited by the local visitors, especially during the school holidays. It is deemed for protection and conservation of ecological resources for the future. This is where contribution of visitors through conservation fees would be useful for effective and efficient management of natural resources in the park. In

this study, the single bound and double bound contingent valuation methods (CVMs) were employed to determine the willingness to pay (WTP) of visitors to the Puncak Janing Forest Eco-Park, which is open to public and entrance is free of charge. In addition, the study determined the visitors' perception of preservation of the environment in the eco-park. Some facilities in Puncak Janing Forest Eco-Park require constant care, such as toilets and prayer rooms. The forest department which manages the forest area must ensure that these facilities are well-maintained. Findings from the visitors' WTP will assist the Puncak Janing Forest Eco-Park management in maintaining facilities at the park.

MATERIALS AND METHODS

Study area

Puncak Janing Forest Eco-Park is located in Bukit Perangin Forest Reserve, Kedah. The 1.5-km long Janing River forms a waterfall with a unique stone setting suitable for swimming, picnicking and relaxing. In addition, tourists can also enjoy a variety of flora and fauna from the upstream dipterocarp forest in Bukit Perangin Forest Reserve. There is a 3-km hiking trail around the jungle at Puncak Janing Forest Eco-Park. The distance from Puncak Janing to Bukit Wang recreational forest is approximately 15 km. Tourists visit Puncak Janing Forest Eco-Park for its natural atmosphere. The Kedah Forestry Department manages the forest eco-park and collaborates with municipality of the region for the upkeep of the forest.

Model specification for WTP

The model below shows the factors influencing the WTP of visitors to the Puncak Janing Forest Eco-Park. The factors influencing WTP were identified from literature and the dichotomous choice (1: Yes, 0: No). WTP elicitation method was used for dependent variables (DV) consistent to the use of single bound CVM and double bound CVM. Unlike national parks, recreational forests are visited more frequently. Therefore, instead of asking entrance fees based on per entry, this research switched to WTP household⁻¹ year⁻¹, which was more acceptable to visitors.

$$\begin{aligned} \text{WTP} = & + \beta_1 \text{bid price} + \beta_2 \text{age} + \beta_3 \text{gender} \\ & + \beta_4 \text{edu} + \beta_5 \text{occupation} + \beta_6 \text{income} \\ & + \beta_7 \text{perception} + \beta_8 \text{satisfaction} \\ & + \beta_9 \text{attitude} + \beta_{10} \text{travel companion} \\ & + \varepsilon \end{aligned} \quad (1)$$

where,

- WTP = dependent variable with 1 if respondent is willing to pay for the amount asked to them, 0 otherwise
- bid = bid price levels set out in the CVM question (dichotomous choice format)
- Age = age of the respondent (years)
- Income = income respondent (RM/month)
- Gender = 1 for male, 2 for female
- Occupation = occupation of respondent
- Perception = Likert scale (1 = strongly disagree to 5 = strongly agree)
- Satisfaction = Likert scale (1 = strongly dissatisfied to 5 = strongly satisfied)
- Attitude = Likert scale (1 = strongly disagree to 5 = strongly agree)
- Travel companion = who did the respondents come with
- ε = random error

DATA COLLECTION

According to the records of the Kedah Forestry Department, there were 3120 visitors to Puncak Janing Forest Eco-Park in 2018. Following Zikmund (2010), the appropriate number of samples would be 299 visitors. Thus, for this study, which was conducted in 2019, 300 respondents were selected using convenience sampling and were interviewed based on a designed questionnaire. As suggested by Platania and Rizzo (2018), data collection was carried out in several places where it was easy to intercept tourists visiting the park. The respondents were local visitors of the Puncak Janing Forest Eco-Park and they were selected at the entrance and exit points, following Kamri (2014). The selected respondents were above 18 years old. However, if they belonged to a family or group, only the head of the family or group was chosen to avoid redundancy (Matthew 2015). The respondents were approached with different starting WTP rates from a bid of RM5, RM10, RM15, and RM20 per annum. This study did not ask WTP on per entry basis since it was

redeemed less suitable for a forest eco-park like Puncak Janing where the purpose for visiting was for recreation per se and the number of visits was more frequent compared with visiting national parks. More so, visitors were Kedahans. Hence, per annum-based entrance fee might make it less stressful for visitors to indicate the WTP value. The purpose of asking WTP was for visitors to understand the economic value of ecotourism resources as environmental goods and services in monetary terms. If there were users from other states, a WTP on per entry basis, i.e. only when they visit the area, will be more feasible since they do not frequent the eco-park.

