

Managing Visitor Experiences in National Parks: Factors Influencing Visitation to Tanjung Piai and Pulau Kukup, Malaysia

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ABSTRACT

National parks play an important role in biodiversity conservation while contributing to tourism development and local economic growth. Despite increasing interest in nature-based tourism, limited research has examined the factors influencing visitation to Malaysian national parks, particularly day-visit parks. This study investigates the factors influencing visitation to two Johor National Parks, Tanjung Piai and Pulau Kukup. A quantitative cross-sectional survey was conducted using interviewer-administered questionnaires with 180 visitors. Descriptive statistics were employed to examine visitors' socio-demographic characteristics and satisfaction with park attributes, while qualitative content analysis was used to analyse visitors' suggestions for improvement. The findings of the study show that visitors were majority Malaysian, working adults from Johor who visited the parks during weekends using private vehicles. Overall satisfaction was high, particularly regarding the parks' peaceful environment, aesthetic appeal, cleanliness, and availability of park information. However, supporting facilities and accessibility via public transport received comparatively lower ratings. Content analysis further revealed that maintenance and repair, shaded resting areas, sanitation, visitor facilities, accessibility, interpretive signage, and wildlife management were the most frequently suggested areas for improvement. The findings provide valuable insights for the Johor National Parks Corporation in prioritising infrastructure enhancement, visitor experience management, and sustainable tourism planning to encourage repeat visitation while supporting long-term conservation objectives.

Keywords: National Park visitation; Visitor satisfaction; Nature-based tourism; Sustainable tourism; Park management; Johor National Parks.

INTRODCUTION

Malaysia attracts both domestic and international travelers due to its rich natural heritage and diverse landscapes. Among its key attractions are its national parks, which are recognised for their exceptional biodiversity and wide variety of flora and fauna (Teck & Hua, 2024). National Parks Association of NSW Australia highlighted the importance of national parks as parks that normally provide a few values, such as natural, economic, social & cultural and health & wellbeing (National Parks Association of NSW, 2026). The same values have been stressed by LEMAP (2025).

These protected areas play a vital role in conserving biodiversity, safeguarding natural habitats, and providing refuge for endangered and threatened species. Beyond their ecological significance, national parks also contribute to environmental education, scientific research, recreation, and sustainable tourism development. Ensuring a positive visitor experience and encouraging repeated visitation are essential for the long-term sustainability of national parks. However, Zhan et al. (2021) highlighted the limited number of studies examining the relationship between park visitation and revisiting intention. Their findings suggest that visitors who derive

enjoyment from their park experience and perceive improvements in their mental and physical well-being are more likely to revisit. Likewise, Wang and Tang (2017) reported that revisiting intention is influenced by the park's spatial attributes in combination with visitors' socio-demographic characteristics. Furthermore, visitation frequency has been linked to individual factors, such as the availability of leisure time during the work week, which can significantly affect an individual's opportunity to revisit parks (Zhan et al., 2021).

In addition to their ecological importance, national parks contribute significantly to local economic development through tourism. Understanding the factors that influence park visitation can facilitate more accurate forecasting of tourism demand and support strategic planning for infrastructure development, employment generation, and income creation. Furthermore, examining visitors' knowledge, attitudes, and behavioural intentions towards the environment provides valuable insights for conservation management. Such understanding can inform the development of effective environmental education and awareness programmes, encourage environmentally responsible behaviour among visitors, and strengthen public support for biodiversity conservation and the long-term sustainability of national parks.

However, most of the research conducted so far has focused on urban parks rather than national parks (Kamarul & Nasir, 2021; Sani et al., 2023; Wang et al., 2021; Zeng & Liew, 2023; Zhan et al., 2021). Therefore, there is a need to develop and utilise more integrated conceptual frameworks that help explain park visitation behaviour, so that the insights on the motivations and experiences of users could be better articulated.

Besides, past studies on Tanjung Piai have mainly addressed environmental and ecological issues rather than tourism and visitor behaviour. Studies of soil variables and bacteria (Jeyanny et al., 2021), gut contents of mangrove gastropod species (Hassan et al., 2021), avian diversity (Yatim et al., 2019), mangrove accretion and mangrove depletion (Hamid, 2022), and safety among the visitors in the park (Sidi et al., 2018) are some examples of such studies. Other studies that have been conducted on Tanjung Piai include the study of endocrine-disrupting chemicals (Ismail et al., 2020), physicochemical variability of mangrove islands (Lim et al., 2022), and the use of remote sensing technology for mangrove mapping and change detection (Chen et al., 2017). However, little work has been done related to the reasons behind people visiting the park, making it a notable gap in tourism literature. Thus, it is important to understand the factors influencing visitation to Johor National Parks (Pulau Kukup & Tanjung Piai) to support effective tourism planning.

