

# Profiling the Segments of Visitors in Recreational Forests

Journal of Tourism, Hospitality  
& Culinary Arts (JTHCA)  
2022, Vol. 14 (1) pp 01-15  
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UiTM Press  
Submit date: 18<sup>th</sup> July 2021  
Accept date: 03<sup>rd</sup> November 2021  
Publish date: 31<sup>st</sup> May 2022

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## Proposed citation

Matthew, N. K., Tom, C. K., & Kunjuraman, V. (2022). Profiling the segments of visitors in recreational forests. *Journal of Tourism, Hospitality & Culinary Arts*, 14(1), 01-15.

## Abstract

The identification and understanding of the needs of the customers are important. Failure to do such would fail to address the needs of visitors. On the same note, there is a lack of data on visitors' profiles and perceptions on the facilities and services given in the forest. Hence, this study has focused on the distinction between the socio-demographic, characteristics of the visit, and customers' satisfaction of the recreation and facilities of a popular recreational site, namely, the Melaka Botanical Garden in Melaka. On-site data were collected from a sample of the visitors. The satisfaction levels of the visitors were evaluated using the perception analysis. The study found that the majority of the respondents in the MBG were male adults between 25 to 54 years old, had completed at least diploma level education, single, came from the Melaka state, students, recreational activities as purpose of visit, almost three quarters of the respondents were willing to donate for the annual donation for conservation and management of the recreational forest, and the visitors had a medium level of satisfaction with the facilities. The outcome is expected to be a guide for the operators of recreational forests to arrange and improve any recreational site.

## Keywords:

Characteristics of the visit, Recreational forest; Satisfaction; Socio-demographic; Visitor profiling

## 1 Introduction

A forest is an important natural resource because humans continuously consume both the natural goods and services from it (Mohd Salim, Azmi, Ahmad, & Salam, 2013). The Global Forest Resources Assessment 2015 clarified that the forests are playing vital roles in solving socio-economic problems, such as rural poverty, ensuring food security, and maintaining mid-term green growth opportunities (Food and Agriculture Organization of the United Nations [FAO], 2016). In addition, forests also provide us with ecological services. For example, the forests keep purifying the air and water; moreover, they are also involved in moderating climate change worldwide (FAO 2016). However, the Global Forest Resources Assessment 2015 also revealed a truth, which is that, globally, natural forests are now experiencing decreases in the size of their areas in unit hectares (FAO 2016). In 2015, the average annual deforestation among 234 countries and territories had increased by about 1.57%. Meanwhile, the percentage of global natural forests had dropped by about 0.24%.

In Malaysia, our nation's land surface was almost completely covered with the natural green forests in the past. Yet, as the country's economy is still rapidly developing, this is leading to deforestation becoming a huge environmental problem for Malaysia's green forests. Poverty, growing population, and economic development has always been a major factor affecting forest cover in our land (Rahim & Puay, 2017). Besides deforestation, the forests in Malaysia are still facing other issues, such as unsustainable forest logging, illegal taking out of forest products, and encroachment (Yeo, 2013). In Peninsular Malaysia, a total of 130 recreational forests (also known as amenity forests) have been established for the public recreational purposes (A Rahman & Ismail, 2009). Recreational forests can provide natural goods and ecological services just like the other types of forests. In Malaysia, the recreational forests are governed by the Department of Forestry. A recreational forest represents an attraction to the local public or tourists in a state. For indirect usage, the public can enter the recreational forest for recreational and aesthetic purposes. The recreational forest can also contribute to the national economic development. For example, in the state of Terengganu, the state government claimed that about 20% of their tourism products have been basically based on the attraction of recreational forests within the state of Terengganu (Mohd Salim et al., 2013). Therefore, we can conclude that recreational use has brought significant benefits to us.

In Melaka, out of the total forested land (5,386 ha), 436.40 ha have been gazetted as recreational forests. These include the Melaka Botanical Garden (92.50 ha), Bukit Batu Lebah Recreational Forest (208.00 ha), Bukit Batu Lebah Recreational Forest (55ha), and Tanjung Tuan Recreational Forest (80.97ha) (Forestry Department of Peninsular Malaysia, 2018). Out of these, the Melaka Botanical Garden was chosen for this study as it serves as a green lung to the people in Ayer Keroh, Melaka, while being the oldest recreational forest gazetted in the Melaka state. Visitor arrivals to Melaka showed an increase from 9800 (2017) to 11782 (2018) (See Table 1). However, no international visitors stayed in the forest. The increase in visitor arrivals has necessitated

the need to identify the visitors' satisfaction levels of the facilities and services in the forest to enhance the benefits from their visitations. Currently, there is a lack of data on domestic visitors' profiles and perceptions on the facilities and services given in the park. After their visits, there is a need to examine the data identified and the opinions on what the visitors had seen in the forest. The outcome is expected to be a guide for the operators of recreational forest for arranging and improving any recreational site. Other than that, it is also important to know the updated situation of the recreational forest.