There were four elements used to design the questionnaire. Part one comprised characteristics of the visitors followed by their satisfaction with the facilities and perceptions of the significance of the Puncak Janing Forests Eco-Park. The second part comprised visitors' behaviour in the forest, and the third part included WTP followed by social demographics of the visitor in the fourth part.

Test of validity and reliability

In order to test the validity of the research instrument, this study referred to five experts in the field (see Acknowledgements). Cronbach's alpha was used for reliability test, which is the most widely used practice for this purpose in cross-sectional studies. Based on the result in Table 1, the values of Cronbach's alpha are above 0.8 for all sections, which suggested that they were considered as preferable (Pallant 2016).

RESULTS AND DISCUSSION

Socio-demographic information and characteristics of respondents

As shown in Table 2, 67.3% of the respondents were 18–25 years old, followed by 26–33 years old (18.0%), 34–41 years old (7.7%), and 42 respondents were above 41 years old

(7.0%). Most of the visitors were young and active holidaymakers. More than half of the respondents were females (63%). Generally, female respondents were more cooperative in answering the survey compared with male respondents. Similarly, in a study of visitors to the Forest Research Institute Malaysia's canopy walkway, female respondents were 55.0% compared with male respondents (45.1%) (Ramlan et al. 2011).

This survey also found that more than half of the respondents (58.4%) had at least a diploma. Educated visitors to the park implied that they had awareness and appreciation of the environment. Respondents were mostly students (41%) which was normal since they were young and most probably still unmarried with less commitments to family ties or employment responsibilities (Mohd et al. 2005). The rest were from the private sector (25.0%), self-employed (20.3%), or working in the government sector (12.7%). Three respondents were retirees.

Gross income also affected the WTP of the respondents. A total of 241 (80.3%) respondents had gross income below RM3000. The second largest income was in the RM3001–5000 category

Table 2 Socio-demographics of the respondents

Item	Frequency	Percent
Age		
18–25	202	67.3
26–33	54	18.0
34–41	23	7.7
42 and above	21	7.0
Gender		
Male	111	37.0
Female	189	63.0
Education		
Secondary	123	41.0
Diploma	113	37.7
Degree	56	18.7
Master	6	2.0
Others	2	0.7
Occupation		
Student	123	41.0
Self employed	61	20.3
Government	38	12.7
Private	75	25.0
Retiree	3	1.0
Income		
RM1000–RM3000	241	80.3
RM3001–RM5000	39	13.0
RM5001–RM7000	11	3.70
RM7001 and above	9	3.00

Table 1 Reliability statistics for the three sections using Likert scale in the questionnaire

Item	Cronbach alpha
Satisfaction	0.896
Perception	0.897
Attitude	0.888

with 39 respondents, followed by RM5001–7000 income range which had 11 respondents, and only 9 respondents had gross income above RM7001.

From a total of 300 respondents, 40.3% were first time visitors to Janing Forest Eco-Park while 59.7% of the visitors were second time visitors or more (Table 3). The highest number of visits to the Puncak Janing Forest Eco-Park was 11 times or more (19.7%) but the majority was first timers. The majority of respondents knew about Puncak Janing Forest Eco-Park from their friends (43.0%), followed by relatives (30.0%) and the Internet (15.3%). Many respondents (86.7%) visited the forest eco-park for relaxation with family (41.0%) or friends (37.3%). Most of the respondents were willing to visit the forest eco-park (91.3%) again because the location was easily accessible.

Visitor satisfaction

Mean visitor satisfaction score ranged from 2.26 to 3.33 (Table 4). The lowest scoring was for prayer room. Number of stalls and benches also had low mean score (2.62 and 2.97 respectively). Inadequate stalls and benches caused inconvenience to the visitors who needed to rest, particularly the elders.