Johor National Parks

The Johor National Park Corporation (JNPC) in Malay Perbadanan Taman Negara Johor (PTNJ) was established on 1 January 1992. The corporation aims to preserve and operate national parks for educational and recreational purposes while protecting wildlife, plant species, and natural features of geological, geographical, historical, and anthropological significance (Johor National Parks, 2025). JNPC is responsible for managing 6 national parks in the state of Johor, Malaysia. The Johor state government has allocated RM10 million to upgrade facilities and infrastructure in these parks to support tourism development (Astro Awani, 2024). In addition, the Johor state government has provided funding to enhance national parks in the state as reported by the medias (Utusan Malaysia, 2023; BuletinTV3, 2024).

Pulau Kukup Johor National Park

Pulau Kukup (Johor) National Park was established in 1997 to protect one of the largest mangrove islands in the world. In addition, this island is a shelter for many mangrove-associated plants and animals, several of which are rare or threatened species. The park's boardwalks, viewing platforms and informative signage make it the place to observe and uncover the web of life within this unique interface between land and sea. Thus, the park is a stopover site for migratory waterbirds undertaking the perilous journey along the East Asian – Australasian Flyway (EAAF). Interestingly, the mudflats that surround the national park are feeding grounds for these birds during low tide and the mangroves provide a safe place for them to roost (Johor National Park, 2026).

Tanjung Piai Johor National Park

Tanjung Piai occupies a very special corner of the world, where the cape constitutes the southernmost point of mainland Asia. It provides one of the few places where two neighbouring countries (Singapore and Indonesia) can be seen at once. Tanjung Piai Johor National Park was established in 1997 to protect this unique site, the mangroves and mudflats that line the cape, along with the important ecosystem services that they provide. In 2003, Tanjung Piai National Park was recognised by the Ramsar Convention as a Ramsar Site, or Wetlands of International Importance.

Remarkably, Tanjung Piai is the smallest but most visited, of Johor's 6 national parks. It is a great place to spend a day, observe the biodiversity, take in the views and marvel at the intricate relationship between man and nature. The park has a unique elevated area within the mangroves (Johor National Park, 2026).

Research Objectives

To examine the socio-demographic characteristics of visitors to Tanjung Piai and Pulau Kukup National Parks.

To examine the key factors that influence visitation to Tanjung Piai and Pulau Kukup National Parks.

To explore visitors' suggestions for improving the visitor experience at Tanjung Piai and Pulau Kukup National Parks.

LITERATURE REVIEW

National parks are visited each year by millions of tourists, with varying lengths of stay. Hand in hand with the development of tourism and recreation. However, there is pressure to implement new development projects. For the sake of protecting the invaluable natural landscape, activities related to building recreational complexes, increasing accommodation capacities and building new infrastructure must respect the uniqueness of the area in question (Stemberk et al., 2018). Furthermore, the administrations of national parks create jobs, directly and indirectly, in the form of orders from private companies. The national park brand means easier access to public funding for municipalities as well as private companies. National parks boost the economy of the entire region, and municipalities located in national parks have a higher income than those located elsewhere (Bateman, 2011).

There are many factors that influence visitors; visitation and revisitation to national parks. Several studies have discussed the significant relationship between the environment and park visitation. Li et al. (2021) found that the following park features had a significant impact on participants' perceptions of their visit: pleasant light patterns and sun-dappled areas; transcendent horizons yielding sunrises, sunsets, and starry skies; refreshing aromatic notes of natural and floral scents; a comfortable, cool, and temperate climate; and stimulating recreational facilities that encourage physical activities. Besides, Neuvonen et al. (2010), the quantity of biotopes, the presence of exceptional national landscapes, and the park's major natural features (water regions, mires, fells, or forests) all have an impact on visitor numbers. According to the study, visits were significantly and positively influenced by the quantity of biotopes. This result may suggest that park visitors view a park's variety of natural features as a favourable attribute.

Environmental characteristics are frequently cited as one of the most influential factors affecting visitation to urban parks. These characteristics refer to the natural and physical qualities of the park environment, including vegetation, landscape design, biodiversity, scenic views, and environmental cleanliness. Such attributes shape the first impressions for visitors when entering a park and may strongly influence their decision to remain in the space or revisit it in the future. Research in environmental psychology suggests that exposure to natural environments produces restorative psychological effects.