Table 1: Melaka botanical garden (forest stay) domestic visitor statistics.

Month	Year	
	2017	2018
January	747	480
February	511	1847
March	1229	2450
April	1275	2650
May	720	960
June	192	1520
July	1946	1875
August	1200	0
September	900	0
October	530	0
November	450	0
December	100	0
Overall	9800	11782

Threats to nature always come together with the increasing number of visitors (Mohd Salim et al., 2013). Just like other tourism points, the Melaka Botanical Garden (MBG) is currently facing several problems based on the site observations and survey. The issues include problems such as littering, vandalism of the sports equipment, solid waste dumping, and broken signboards.-In terms of the literature, a few studies have been found which have been conducted in the MBG. These include a study on the satisfaction towards recreational facilities and services (A Rahman, 2007). However, the findings are outdated now. Hence, understanding the visitors' preferences towards nature appreciation, infrastructure, and other attributes of protected environmental areas is crucial (Hearne & Salinas, 2002).

The objectives of this study include determining the socio-demographics and characteristics of the visitors to the Melaka Botanical Garden and identifying the satisfaction levels of the visitors towards the current facilities' conditions in the Melaka Botanical Garden.

## 2 Literature Review

### 2.1 Segmenting Visitors

#### 2.1.1 Visitor Profile Tourism

There are various factors that influence tourism productivity. The factors include financial and economic uncertainty, urban development, security and safety hazards, health issues, and limitations of aviation transportation. Moreover, tourists are anticipated to have different behaviours because of difficulties in local economic expansions and social, political, and pandemic issues (Fennell & Copper, 2020).

As of recently, market segmentation has been becoming even more important in the era of smart and emerging technologies as enterprises are aiming at specific markets (Khazaei, 2020). Travelers are heterogeneous and are not all similar; as such, they have various expectations of their trip. Understanding consumer behaviour along with their intentions to choose any service or product is crucial for every business to survive (Khazaei, 2019). In the market segmentation process, customers (tourists) are being grouped into market divisions which comprise members that are the same as each other. That is a strategic procedure of categorising them according to various demands, behaviour, or characteristics. This segmentation has a tactical implication for understanding and predicting customers' behaviour (Ahani, Nilashi, Ibrahim, Sanzogni, & Weaven, 2019). Businesses involved in the tourism industry, along with researchers, utilise market segmentation to recognise the prospects for competitive advantage in the tourism industry (Perera, Sprechmann, & Bourel, 2020). Segmentation has been broadly applied in the tourism businesses by using the visitors' demographics (Lee, Jeong, & Qu, 2020), psychographics (Reisinger, Mostafa, & Hayes, 2019), behaviour (Ahani et al., 2019), and benefits (Perera et al., 2020). Benefit segmentation is a powerful method for grouping consumers (Perera et al., 2020). Various groups of tourists will have various needs from the use of a service or a tourism associated product (Kamata, 2020). A study by Fu et al. (2020) showed that Market based segmentation affects the relationship among tourism demand and the residents' quality of life while both quality of life and tourism demand support the local economic growth in Hong Kong.

Many of the globe's biggest tourism brands or destination promotion businesses use destination analysis to recognise their focused market by creating precise visitor profiles. They work to gather the visitors' profile information from the department of tourism, municipalities, state attractions, and hotels, and by having international and national research experiments (Nissen & Francis-Cummings, 2019).

The Visitor's Profile can influence the design of a new service or product or support refining the existing tourism capabilities to ensure that they are providing the best service to visitors (Jonas, Radder, & van Eyk, 2019). Visitor Profiling has been developed to aid the tourism businesses in their business decision making process by offering knowledge about the visitors, including their preferences, behaviours, expectations, and motivations in choosing certain destinations. This information facilitates the better

understanding of visitors' needs and gaining more strategic marketing insights of the businesses in this industry. As a result, they will be able to estimate visitor volume and spending more accurately, and more effectively position themselves as a "must visit destination" to future travelers (Masseno & Santos, 2019). The selection based on personal attributes may be guided by experiences with the local markets or practical considerations (Schamp, Heitmann, & Katzenstein, 2019).

