

LOCAL TOURISTS' PERCEPTION OF ECOTOURISM DEVELOPMENT IN LABUAN MARINE PARK, MALAYSIA

Wei Yien Lua^{1*}, Nor Hafzan Abd Rasid¹, Safuan Che Din Mohd¹, Abdul Rahman Abdul Latip², Wan Izatul Asma Wan Talaat¹, Nurashiqin Salih Udin³, Mohd Zaki Harun³ & Nazli Aziz^{1,2,4**}

*First author, **Corresponding author

¹Institute of Oceanography and Environment, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia

²Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia

³Department of Fisheries Malaysia, Wisma Tani, Federal Government Administration Centre, 62628 Putrajaya

⁴Blue Economy Research Interest Group, Universiti Malaysia Terengganu, 21030, Kuala Nerus, Terengganu, Malaysia

(wylua950305@gmail.com, norhafzanrasid@gmail.com, chedinmohdsafuan@umt.edu.my, rahmanlatip@umt.edu.my, wia@umt.edu.my, nurashiqin@dof.gov.my, mohdzaki@dof.gov.my, nazli_aziz@umt.edu.my)

DOI: <https://doi.org/10.22452/jati.vol30no2.4>

Abstract

Marine parks in Malaysia are designated protected areas where human activities are restricted to conserve marine ecosystems. These parks promote ecotourism and increase public awareness of the marine environmental importance. Understanding local tourists' perceptions of ecotourism development in marine parks is essential for balancing conservation objectives with visitor expectations. This study investigates local tourists' perceptions of ecotourism development in Labuan Marine Park (LMP) using a questionnaire survey. Data were analysed with SPSS employing both descriptive and inferential statistical methods. The results indicate that most respondents recognised the park's conservation purpose, and approximately half strongly agreed that Labuan Marine Park had deteriorated due to surrounding development. While respondents expressed general satisfaction with ecotourism services in LMP, they recommended improvements to certain infrastructure. Therefore, marine park development should be carefully planned and regulated to align with tourist expectations while safeguarding the ecosystem. The study highlights the potential of Marine Spatial Planning (MSP) to enhance marine ecotourism in LMP.

Keywords: *Labuan Marine Park, ecotourism development, Marine Spatial Planning, local perception, conservation awareness*

INTRODUCTION

Malaysia features notable seascapes with clear waters and white-sand beaches, which contribute to the significance of its ecotourism sector (Kaur, 2006). The management of ecotourism destinations, particularly within marine parks, necessitates distinct governance strategies to enhance community well-being and improve local infrastructure. Effective ecotourism development is essential for achieving sustainable outcomes in marine protected areas (MPAs) and for strengthening marine governance (Casimiro et al., 2023). Tourism development should be aligned with existing policies and governance frameworks to optimise stakeholder benefits while preserving environmental and socioeconomic conditions (Miller & Twining-Ward, 2005; Kimbu & Ngoasong, 2013). Since the 1980s, tourist destinations have been extensively studied, with the Tourism Area Life Cycle (TALC) model developed by Butler (1980) remaining the most widely applied, as demonstrated in Kruczek et al. (2018) and Kelfaoui et al. (2021).

The TALC model outlines six phases in the evolution of tourist destinations, namely exploration, involvement, development, consolidation, stagnation, and either rejuvenation or decline. The model indicates that as tourism activities expand and visitor numbers increase, social and environmental challenges may arise, reducing the attractiveness of destinations and leading to eventual decline. In the exploration phase, the natural environment attracts a limited number of tourists, whose unstructured activities have minimal environmental impact due to the absence of tourism infrastructure. During the development phase, it is crucial to balance socioeconomic and environmental considerations. This emphasises the role of ecotourism within sustainable tourism. Many developing countries are adopting ecotourism as a conservation strategy that also supports economic development, thereby promoting sustainable growth (Kiper, 2013). Hence, understanding tourists' perceptions of ecotourism development in marine parks is essential for balancing marine environmental conservation with visitor expectations. Effective management and development of marine parks can help mitigate ecosystem degradation, as projected by the TALC model. Masud et al. (2021) further emphasise that social, economic, cultural, and ecological development significantly influence the sustainable use of natural resources in MPAs. Therefore, promoting good governance among stakeholders, particularly local governments, NGOs, and local communities, is vital for strengthening sustainable ecotourism and marine ecosystems.