Condition of the trail had the highest mean scores, followed by cleanliness of the trail and the availability of parking for visitors (both 3.29). Cleanliness of ecotourism area was also one of the key determinants of ecotourism development in Bukit Jaddih karst (Parmawati et al. 2018). Public perception about cleanliness of attraction area and proper management system of facilities influence ecotourism prospective and conservation activities (Tseng et al. 2019).

Table 3 Characteristics of the visitors at Puncak Janing Forest Eco-Park in 2019

Item	Frequency	Percent
Is this your first time to this park?		
Yes	121	40.3
No	179	59.7
Frequency of visit to the park		
First time	121	40.3
2–5 times	87	29.0
6–10 times	33	11.0
11 times and more	59	19.7
How did you learn about the eco-park?		
Internet	46	15.3
Media	28	9.3
Friend	129	43.0
Relative	90	30.0
Brochure	3	1.0
Exhibition	4	1.3
Purpose of visit to Puncak Janing		
Leisure	260	86.7
Education	18	6.0
Research	22	7.3
Travel companion		
No one	8	2.7
Couple	34	11.3
Family	123	41.0
Friends	112	37.3
Office mate	23	7.7
Would you revisit this park in future?		
Yes	274	91.3
No	26	8.7
Total	300	100

Table 4 Visitor satisfaction with the facilities at Puncak Janing Forest Eco-Park in 2019

Item	Frequency					Mean	Level
	1	2	3	4	5		
Prayer room	87 (29.0%)	105 (35.0%)	57 (19.0%)	46 (15.3%)	5 (1.7%)	2.26	1
Boardwalks	20 (6.7%)	60 (20.0%)	114 (38.0%)	83 (27.7%)	23 (7.7%)	3.10	2
No. of information boards	24 (8.0%)	45 (15.0%)	107 (35.7%)	101 (33.7%)	23 (7.7%)	3.18	2
Condition of the signage boards	17 (5.7%)	47 (15.7%)	123 (41.0%)	95 (31.7%)	18 (6.0%)	3.17	2
The trail	20 (6.7%)	47 (15.7%)	82 (27.3%)	116 (38.7%)	35 (11.7%)	3.33	2
Cleanness of the trail	18 (6.0%)	44 (14.7%)	97 (32.3%)	115 (38.3%)	26 (8.7%)	3.29	2
Parking	14 (4.7%)	44 (14.7%)	105 (35.0%)	115 (38.3%)	22 (7.3%)	3.29	2
The resting places	30 (10.0%)	103 (34.3%)	84 (28.0%)	70 (23.3%)	13 (4.3%)	2.78	2
Cleanliness of the toilets	26 (8.7%)	61 (20.3%)	114 (38.0%)	83 (27.7%)	16 (5.3%)	3.01	2
No. of toilets	23 (7.7%)	78 (26.0%)	106 (35.3%)	81 (27.0%)	12 (4.0%)	2.94	2
No. of business stalls	39 (13.0%)	109 (36.3%)	87 (29.0%)	57 (19.0%)	8 (2.7%)	2.62	2
No. of benches	24 (8.0%)	75 (25.0%)	107 (35.7%)	74 (24.7%)	20 (6.7%)	2.97	2
No. of dustbins	23 (7.7%)	63 (21.0%)	108 (36.0%)	79 (26.3%)	27 (9.0%)	3.08	2
Average						3.00	2

For a five-point Likert scale, using the formula (Highest value – lowest value) / No. of categories in statistics calculation: low (1) = 1–2.339, medium (2) = 2.34–3.669 and high (3) = 3.67–5.00

Public facilities and availability of resources such as parking, guiding services and boardwalk on tourism attraction are important tourism facilities that should be available to attract visitors (Tsaour et al. 2006).

The rest of the facilities had medium levels of satisfaction. Consequently, it is pertinent that the management improve facilities in the forest eco-park. Failure to do so would affect the benefit gained by visitors to the park. Accordingly, the introduction of an entrance fee would be feasible to facilitate the efforts.