Heritage tourism, for instance, looks for sole experiences related to the history and customs of the destinations, and this connection between the tourists and the destination's tradition supposes not only a recreational experience but also a way of being familiar with the culture of the visited places (du Cros & McKercher, 2020). If those cultural values are linked by an attractive natural heritage, the tourism can contribute even more to local sustainability and an enhancement of the living environments and economic, human and social progress within the local community, especially in destinations in developing countries (González Santa Cruz, Torres-Matovelle, Molina-Molina, & Pérez Gálvez, 2019). In such destinations, it is helpful if the income generated by tourism becomes a tool for the reasonable and comprehensive advancement of the cities and towns (González Santa Cruz et al., 2019).

Tourists may also be divided into different groups based on destination management or common sense segmentation for further data analysis (Wen & Huang, 2019). The majority of the tourist destinations might use country of origin as a classification measure (Wen & Huang, 2019). Tourists will be segmented from different countries of origin to establish customised marketing policies for each country. Even if this technique is not the most sophisticated, country of origin segmentation offers major practical advantages of taking such an approach: most countries of origin speak a different language which requires customised messages to be developed anyway, and each country of origin has different media channels (Díaz-Meneses, 2019).

### **3 Methodology**

#### **3.1 Case Study Area**

Melaka Botanical Garden (MBG, formerly known as Ayer Keroh Recreational Forest) founded on June 1, 2006. The exact area size of the Melaka Botanical Garden (MBG) is 92.5 hectares (Forestry Department of Melaka, 2012). In MBG, there are plenty of monkeys (scientifically known as *Macaca fascicularis*). Beside the monkeys, the forest also consists of various types of tree species. For example, *Pterocarpus Indicus* (or local name, *Pokok Sena*) and *Artocarpus lanceifolius*, (or local name, Keledang-Keledang). The tree species scientific names as well as their local names have been labelled well. There are different facilities available there, such as accommodation, camping site, and jungle trekking. Recently, the MBG has offered an adventure park, Skytrex Adventure. This allows the visitors to have more recreational options there. Basically, the visitors can carry out various recreational activities there, such as picnicking or cycling. Also, the MBG is a very ideal place for jogging lovers.



Figure 1: The boundary of the MBG in Melaka state

### 3.2 Data Collection

Prior to the data collection, the pretesting and pilot study were conducted to improve the quality and accuracy of the questionnaire. The purposes to carry out the pretesting and pilot study were to examine the validity and reliability of the designed questionnaire. The pretesting was conducted on 20 students in UPM to identify whether the questions and responses in the questionnaire were valid. From the pretesting, the modifications and amendments of the questionnaire content were made based on the responses and suggestions. Next, a pilot study was conducted on 30 of the visitors in the MBG to check for the reliability of the scale in the satisfaction section. The collected data were coded and analysed by using the Statistical Package for Social Sciences-version 25 (SPSS 25). Based on the result, the value of Cronbach's Alpha was 0.8. According to Pallant (2016), a value of 0.8 or above is preferable. Therefore, the scale items under this section were accepted.

Primary data were collected using questionnaires from visitors to the MBG. The survey questionnaire was chosen because this method encourages high response rates, offering actionable data as well as allowing respondent anonymity to be maintained

(Debois, 2019). A five-point Likert scale (ranging from 1: Very unsatisfied to 5: Very satisfied) was used to measure a visitor’s satisfaction level. Next, based on the total number of visitor arrivals in 2018 (11,782), the sampling table showed that an amount of at least around 370 had to be collected as the sample (Johnson, Christensen, & Turner, 2014). Hence, 400 usable questionnaires were obtained. The visitors were selected using the convenience sampling in the MBG.

Table 2: Sample size table

N	N	N	n	N	n	N	N	N	n
10	10	130	97	250	152	950	274	10,000	370
20	19	140	103	260	155	1,000	278	20,000	377
30	28	150	108	270	159	1,100	285	30,000	379
40	36	160	113	280	162	1,200	291	40,000	380
50	44	170	118	290	165	1,300	297	50,000	381
60	52	180	123	300	169	1,400	302	75,000	382
70	59	190	127	400	196	1,500	306	100,000	384
80	66	200	132	500	217	2,000	322	250,000	384