Furthermore, park visits were more common among those who lived close to larger parks. Natural landscapes may attract initial interest in urban parks, but it is the infrastructure that allows full engagement with the parks. Infrastructure includes walking paths, playgrounds, sports courts, seating, lighting, restrooms, and concessions. Each component encourages a particular recreation activity and enhances visitor comfort and convenience.

Some scholars argue that environmental attributes and facilities should not be examined independently. Instead, these elements interact to shape visitor experiences. While environmental beauty may initially attract visitors, facilities influence how visitors spend their time in the park and how long they remain there. Consequently, environmental and infrastructural features should be considered complementary determinants of park visitation. It has been noted that other important characteristics contributing to higher visitor numbers are accessibility and linkage, degree of comfort and image, use and activities and sociability (Sakip et al., 2015).

RESEARCH METHOD

Research Site & Questionnaire

In the state of Johor, South Malaysia, there are 6 national parks that are under the observation of Johor National Parks, namely Endau Rompin National Park Peta, Endau Rompin National Park Selai, Gunung Ledang National Park Lagenda, Gunung Ledang National Park Waterfall, Tanjung Piai National Park and Pulau Kukup National Park (Johor National Parks, 2025, Plan Malaysia, 2025). In this study however, 2 national parks were Tanjung Piai National Park and Pulau Kukup National Park, these parks can be categorised as day-visit parks.

This research utilised an administered questionnaire, whereby the researchers asked the questions directly and recorded the respondents' answers, while also allowing respondents to provide additional verbal feedback. This approach was adopted to better understand visitors' perceptions of the factors influencing park visitation. The questionnaire survey was conducted among the national park visitors, Pulau Kukup (1 November 2025) and Tanjung Piai (7 & 8 February 2026). Prior to the data collection process, ethical approval was obtained from the UiTM Ethics Committee (REC/11/2025 (ST/MR/210)). Research permission from the Johor National Parks Corporation (JNPC) was also granted on 29 August 2025. In addition, approval from the Director of JNPC was also obtained before the data collection was conducted. Some of the items in the questionnaire were adapted from the study conducted by Zhan et al. (2021) meanwhile, the last part contained an open-ended question, asking for suggestions for further improvement of the parks.

ANALYSIS OF RESULTS

Descriptive Analysis

Table 4.1 shows the characteristics of the 180 people who visited the national parks for a day. These respondents were mostly working adults, with 27.8% of them aged between 35 and 44 years old. Followed by 22.2% of the respondents aged between 25 and 34 years old and those who were between 45 and 54 years old (21.1%). The number of men and women who visited the parks were almost equal with 50.6% men and 49.4% women. Most of the visitors who visit the parks have jobs in private companies (44.4%) and 22.2% in the government sector. More than half of the respondents (53.9%) earn less than RM5,250 per month. When it comes to education, most respondents finished school (31.1%), have a diploma (30.6%) and have a bachelor's degree (26.7%). This shows that the respondents who visited the parks were from different levels of education.

The people who visited the parks were mostly from Malaysia, with the percentage of 87.2% and majority of them were from Johor (78.3%). Most of the visitors were Malay (69.4%) and then there were Chinese visitors (18.9%). Also, 85.6% of the respondents responded that they are free during weekends, which means they use the parks to relax during weekends. Most visitors went to the parks by cars (72.2%), and they have been living in the same place for a long time, which is 67.8%. Some of them live farther 20 km away from the parks (47.2%). It is interesting that even though 53.3% of the visitors have parks near their homes, they still choose to visit the national parks. The national parks have something to offer that other parks do not. Overall, the national parks are mostly visited by Malaysians who are working and want to spend their free time in nature. Day-visit national parks are very important for these people because they offer a way for them to relax during their weekends.