Table 5 shows the perception of visitors towards the importance of conserving and preserving the natural resources in Puncak Janing Forest Eco-Park. All the items scored high, especially in terms of research and education, forest ecosystem services, and social impacts. Protecting flora and fauna had the highest mean score (4.37) followed by benefits for the future (4.32), fresh air (4.27) and protecting bird species (4.23). This proved that the visitors had good perception of the forest eco-park. Several studies have suggested ecotourism as one of the significant and sustainable subdivisions of tourism, which

can increase public awareness about animal habitat, conservation of plant biodiversity and environment, and wildlife protection (Shoo & Songorwa 2013, Zhuang et al. 2019, Kang 2020). Proper tourism strategies will deliver public awareness and economic inducements as well as sustainable development and nature preservation, while offering extra benefits to community well-being (Yang & Zhao 2019). Respondents also perceived the importance of ecotourism for preserving water quality (4.20). This was certainly a positive view because, according to Woodman and Min-Venditti (2016), there was always a possibility of water contamination in conservations areas.

Providing job opportunities had the lowest mean score (3.71), showing that the public had moderate perception about possible provision of job opportunities in the forest eco-park. This is because economic opportunities are limited in a forest eco-park like Puncak Janing where available jobs are mainly as tour guides and manning small business stalls such as those selling food, souvenirs and handicrafts.

Table 6 shows the mean scores of the respondents' attitudes when they visited the

Table 5 Perception on the importance of the Puncak Janing forest eco-park

Item	Frequency					Mean	Result
	1	2	3	4	5		
Research area	4 (1.3%)	6 (2.0%)	67 (22.3%)	120 (40.0%)	103 (34.3%)	4.04	3
Education area	2 (0.7%)	4 (1.3%)	47 (15.7%)	134 (44.7%)	113 (37.7%)	4.17	3
Fresh air	0	5 (1.7%)	43 (14.3%)	119 (39.7%)	133 (44.3%)	4.27	3
Water quality	0	3 (1%)	48 (16%)	136 (45.3%)	113 (37.7%)	4.20	3
Protect flora and fauna	0	2 (0.7%)	39 (13.0%)	106 (35.3%)	153 (51.0%)	4.37	3
Protect bird species	2 (0.7%)	7 (2.3%)	41 (13.7%)	120 (40%)	130 (43.3%)	4.23	3
Geology area	4 (1.3%)	6 (2.0%)	51 (17.0%)	132 (44%)	107 (35.7%)	4.11	3
Job opportunities	7 (2.3%)	29 (9.7%)	86 (28.7%)	100 (33.3%)	78 (26.0%)	3.71	3
Recreation area	0	5 (1.7%)	38 (12.7%)	139 (46.3%)	118 (39.3%)	4.23	3
Benefits to future	1 (0.3%)	5 (1.7%)	33 (11%)	120 (40.0%)	141 (47.0%)	4.32	3
Average						4.17	3

For a five-point Likert scale, using the formula (Highest value – lowest value)/ No. of categories in statistics calculation: low (1) = 1–2.339, medium (2) = 2.34–3.669 and high (3) = 3.67–5.00

Table 6 The attitude of visitors in Puncak Janing forest eco-park

Item	Frequency					Mean	Result
	1	2	3	4	5		
I pick up other people's litter and throw it in the bin	12 (4.0%)	60 (20.0%)	101 (33.7%)	87 (29.0%)	40 (13.3%)	3.28	Agree
I use water efficiently while in the amenity forest	8 (2.70%)	60 (20.0%)	90 (30.0%)	101 (33.7%)	41 (13.7%)	3.36	Agree
I bring food containers when buying food at food stalls in the amenity forest area	17 (5.7%)	67 (22.3%)	111 (37.0%)	71 (23.7%)	34 (11.3%)	3.13	Agree
I watch documentary related to Malaysian forest biodiversity	19 (6.3%)	61 (20.3%)	115 (38.3%)	82 (45.3%)	23 (7.7%)	3.26	Agree
I am involved in an awareness programme on the importance of forest conservation	33 (11.0%)	72 (24.0%)	107 (35.7%)	65 (21.7%)	23 (7.7%)	2.91	Disagree
I buy forest products (example: rattan)	19 (6.3%)	80 (26.7%)	104 (34.7%)	73 (24.3%)	24 (8.0%)	3.01	Agree
I choose to share a car if going to the amenity forest	17 (6.0%)	52 (17.3%)	95 (31.7%)	95 (31.7%)	41 (13.7%)	3.30	Agree
I carry a recyclable bag when going to the amenity forest	18 (6.3%)	57 (19.0%)	108 (36.0%)	82 (27.3%)	35 (11.7%)	3.20	Agree
I keep rubbish if I do not find rubbish bins when in the amenity forest	14 (4.7%)	56 (18.7%)	95 (31.7%)	97 (32.3%)	38 (12.7%)	3.30	Agree
I will separate food waste from other wastes before throwing it in the trash	27 (9.0%)	74 (24.7%)	95 (31.7%)	62 (20.7%)	42 (14.0%)	3.06	Agree
Average mean						3.18	Agree