## 4 Results and Discussion

### 4.1 Socio-Demographic Characteristics

The socio-demographic profile plays an important role in understanding a visitor’s behaviour. Table 3 reports the socio-demographic profiles of the respondents in terms of percentages and frequencies. The findings revealed that more than half of the respondents in the MBG were male (59.8%) as compared to females (40.3%). This implies that the attractions and activities available in the MBG are slightly more attractive to males than females. This was also evident in a study conducted by Matthew et al., (2019) in the context of the forest in Endau Rompin National Park. A larger proportion of the respondents were adults between 25 to 54 years old (66.2%). The findings, however, are in contrast to Abdullah et al., (2005) in which they reported a larger proportion of young visitors to the recreational site in Malaysia. Considering the education level, most of them (65.3%) had completed at least the diploma level. These findings are consistent to the findings of a study of Endau Rompin National Park, Johor, in which the majority of the respondents were university graduates or above (Matthew, Ahmad, Ramachandran, Syamsul-Herman, & Zaiton, 2018).

A higher education level is associated with greater awareness and appreciation of the environment (Matthew, Shuib, Ramachandran, & Herman, 2014). Next, the proportion of those who were single (54.2% + divorced 1.1%) at 55.3% outnumbered those who were married (44.8%). This is in line with a study undertaken by Thalany, (2014) where a larger share of singles was also reported. As well, most of the respondents (62.7%) came from the Melaka state as it was near to them. Regarding their

jobs, there was not a large difference in terms of the proportion of government employees (14.7%), Self-employed (18.8%), and private employees (23.3%); yet the proportion of students was the highest (26.8%). This is in line with an opinion that is a common scenario in many recreational areas, which is to find visitors made up of mostly unmarried youths as they have fewer obligations to family or jobs (Abdullah et al., 2005).

Table 3: Socio demographic of the respondents

Items	Frequency (n)	Percentage (%)
Gender		
Male	239	59.8
Female	161	40.3
Age Group		
18-24	103	27.6
25-54	247	66.2
55-64	18	4.8
65 and above	5	1.3
Education Level		
Primary education	33	8.3
Secondary education	106	26.5
Diploma	66	16.5
Bachelor's degree	175	43.8
Master's / PhD Degree	20	5.0
Marital Status		
Married	167	44.8
Single	202	54.2
Others (divorced)	4	1.1
Origin		
Melaka	311	77.8
Johor	14	3.5
Kelantan	2	.5
Kuala Lumpur	11	2.8
Negeri Sembilan	16	4.0
Pahang	3	.8
Perak	6	1.5
Pulau Pinang	1	.3
Putrajaya	1	.3
Sarawak	4	1.0
Selangor	29	7.2
Singapore	1	.3



Terengganu	1	.3
Job Category		
Government employee	55	14.7
Self-employed	70	18.8
Students	100	26.8
Homemaker	35	9.4
Private employee	87	23.3
Retired	26	7.0

## 4.2 Characteristics of the Visit

The results in Table 4 show that there was not much difference in the proportion of those who came alone (29.5%) or with family/relatives (33.8%) and friends (29.5%). The next, half of the respondents visited the MBG to carry out recreational activities, per se (48%), while the rest for psychological benefits. Most of the respondents got to know of the MBG since they were residents in Melaka. Also, the findings revealed that, 309/400 (77%) of the respondents or almost three quarters, were willing to donate for the annual donation as a contribution to the ecological conservation and management of the forest and so that the forest persistently benefits the future generations.

Table 4: Characteristics of the visit

Items	Frequency (n)	Percentage (%)
Travel companion		
Alone	118	29.5
Family/Relatives	135	33.8
Friends	118	29.5
Group	29	7.3
Main purpose of visit		
To observe the beauty of nature	64	16.0
To obtain a feeling of harmony with nature	43	10.8
To enjoy the natural sounds	20	5.0
To experience the smells of nature	31	7.8
To get away from my everyday routine	49	12.3
To carry out recreational activities in nature	192	48.0
To practice a healthy lifestyle	1	.3
Source of information		
Brochure	13	3.3
Tourism agency	12	3.0
Electronic advertisement	13	3.3

Word of mouth (example from friends)	69	17.3
Social media (example: Facebook, Twitter, Instagram)	42	10.5
I am a local resident	251	62.7
Willingness to donate (n=309)		
To conserve the biodiversity	61	19.7
As a contribution to the ecological conservation and management of the forest	123	39.8
To ensure that the forest continuously provides benefits for future generations	125	40.4

\* 91 of the respondents were not willing to donate

Source: Survey (2019)

### 4.3 Satisfaction of the Facilities

Overall, the results in Table 5 have shown that the scores for all the items fell into the level 2 category (medium satisfaction level). Consistently, the average mean score was 3.12. This shows a slight increase in the average score of 2.88 in comparison to a study conducted by Rahman (2007) in the same recreational forest (A Rahman, 2007). Out of all the items, the highest score of 3.74 was denoted for the parking comfort, while the lowest score was for cleanliness of toilets (2.59). Hence, overall, the findings should prompt the recreational forest management on the need to improve all the facilities mentioned below to enhance the visitors' experiences.