Table 4.1 Demographics

	Day Visit Parks
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Variable / Category	Count	Percentage (%)
Age		
25 - 34	40	22.22
18 - 24	19	10.56
35 - 44	50	27.78
45 - 54	38	21.11
55 - 64	25	13.89
65 or above	8	4.44
Gender		
Male	91	50.56
Female	89	49.44
Occupation		
Government servant	40	22.22
Student	11	
Employed (private sector)	80	
Employed (part-time)	9	
Self-employed (a freelance or the owner of a business)	21	
Retired	19	
Monthly Household Income (in Ringgit Malaysia)		
Less than RM5,250	97	53.89
Prefer not to say	36	20
RM5,250 - RM11,819	31	17.22
More than RM11,819	14	7.78
Highest Education Level Completed		
Bachelor's degree	48	26.67
Diploma	55	30.56
Secondary school	56	31.11
Master's degree or higher	5	2.78
No formal education	16	8.89
Nationality		
Malaysian	157	87.22
Indonesia	0	0
Singaporean	20	11.11
Chinese (China)	3	1.67
If you are a Malaysian, please specify state of residence		
Johor	141	78.33
Wilayah Persekutuan Kuala Lumpur	4	2.22
Kelantan	2	1.11
Selangor	0	0
Kedah	2	1.11
Pahang	0	0
Sabah	0	0
Wilayah Persekutuan Labuan	0	0
Not Applicable	21	11.67
Perak	4	2.22

Perlis	2	1.11
Melaka	2	1.11
Sarawak	1	0.56
Terengganu	1	0.56
Race/ethnicity		
Malay	125	69.44
Prefer not to answer	0	0
Orang Asli	0	0
Chinese	34	18.89
Bajau	0	0
Singaporean	18	10
Sundanese	0	0
Chinese / <i>from China</i>	3	1.67
Availability of Free Time		
I have leisure time on weekends	154	85.56
I have free time on weekdays	23	12.78
I have limited free time during the week	2	1.11
I have free time on weekdays	1	0.56
Family Status		
I do not have children under 7 years old	112	62.22
I have children under 7 years old	68	37.78
Mode of Transportation		
Self-driving (own car/motorbike)	130	72.22
Public transport	44	24.44
Ride-hailing services (e.g., Grab)	4	2.22
Walking	2	1.11
Resident Type		
Short-term visitor	49	27.22
Non-local student	7	3.89
Temporary resident	2	1.11
Long-term resident	122	67.78
Distance of Your Permanent Residence from the Selected National Park		
More than 20 KM	85	47.22
I am a tourist / not from this area	61	33.89
11km - 20 km	15	8.33
Less than 1 KM	4	2.22
6km - 10 km	4	2.22
1KM – 5 KM	11	6.11
Are there other parks near your residence?		
Yes	96	53.33
No	58	32.22
Not sure	26	14.44

Park Satisfaction

Table 4.2 presents descriptive statistics of visitors' satisfaction with various attributes of the selected day-visit national parks. Overall, respondents reported relatively high levels of satisfaction, with mean scores ranging from 3.47 to 4.46 on a five-point Likert scale. The highest-rated attribute was noise level ($M = 4.46$), indicating that visitors appreciated the parks' peaceful and tranquil environment. This was followed by aesthetic appeal ($M = 4.34$), cleanliness ($M = 4.29$), and park information ($M = 4.18$), suggesting that the parks successfully provide an attractive, clean, and informative environment for visitors. Moderate satisfaction was observed for park safety ($M = 3.98$), historical value ($M = 3.88$), cultural value ($M = 3.85$), maintenance ($M = 3.82$), and supporting facilities ($M = 3.77$). Among all attributes, proximity to public transport received the lowest mean score ($M = 3.47$), indicating that accessibility via public transportation remains an area with potential for improvement.

Table 4.2: Park Satisfaction

Item	Day Visit Parks				
	N	Min	Max	Mean	Std. Dev
Noise level	180	1	5	4.46	0.696
Park safety	180	2	5	3.98	0.858
Cleanliness	180	3	5	4.29	0.612
Supporting facilities (e.g., benches, toilets, lighting)	180	1	5	3.77	0.987
Aesthetic appeal	180	2	5	4.34	0.757
Historical value	180	2	5	3.88	0.873
Proximity to public transport	180	1	5	3.47	0.828
Cultural value	180	2	5	3.85	0.906
Maintenance	180	2	5	3.82	0.93
Park information	180	2	5	4.18	0.736

Content Analysis

The feedback clusters into operational maintenance, visitor comfort & shelter, sanitation (toilets & cleanliness), visitor safety & accessibility, wildlife interactions (including monkey disturbance), visitor experience & attractions (river cruise, boat tours), information & signage, food & retail, and marketing / outreach. Coded dataset (theme, example quote, count), where each count is the number of responses in the uploaded sample that mention the theme.