Note: < 2.00 = strongly disagree, 2.01–3.00 = disagree, 3.01–4.00 = agree, 4.01–5.00 = strongly agree; adapted from Budiani et al. (2018)

Puncak Janing Forest Eco-Park. In terms of levels of attitude, generally all items scored more than 3, implying a medium level of attitude towards environmental aspects in the forest-eco-park. The highest mean scores were for saving water (3.36), car pooling and taking litter home if no rubbish bin was found (both 3.30), picking up other people’s litter (3.28), followed by watching documentary related to Malaysian forest biodiversity (3.20), bringing food containers from home (3.13), separating food wastes (3.06) and buying forest products (3.01). The lowest mean score was engaging in volunteer activities (2.91). The average value of 3.18 implied moderate level of visitors’ attitude towards environmental conservation.

Probit regression analysis

From the probit regression analysis, the pseudo r^2 was 0.0339 for the single bound CVM, which meant that only 3.4% of the bid variables were explained by the dependent variables in this model; while for the double bound CVM, it was found to be greater at 27.86% (Table 7). Hence, the following discussion would be based on the latter. For the double bound CVM, of all the variables tested, education, attitude of respondents, and travel companion were found to be significant. A negative coefficient for bid value found in single bound CVM implied a negative relationship between the amount of bid and the WTP, consistent with the demand theory. For example, the higher the bid value,

the higher the probability for the respondent to disagree to WTP. A positive coefficient for education level implied that this factor had more influence on the decision of the respondents towards WTP. Thus, the higher the education level, the higher the probability of saying yes to WTP. Such positive relationship had been observed by Witt (2019) and Zaiton et al. (2019). Attitude of respondents of the Puncak Janing Forest Eco-Park had significant positive influence on their WTP for conservation fees. The number of travel companions had negative significant relationship with the WTP. To date, studies have yet to inculcate this variable, especially family composition, into the double bound CVM model. Thus, this finding could not be compared with other works. Large families are not uncommon in Malaysia and this meant that it would be costlier for such families to pay individual fees on per entry basis when travelling together. Therefore, determining WTP household⁻¹ year⁻¹ would certainly be more acceptable to these families.

Estimation of WTP

The results showed that estimation of WTP household⁻¹ year⁻¹ based on the double bound CVM was RM18.53, which was lower than the single bound CVM (RM33.37) (Table 8). Hence, following the best model with higher r^2 , the WTP estimation based on the double bound CVM in this study had been proposed to policy makers. Findings of this survey clearly showed that there

Table 7 Single bound and double bound contingent valuation methods

Single bound modified				Double bound modified			
Variable	Coefficient	Std. error	Significance	Variable	Coefficient	Std. error	Significance
Constant	1.088499**	0.4288413	0.011	Constant	7.582788***	0.4904948	0.000
Bid1	-0.0543911***	0.0175695	0.002	Education	1.595364**	0.6169265	0.010
Attitude	0.2297531*	0.1305762	0.078	Attitude	2.583889***	0.6864379	0.000
				Travel companion	-3.483412**	1.629871	0.033
r^2	3.39				27.86		

Table 8 Estimation of willingness to pay (WTP) household⁻¹ year⁻¹

WTP estimation single bound			WTP estimation double bound		
Coefficient	Standard error	Significance	Coefficient	Standard error	Significance
33.37468***	6.515729	0.000	18.53515***	0.541167	0.000

was a possibility for the management of Puncak Janing Eco-Forest Park to impose a moderate entrance fee based on one-time annual charges without worrying about an associated decrease in visitation.