Previous research has examined tourists' perceptions in various ecotourism destinations, including Redang Island Marine Park (Yacob et al., 2011), Tunku Abdul Rahman Marine Park (Fatt et al., 2021), and Merapoh National Park (Lee et al., 2022). However, similar studies have not been conducted at Labuan

Marine Park (LMP), which remains understudied relative to other marine parks in Malaysia. Existing development plans for Labuan primarily address Labuan Island, with limited focus on LMP. LMP is the sole marine park in the Labuan Federal Territory (FT), which is unique in Malaysia for being surrounded by sea and ocean-based industries. The territory is recognised as an offshore financial centre, a support hub for deep-water oil and gas activities, and a feeder port for international shipping routes.

Although this strategic location offers significant economic advantages, it also subjects the surrounding marine environment to considerable anthropogenic pressures. Coral reefs in LMP face threats from destructive fishing practices, pollution associated with oil and gas activities and shipping lanes, as well as runoff and sedimentation (Pilcher & Cabanban, 2000). Safuan et al. (2015) further report that coral cover in LMP is classified as poor. The proposed construction of a bridge connecting Labuan and Sabah is anticipated to impact the local environment, necessitating updated feasibility studies to accurately assess current conditions, as existing studies are insufficient (Borneo Post Online, 2024). Additionally, the bridge is expected to increase tourist arrivals to LMP, highlighting the need to examine local tourists' perceptions of ongoing and future developments and their potential effects on the sustainability of LMP.

These environmental challenges highlight the necessity for tourism development to satisfy tourist expectations while supporting sustainable environmental conservation. The anticipated findings are intended to inform policymakers in designing sustainable ecotourism strategies and improving park management, as well as assist tourism operators in enhancing service quality. Accordingly, this study seeks to analyse local tourists' perceptions of current ecotourism development in LMP to support balanced and sustainable tourism planning.

LITERATURE REVIEW

Ecotourism

According to Donohoe and Needham (2006), the first formal and widely accepted definition for "ecotourism" was made by Ceballos-Lascuráin (1996), as:

Travelling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas.

Ecotourism is defined as a form of tourism that promotes learning experiences and the appreciation of the natural environment and its components within a relevant cultural context (Weaver, 2001). According to Newsome et al. (2002), five components distinguish ecotourism from other forms of tourism: it must be nature-based, ecologically sustainable, environmentally educative, locally beneficial, and satisfactory to participants.

The Ecotourism Society Pakistan defines ecotourism as travel activities that generate financial benefits for local communities, promote local cultures to visitors, and ensure local development, while discouraging large-scale construction (Cobbinah, 2015). These perspectives are integrated by the International Ecotourism Society (2015), which defines ecotourism as “responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education”.

In Malaysia, the concept of ecotourism has evolved and is currently guided by the Second National Ecotourism Plan 2016-2025, which defines it as a “tourism experience evolved through collaboration between government, the private sector and the local communities”. This Plan emphasises respect for nature, contributions to conservation, benefits to local communities, education and awareness, and ecological, economic, socio-cultural, and ethical sustainability. As Malaysia prepares for Visit Malaysia 2026, ecotourism is positioned to play a central role in promoting sustainable tourism, supporting conservation initiatives, and enhancing community-led tourism to ensure long-term benefits.

Despite extensive research on ecotourism, inconsistencies in its definition have led to a fragmented understanding of genuine ecotourism. This lack of consensus poses challenges for comparative studies across different geographical and cultural contexts and complicates the evaluation of ecotourism outcomes.

Marine parks

A Marine Park is a type of Marine Protected Area (MPA) in which the government imposes restrictions on human activities (National Geographic, 2022). The conservation of marine ecosystems is essential for safeguarding declining fishery resources affected by both anthropogenic and natural factors. In Malaysia, the concept of establishing marine parks emerged in the 1980s (Yacob et al., 2011), with primary objectives of conserving the natural habitats of endangered species and implementing zoning to improve the management of the carrying capacity of an area.