Table 5.1: Coded dataset

Theme	Example quote (verbatim)	Count
Maintenance & Repair	<i>"Penyelenggaraan boleh ditambah baik"</i>	48
Toilets & Cleanliness	<i>"Toilet could be better, cleanliness."</i>	22
Shade, Seating & Rest Areas	<i>"Wujudkan wakaf untuk tempat pelawat berteduh."</i>	34
Facilities & Food (chalets, café, vending)	<i>"1) Buat kan chalet 2) Tempat makan"</i>	28
Accessibility & Safety (handrails, jetties, elderly access)	<i>"Kerusi menghala ke jeti kurang/tiada ... warga emas berjalan"</i>	21
Experience & Attractions (river cruise, boat tours, lokan)	<i>"Need to improve on experience (lokan), river cruise and facilities here."</i>	20
Signage & Information (QR, visibility, interpretive boards)	<i>"Information is not visible, please improve on this"</i>	26
Marketing & Outreach (social media, foreign tourists)	<i>"Additional marketing to foreigners / marketing utk singaporean"</i>	18

Wildlife concerns (aggressive animals, monkeys)	<i>"Terdapat haiwan liar yang agak ganas"; "Ancaman Haiwan Buas (Monyet)"</i>	14
Others / (roof leaks, parking, heat)	<i>"Atap takut bocor"</i>	12
No feedback / Blank / NA	<i>"-"</i>	11

Note: maintenance, shade/seating, toilets, signage and wildlife are the most frequently raised topics.

Overall, based on the count in Table 5.1, the maintenance and repair issues were the most frequently mentioned themes (48 responses), followed by requests for additional shade, seating, and rest areas (34 responses). Concerns related to sanitation, particularly toilets and cleanliness (22 responses), were also commonly raised by visitors. Other important themes mentioned were general site signage and availability of information, visitor services like food and lodging, and site considerations for the accessibility and safety of elderly users. Also, several respondents mentioned issues of wildlife interactions, especially the disruptive presence of monkeys, which may impact visitor comfort and safety. Enhancing visitor experiences, improving recreational river cruise and boat tour activities, was also mentioned. Overall, the findings suggest that the key areas calling for improvement based on visitors are maintenance, comfort infrastructure and sanitation for visitors, the visibility of information, and wildlife management.

Content analysis of suggestions by Park

Group visitor suggestions by park, show the dominant themes for each site and at least 2 representative verbatim quotes per park drawn from the uploaded responses.

Table 5.2 Park-level thematic table

Park	Top themes (ranked)	Two representative verbatim quotes	Approx. frequency (mentions)
Pulau Kukup	1. Maintenance & repair	<i>"Tambah baik kemudahan sedia ada, ada kelengkapan yang telah rosak."; "Menambah bilangan tempat rehat dan tempat duduk"</i>	High
	2. Seating & rest shelters		
	3. Food/retail options		
	4. Signage		
Tanjung Piai	1. Shade / wakaf / shelter	<i>"Wujudkan wakaf untuk tempat pelawat berteduh."; "Kerusi menghala ke jeti kurang... agak jauh untuk warga emas berjalan"</i>	High
	2. Toilets & cleanliness		
	3. Accessibility for elderly		
	4. Roofs at jetties		

There were several major issues regarding infrastructure, visitor comfort, facilities, safety, and wildlife management in the thematic analysis of comments given by visitors to 2 Johor National Parks. Firstly, visitors at Pulau Kukup National Park reported issues with the park's infrastructure. They also noted that the park needs more seating, shaded resting facilities, and vending machines for food and drinks. Such improvements are crucial for the short, self-driving trips taken by visitors. A more comfortable stay can enhance visitor satisfaction and increase the number of visitors to the park. On the other hand, visitors to Tanjung Piai National Park were more concerned about the heat, long walking distances, and the lack of amenities for senior citizens. Several visitors have recommended the construction of shaded shelters known as *wakaf* in the Malay language, more toilets, and the addition of accessibility features such as handrails and shorter accessible paths. A lot of people expressed the need for more interpretive signage about the natural features and legends of the park. This was in addition to the safety features like trails, platforms, and ropes.

There is also a need for better signage and guided activities in areas with remote and rugged trails. Such facilities are vital for the park, which is extremely remote and adventure oriented. Throughout the parks, visitor interactions with wildlife, particularly disturbances with monkeys, were consistent. While visitors expressed an

interest in observing wildlife, they also voiced concerns about potential safety issues. In addition, management options include the installation of “do not feed wildlife” signs, the provision of wildlife-proof bins, the increase of staff patrols, and the construction of designated areas for wildlife viewing. Research indicates that satisfaction and sustainability in wildlife parks can be achieved with the improvement of infrastructure maintenance, visitor comfort and accessibility, safety, and wildlife management.