CONCLUSIONS

One of the strategies for sustainable recreation and ecotourism is developing recreational forest landscapes for better protection of natural resources. Forest recreation comprises three essential components of sustainability, namely, environmental, social and economic. It is necessary to understand ways to conserve and manage the park. Forest environments are valuable and need to be protected for human well-being, climate stability and biodiversity conservation. Development without proper planning will affect the balance of nature, such as soil, water, air and climate, plants and animals, diversity, characteristic features and beauty, and the recreational value of nature as well as the existing and foreseeable landuses.

This survey involving 300 respondents showed that forest planning in Puncak Janing Forest Eco-Park needed to be improved in order to maintain and enhance the recreational value of the forest towards sustainability forest ecosystem services. The results of the study showed that visitors were willing to pay RM18.53 for entrance fee, which would contribute to conservation of the park. The study showed that three visitor characteristics, namely, level of education, attitude of the respondents, and travel companion impacted WTP estimates for entrance fee.

The management system of the Puncak Janing Forest Eco-Park can use the information and implement a suitable pricing on the conservation fee for visitors. As the respondents with higher education level were more willing to pay for conservation fee, the park management could promote the park to visitors with higher education by visiting local universities and giving talks and awareness about the park.

ACKNOWLEDGEMENTS

The authors thank Ho YM, Mohd Yusoff I, Zakiah P and Rosta H from the Faculty of Forestry and Environment, Universiti Putra Malaysia and Kunjuraman V from the Faculty of Hospitality, Tourism and Wellness, Universiti Malaysia

Kelantan for validating the questionnaire of this research.

REFERENCES

- ADHIKARI S & BARAL H. 2018. Governing forest ecosystem services for sustainable environmental governance: a review. *Environments* 5: 1–13. <https://doi.org/10.3390/environments5050053>
- BUDIANI SR, IFFANI M, NOVIANTI I, ALFANA MAF, HARINI R & ROFI A. 2018. User satisfaction level of parking space facility: a case of Faculty of Geography, Universitas Gadjah Mada, Indonesia. *IOP Conference Series: Earth and Environmental Science. Volume 148. International Conference on Environmental Resources Management in Global Region (ICERM 2017)*. 25 November 2017, Bali.
- FLETCHER R. 2019. Ecotourism after nature: Anthropocene tourism as a new capitalist “fix”. *Journal of Sustainable Tourism* 27: 522–535. <https://doi.org/10.1080/0969582.2018.1471084>
- FDPM (FORESTRY DEPARTMENT OF PENINSULAR MALAYSIA). 2017. Total area in Ayer Keroh Recreational Forest, Melaka. Retrieved August 5, 2019, from <http://www.forestry.gov.my>.
- KAMRI T. 2014. *Economic Values of Conservation and Management Attributes in Bako National Park, Sarawak, Malaysia*. PhD dissertation, Universiti Putra Malaysia, Serdang.
- KAMRI T, ALI JK & HARUN NF. 2017. Willingness to pay for conservation of natural resources in Santubong National Park. *Jurnal Manajemen dan Kewirausahaan* 19: 16–21. <https://doi.org/10.9744/jmk.19.1.16-21>
- KANG MS, SON HY & PARK SK. 2015. A study on the recreational forest: evidence from Korean recreational forests. *Advanced Science and Technology Letters* 101: 59–63.
- KANG S. 2020. Impact and protection of eco-tourism activities in nature reserves on animal habitat. *Revista Científica-Facultad de Ciencias Veterinarias* 30: 2710+.
- MATTHEW NK. 2015. Economic valuation of Kilim Karst Geoforest Park, Langkawi, Malaysia. Master thesis, Universiti Putra Malaysia, Serdang.
- MOHD A, YAMAN AR, KEAT TC & WAI YH. 2005. Campers' characteristic, recreation activities and related forest camping attributes in Shah Alam Agriculture Park, Selangor. *Journal of Applied Sciences* 59: 1546–1552.
- PALLANT J. 2016. *SPSS Survival Manual: A Step by Step Guide to Data Analysis using SPSS Program. Sixth edition*. McGraw-Hill Education, London.
- PARMAWATI R, IMANIYAH RA, ROKANI LE ET AL. 2018. Ecotourism development strategy of Bukit Jaddih Karst, Madura. *Journal of Indonesian Tourism and Development Studies* 6: 113–119.
- PLATANIA M & RIZZO M. 2018. Willingness to pay for protected areas: a case of Etna Park. *Ecological Indicators* 93: 201–206. <https://doi.org/10.1016/j.ecolind.2018.04.079>
- PRADO PK, SANTOS AF, WOJCIECHOWSKI JC ET AL. 2017. Environmental fragility of the forest fragments of the Crystal State Park, by metrics of the landscape. *Nativa: Pesquisas Agrárias e Ambientais* 5: 548–554. <http://dx.doi.org/10.5935/2318-7670.v05nespa13>
- RAMLAN MA, RADAM A, YACOB MR & YAHYA NA. 2011. Willingness to pay towards the sustainability of