Marine protection efforts in Malaysia began with the designation of a Fisheries Prohibited Area (FPA) in Pulau Redang, Terengganu (Talib et al., 2004), under the Fisheries (Prohibited Area) Regulations of the Fisheries Act 1963. The Fisheries Act 1985, which applies to all states except Sabah, subsequently repealed the earlier legislation. Part IX of this Act provides for the establishment of marine parks and marine reserves under Sections 41-45 (Rahman et al., 2019). The Establishment of Marine Parks Malaysia Order 1994 governs the designation of marine parks. A Marine Park is defined as a sea-zoned area extending up to two nautical miles from the lowest water mark, except for Pulau Kapas (Terengganu), Pulau Kuraman, Pulau Rusukan Besar and Pulau Rusukan Kecil (Labuan), and Pulau Undan, Pulau Nangka and Pulau Dodol (Malacca), which extend one nautical mile. Figure 1 illustrates the 52 islands that have been gazetted as marine parks in Malaysia.

Although designated as protected areas, marine parks in Malaysia continue to encounter significant challenges, including weak enforcement, fragmented institutional governance, limited funding, outdated scientific research, and overtourism. These challenges may result in the loss of ecological function, environmental degradation, ineffective conservation outcomes, and inadequate enforcement of regulations, thereby undermining the primary objectives of marine park establishment.

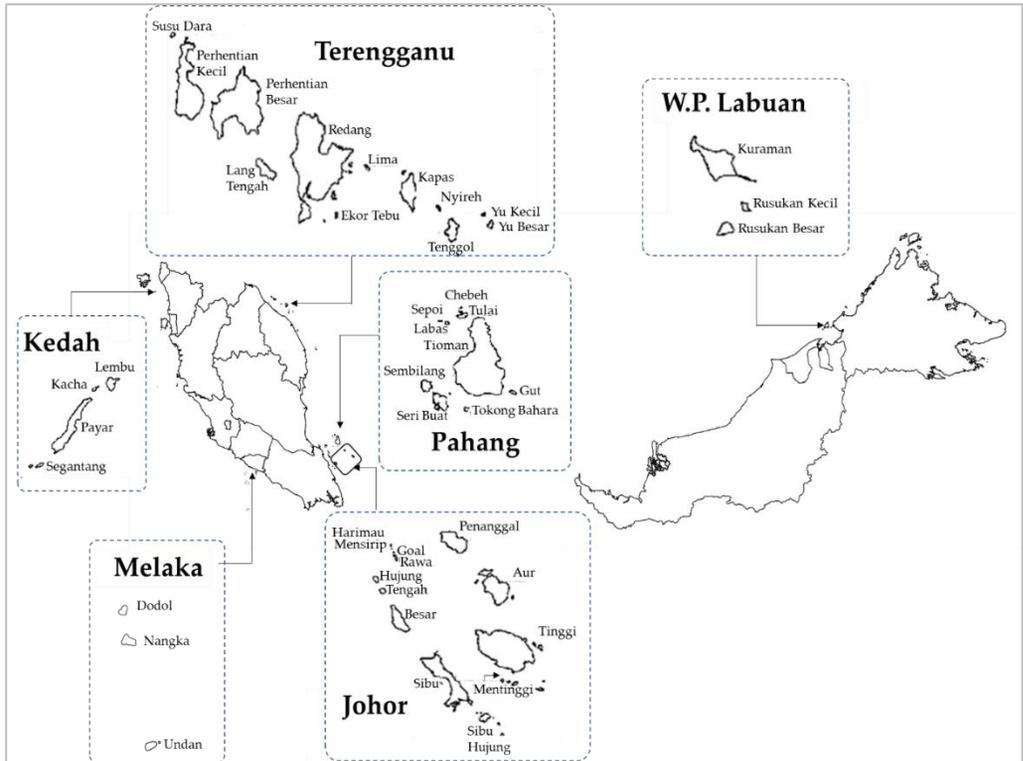


Figure 1: List of marine parks gazetted and managed by the Fisheries Conservation and Protection Division of the Department of Fisheries Malaysia (DOFM)
 (Source: Adapted from Department of Fisheries Malaysia [2024].)

Importance of Marine Park

Marine parks are established to protect marine ecosystems, with a particular focus on coral reefs and their associated species, to support sustainable fisheries and ecotourism. Marine biodiversity within these parks provides significant benefits across multiple sectors, ranging from national economic gains to advantages for local communities. Selig et al. (2019) note that the benefits derived from marine ecosystems encompass both monetary and non-monetary values.