CONCLUSION & DISCUSSION

The aim of the study was to identify elements that affect the arrival of people at 2 parks in Johor, namely Tanjung Piai and Pulau Kukup. As per the results, it was noticed that the visitors expressed satisfaction with the parks in general, especially with their tranquil atmosphere, scenic beauty, cleanliness, and availability of information. These qualities help us say that environmental quality has great importance in making visitors satisfied and making these parks appealing for visitors to enjoy visiting them. While many aspects were covered concerning the improvement of visitor satisfaction, there are some issues that should be tackled. Among them are facilities provided by the area, availability of public transportation, maintenance of infrastructure, presence of shaded areas for resting, cleanliness, availability of signs, and management of wildlife.

Generally, most tourists are Malaysians. Perbadanan Taman Negara Johor (PTNJ) could consider promoting the national parks to Singaporeans, as the parks are located less than 60KM (Google Maps, 2026) from Woodlands Checkpoint (Johor–Singapore Causeway). PTNJ could also consider engaging with social media content creators as social media content is believed to be able to influence tourist inflows and tourist engagement with tourism-related content on social media (Hussain, et al., 2024). Also, PTNJ should consider collaborating with hotels to attract international tourists. For example, information about day trips to the National Park in the state of Pahang, Malaysia can be found on Four Seasons Hotel’s Kuala Lumpur and Marriot Hotel Kuala Lumpur corporate websites (Four Seasons Hotel, 2026; Marriot Hotel Kuala Lumpur, 2026).

Another factor that needs to be considered is affordable packages. This is important because most of the visitors are those earning less than RM5250 (M40 category). Price and affordability were also highlighted by Liao & Chuang (2020), one of the important attributes that tourists consider when choosing package tours is price.

On the other hand, another issue that needs serious attention is maintenance as this factor is one of the lowest scores (mean 3.82) when it comes to visitors’ satisfaction. Unexpectedly, it is vital to note that this is among the common issues faced by most national parks, as highlighted by the National Park Travel Map (LEMAP), 2026 most national parks have limited budgets. Consequently, repairs and improvements are endlessly overdue. Thus, budgetary delays can directly impact public safety and visitor experience. Additionally, Neuvonen et al., (2010) also stressed the importance of understanding the relationship, the characteristics and number of visits to national parks. However, the findings suggest that visitors were generally satisfied with the environmental quality and overall condition of the parks, while improvements in supporting facilities and public transport accessibility could further enhance the visitor experience.

The study presents the importance of merging quantitative park visitor information with qualitative feedback from visitors, providing an insight into the priorities of park management. The results provide useful practical information for Johor National Parks Corporation and responsible entities associated with the management of protected areas that will contribute to making plans related to further infrastructure development, services for visitors, and environmental conservation. As Johor continues to promote nature tourism, especially under the Visit Johor program, ensuring high-quality experiences for visitors will be necessary.

Although this study focused on two-day-visit national parks in Johor, future research should include other national parks across Malaysia and employ multivariate techniques, such as structural equation modelling, to examine the relationships between environmental attributes, visitor satisfaction, revisit intention, and behavioural outcomes. Comparative studies involving overnight and day-visit parks would also provide deeper insights into the differing needs and expectations of visitors, thereby contributing to more effective and evidence-based park management.

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Author Contribution

Muhammad Majid: Writing - review & editing, writing – original draft, conceptualisation, project and fund management; Mohamad Faizal Ramli – writing the literature review, editing, data collection; Ahmad Shahmi Ahmad Fadzil – literature review, data collection; Mohd Danial Afiq Khamar Tazilah – literature review; Lili Tokiman – grant management, review

Ethical Approval Statement

Prior to the data collection process, ethical approval was obtained from the UiTM Ethics Committee (REC/11/2025 (ST/MR/210)). In addition, research permission from the Johor National Parks Corporation (JNPC) was granted on 29 August 2025. Approval from the Director of JNPC was also obtained before the data collection was conducted at the four selected national parks.

Informed Consent

All participants provided their written informed consent before the administration of the instrument. They were clearly and comprehensively informed about the objectives of the study, the voluntary nature of their participation, and the confidentiality of the information collected. They were also assured that their responses would be used exclusively for academic and research purposes and that their identity would remain completely anonymous at all times.

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