- Forest Research Institute Malaysia's (FRIM's) canopy walkway. *International Journal of Business, Management and Social Sciences* 2: 85–92.
- RIBEIRO SM, SOARES FILHO B, COSTA WL ET AL. 2018. Can multifunctional livelihoods including recreational ecosystem services (RES) and non-timber forest products (NTFP) maintain biodiverse forests in the Brazilian Amazon? *Ecosystem Services* 31: 517–526. <https://doi.org/10.1016/j.ecoser.2018.03.016>
- SABRAN NB, MARIKAN DAA & SHUIB A. 2019. Introductory on conservation participation, willingness to pay (WTP), mangrove forests, and ecotourism: a review. *International Journal of Business and Social Development (IJBSD)* 1: 43–53.
- SHOO RA & SONGORWA AN. 2013. Contribution of ecotourism to nature conservation and improvement of livelihoods around Amani Nature Reserve, Tanzania. *Journal of Ecotourism* 12: 75–89. <https://doi.org/10.1080/14724049.2013.818679>
- TSAUR SH, LIN YC & LIN JH. 2006. Evaluating ecotourism sustainability from the integrated perspective of resource, community and tourism. *Tourism Management* 27: 640–653. <https://doi.org/10.1016/j.tourman.2005.02.006>
- TSENG ML, LIN C, REMEN LIN CW ET AL. 2019. Ecotourism development in Thailand: community participation leads to the value of attractions using linguistic preferences. *Journal of Cleaner Production* 231: 1319–1329. <https://doi.org/10.1016/j.jclepro.2019.05.305>
- WITT B. 2019. Tourists' willingness to pay increased entrance fees at Mexican protected areas: a multi-site contingent valuation study. *Sustainability* 11: 3041. <https://doi.org/10.3390/su11113041>
- WOODMAN CJ & MIN-VENDITTI AA. 2016. Policy, drinking water quality, and human health in remote eco-tourism. *Applied Biodiversity Science: Perspectives Series* 6: 39–42.
- YANG YL & ZHAO Z. 2019. Tourism value assessment of typical wildlife reserves. *Revista Científica-Facultad de Ciencias Veterinarias* 29: 406–415.
- ZAITON S, HUDA-FARHANA MM & HASAN-BASRI B. 2019. Conservation of mangroves in Kuala Perlis, Malaysia: a case study of socio-economic attributes of fishermen driving valuation in sustaining livelihoods through forest management. *Journal of Tropical Forest Science* 31: 433–442. <https://doi.org/10.26525/jtfs2019.31.4.433>
- ZHUANG Z, YAN S & YILIN Y. 2019. Analysis on the eco-tourism protection and development mode of Boluo Lake wetland nature reserve in Jilin Province. *The Frontiers of Society, Science and Technology* 1: 46–50. <https://doi.org/10.25236/FSST.19010509>
- ZIKMUND WG. 2010. *Business Research Methods. Eighth edition.* South Western Cengage Learning, Boston.