One direct benefit of marine parks is the spill-over effect, in which harvestable fish and fish larvae move beyond protected boundaries due to current movement (Di Lorenzo et al., 2016). This phenomenon is observed by fishers operating near these areas. The extent of spill-over depends on species mobility as well as the size and design of the protected zones. Di Lorenzo et al. (2016) report that spill-over is common in marine protected areas globally, facilitating the recovery and expansion of fish populations beyond protected boundaries. Christie et al. (2010) further support this by demonstrating that Yellow Tang larvae in a

Hawaiian marine protected area can disperse up to 184 km, with even greater distances possible when influenced by eddy currents.

There has been a global increase in ecotourism within marine parks, driven by the unique characteristics of these ecosystems (Rhormens et al., 2017; Chen et al., 2020; Tuohy et al., 2022). Malaysia is also actively promoting ecotourism across its marine parks (Masud et al., 2017; Abdullah et al., 2019). Recreational and tourism activities now provide alternative sources of income for local communities that previously depended on artisanal fisheries, which are currently prohibited (Hanim et al., 2010). In contrast, non-disruptive activities such as tourism are permitted. The development of marine parks as tourism destinations has enhanced public awareness of the importance of marine ecosystems. Public participation in ecotourism contributes to increased awareness of marine conservation needs (Misni & Jarami, 2021). Education centres within marine parks play a vital role in public education by offering access to pristine environments and diverse marine species (Talib et al., 2004). Ecotourism not only supports the local economy but also improves public understanding of marine environments. The diverse backgrounds of tourists provide varied perspectives on tourism development in Malaysia and encourage residents to communicate in English, even among those with limited formal education (Razali et al., 2016).

Nevertheless, conflicts can emerge between the expansion of ecotourism and the goals of ecosystem conservation (Chen et al., 2020). The development of marine parks and ecotourism initiatives requires careful planning and management. The long-term sustainability of ecotourism in marine parks relies on the actions of both park authorities and visitors (Abdullah et al., 2019; Gifford and Nilsson, 2014).

MPAs promote the preservation of marine cultural values, including sites of historical significance such as shipwrecks (National Geographic, 2022), prehistoric archaeological locations, and areas important to indigenous communities. The establishment of protected areas provides valuable opportunities for marine scientists, enabling access to abundant coral reefs and extensive samples for analysis, as well as facilitating research on sustainable tourism, community-based initiatives, and tourism impacts (Hanim et al., 2010). Scientific assessments are essential for evaluating the sustainability of ecotourism and ensuring ongoing regional ecological protection and future development.

Ecotourism and Community

Dowling and Fennell (2003) emphasise that ecotourism planning and policy should benefit local communities through improved marketing of local products, enhanced facilities and services, infrastructure development, increased

environmental awareness, and better land use practices. Therefore, effective ecotourism planning requires the involvement of local communities to support both ecosystem conservation and local economic development. Insufficient community participation in the management of protected areas has resulted in negative attitudes toward sustainable resource use (Törn et al., 2008; Lobat et al., 2021). Latip et al. (2022) further demonstrate that community commitment, mutual understanding, hospitality, and positive attitudes significantly influence local support for coastal tourism planning.

Community participation in ecotourism has been identified as a strategy for poverty alleviation under the United Nations Sustainable Development Goals (SDG 1). Abdullah et al. (2020) note that the United Nations Expert Group Meeting on Sustainable Tourism has advocated for ecotourism as a means to address poverty and promote sustainable development. Community-driven ecotourism can decrease reliance on natural resources, thereby reducing unsustainable exploitation and supporting more effective conservation of protected areas. Table 1 presents previous studies demonstrating that community involvement in ecotourism contributes to poverty reduction, ecosystem sustainability, and the maintenance of MPAs.

Table 1: Previous studies show local communities' involvement in maintaining ecotourism destinations

Components	Summary of Findings	References
Importance of ecotourism towards the community's livelihood	Ecotourism helps reduce poverty and improve entrepreneurship among the local community.	Ma et al. (2019)
		Kry et al. (2020)
		Abdullah et al. (2020)
		Chirenje (2017)
Involvement of the community in ecotourism	Local community involved in patrolling, funding ecotourism development, reforestation, and the cleaning and maintenance of ecotourism destinations.	Ghosh-Harihar et al. (2019)
		Barnette and Wiwekwin (2018)
		World Bank (2009).
		Omar et al. (2020)
Marine Park sustainability	The involvement of local communities in ecotourism-related jobs and the maintenance of the sustainability of the local environment in marine park areas.	Masud et al. (2016)
		Caras and Pasternak (2009)
		Hanim et al. (2010)
		Rosadi et al. (2022)

Source: The authors.