Table 5: Satisfaction of the facilities in the Melaka Botanical Garden

	N	Mean	Level	Std. Deviation
Camping site	307	3.20	2	.852
Bicycle rental	371	3.19	2	.755
Buggy rental	364	3.22	2	.716
Library	297	3.16	2	.833
Number of rubbish bins	393	3.24	2	.853
Condition of rubbish bins	395	3.04	2	.905
Multipurpose field (for conducting activities or programmes)	375	3.37	2	.763
Condition of jogging pathway	396	3.41	2	.817
Pavilions/Gazebos	382	3.18	2	.821
Resting chairs	398	3.05	2	.857
Exercise equipment	375	2.80	2	1.073
Number of toilets	387	2.80	2	.952
Cleanliness of toilets	387	2.59	2	1.015
Condition of facilities inside toilets	387	2.67	2	1.030
Number of signage boards	397	3.02	2	.830

Condition of signage boards	396	2.87	2	.949
Manmade landscapes (pool, waterfall)	396	3.43	2	.890
Surau	284	3.23	2	.842
The dinosaur and wildlife statues	378	3.15	2	1.006
Parking zone	398	3.74	2	.922
Condition of the canopy walk	350	3.42	2	.959
Overall mean		3.13	2	

*\*The satisfaction levels of the visitors towards the facilities in the AKRF were measured by the mean value for each item. For the Five-Point Likert Scale: using the formula: (Highest value – lowest)/ No. of categories in statistics calculation: levels were = (5-1)/3: 1.333 hence the first level: low (1) started from (1+1.333) 1-2.339, Medium (2): 2.34-3.669, and High (3): 3.67-5.00.*

Source: Survey (2019)

## 5 Conclusion

This study investigated the socio-demographics and characteristics of the visit of the respondents (visitors) and their satisfaction levels of the facilities in a recreational destination. The recreational activities in the MBG have a solid potential to distinctly set-up a well-known recreational site with its strategic location, natural resources, and facilities, alongside the always developing interest of urban individuals for the end of the week relaxation goals with solid enthusiasm for adventure. This review can illuminate plans for practical administration and vital administration which highlight the recreational forest. The study found that the majority of the respondents in the MBG were male adults between 25 to 54 years old, had completed at least a diploma level of education, single, came from the Melaka state, students, and recreational activities as the purpose of their visit, almost three quarters of the respondents were willing to donate for the annual donation for conservation and management of the recreational forest, and the visitors had a medium level of satisfaction with the facilities. Such information is crucial in understanding the profile of visitors to the recreational forest for monitoring purposes per se. It could also be useful for future marketing efforts of the MBG.

Considering the discussion, the following recommendations may be useful. In terms of facilities, the study proposes a further improvement of all the facilities available in the MBG washrooms, condition of signage boards, and exercise equipment since those items recorded the lowest mean scores. On the same note, a donation box can be allocated at the entrance for those willingly wanting to donate. There can be 2 boxes where one is for ecological conservation and management, while the other is particularly aimed at the facilities' improvement and maintenance.

Despite that, this review is among the limited reviews on recreational forests, per se, in Malaysia and comprises limitations. This study examined the socio-demographic characteristics, characteristics of the visit, and satisfaction of visitors towards the facilities and recreational activities in the MBG, which is one of the popular recreational

sites in Melaka state. Hence, this study does not generalise for all recreational forests, per se. Similar studies should be undertaken in other parts of the country and the findings could be compared with the findings of the current study. Further studies can be developed in recreational forests in Malaysia and overseas across the globe. The findings from this study may be beneficial for service providers. This could pave the way towards identifying the appropriate measures to the arrivals.

## **6 About the Author**

Nitanan Koshy Matthew completed his Doctor of Philosophy in Natural Resources and Policy Studies with specialization in resource economics from the Universiti Putra Malaysia (UPM) on 28<sup>th</sup> February 2018 with CGPA 4.0. He was awarded Graduate on Time (GOT) for the completion of PhD in 3 years' time. His area of interest includes environmental economics, natural resource economics, forestry economics and tourism economics. Currently, Dr Nitanan is a Senior Lecturer in the Department of Environment, Faculty of Forestry and Environment.

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