Good governance is fundamental to achieving sustainable community-based ecotourism. Harun et al. (2018) analysed community attitudes towards sustainable tourism in Kurdistan, Iraq, and recommended policies to sustain community support. Yanes et al. (2019) developed a framework to evaluate Community-Based Tourism (CBT) in Colombia and identified a lack of community engagement strategies in policy documents. Torres Tricárico et al. (2019) examined social sustainability in rural Brazil, emphasising collaborative spatial arrangements. Collectively, these studies demonstrate that local community involvement in tourism planning fosters responsible and beneficial tourism practices. Integrating community perspectives and needs into development plans, together with robust governance for environmental and cultural conservation, is essential for achieving sustainable tourism.

Marine Spatial Planning

The new MSP approach to ocean management is the best way to promote sustainable island tourism (Patel & Gurning, 2023). MSP is defined by the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) as “*a public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process*” (Ehler & Douvère, 2007; Ehler, 2021). MSP emerged nearly four decades ago within the context of marine conservation planning (Santos et al., 2019). MSP represents a comprehensive process for organising human activities in marine and coastal areas. By integrating diverse interests and stakeholders, MSP serves as a tool to support environmental protection and the sustainable use of marine environments (Vaughan & Agardy, 2020).

The earliest and most comprehensive application of MSP is found in the Great Barrier Reef Marine Park (GBRMP), Australia, which is considered the origin of MSP (Ehler et al., 2019). Key practices contributing to GBRMP's management success include integrating seasonal closures, fishing gear limitations, permit systems, adaptive and co-management approaches, and science-based decision-making for zonation planning. In China, the technical system and institutional arrangement for MSP is known as Marine Functional Zoning (MFZ) (Fang & Ma, 2018; Teng et al., 2021). Notable features of MFZ in China include stakeholder integration, monitoring of land-sea interactions, and the application of advanced scientific technologies to inform decision-making.

According to IOC-UNESCO, MSP is characterised by six principles: ecosystem-based, integrated, place-based, adaptive, strategic, and participatory approaches, all of which should be observed in practice (Reimer et al., 2023). Implementing MSP can reduce conflicts among users and between users and resources, promote socioeconomic development and community livelihoods, improve marine environmental quality, and encourage efficient use of space and resources while preserving cultural heritage. These elements are essential for the development of marine park ecotourism, particularly through local engagement, to balance sustainable development with marine conservation in locations such as LMP. Early community participation in the development planning stage can advance MPA objectives and benefit both the environment and the local economy through co-management principles (Rahman et al., 2019). Despite widespread global adoption, MSP has not been effectively implemented in Malaysia, especially within marine parks. Given increasing spatial conflicts, overlapping sectoral interests, and ecological degradation, it is both urgent and timely for Malaysia to establish a structured MSP framework to improve marine governance, zoning, and the long-term sustainability of its marine parks and the broader marine ecosystem.

Conceptual framework

This study examines three dimensions of local tourists' perceptions: satisfaction with infrastructure and services, environmental awareness, and support for conservation. The influence of these perception factors on visitors' support for conservation and sustainable tourism is analysed. The results are presented as a critical element of MSP, serving as a strategic tool for managing visitor activities, conservation efforts, and zoning in marine parks. By linking visitor perceptions to destination development and planning outcomes, the framework supports the formulation of more adaptable and sustainable ecotourism regulations within marine park governance.

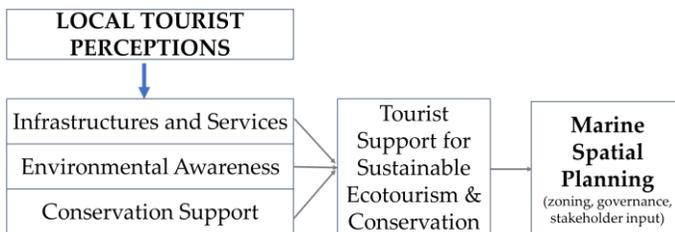


Figure 2: Conceptual framework of the study.
(Source: The authors.)

METHODOLOGY

Study site

According to Labuan Corporation (2018), the FT covers 9,049 hectares, with 171 hectares for Pulau Kuraman, and 14.9 hectares and 4.8 hectares for Pulau Rusukan Besar and Pulau Rusukan Kecil, respectively. The survey was conducted among residents, as there are no residents living in the marine park.

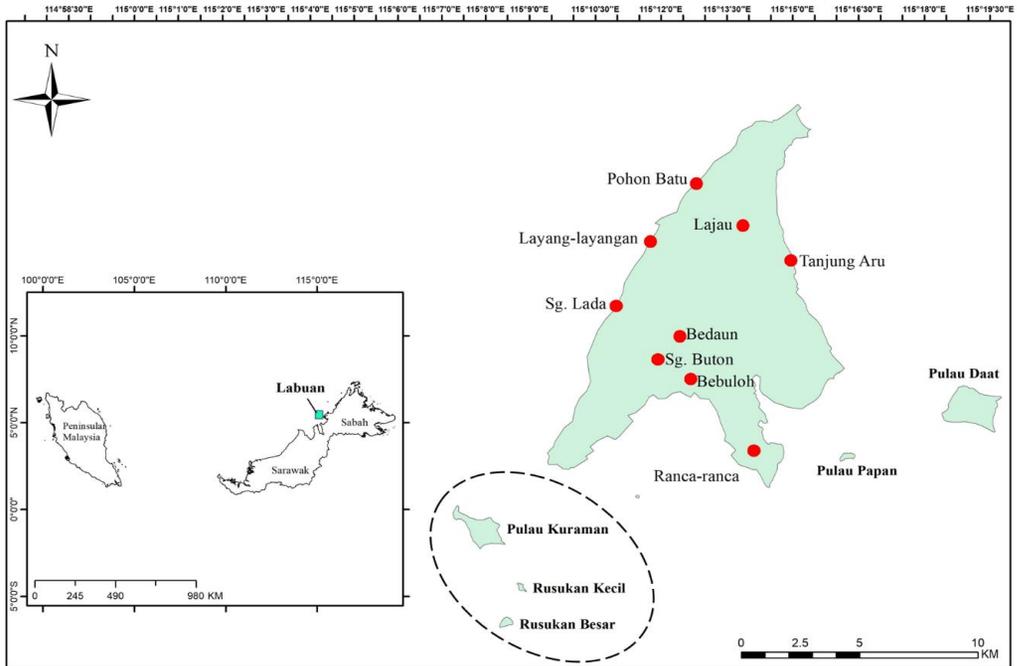


Figure 3: Sampling sites where the questionnaire survey was conducted. The dotted lines show the LMP
(Source: The authors.)

Questionnaire survey

A questionnaire survey was conducted to assess tourist perceptions of basic facilities in the marine park and to collect suggestions for improvement. The questionnaire and interview questions were adapted from existing instruments and their validity was confirmed by academic experts. A pilot study involving 30 participants was conducted, and the resulting data were excluded from the primary analysis. The questionnaire comprised several sections (Table 2). Convenience sampling was employed due to its efficiency and time-saving characteristics (Haron et al., 2020). Respondents aged 18 years and above who had

visited any of the islands in LMP were randomly selected and invited to participate voluntarily.

The survey was conducted over five days in August 2022. The population of Labuan FT is 101,708. The Raosoft sample size calculator recommended a sample size of 68, with a 90% confidence interval and a 10% margin of error (ME). Ultimately, 101 respondents (ME: 8.22%) participated in the survey. Data were analysed using SPSS with both descriptive and inferential statistical procedures, while responses to open-ended questions were examined through thematic analysis.

Table 2: Elements in questionnaire survey

Section	Description	Types of survey questions
A	Explored the demographic profiles of tourists.	Closed-ended
B	Studied their tourism characteristics.	Closed-ended
C	Focused on the importance of the sustainability of the marine park.	Closed-ended and Likert scale
D	Assessed their conservation awareness.	Closed-ended
E	Studied activities preferred in the marine park.	Likert scale
F	Explored their opinion towards the services and facilities in LMP.	Likert scale
G	Studied their experience in LMP such as problems faced and suggestions for improvements.	Closed-ended and open-ended
H	Focused on public facilities requirements.	Closed-ended
I	Focused on their satisfaction level with the facilities provided.	Likert scale
J	Studied the future needs regarding facilities in LMP.	Closed-ended

Source: The authors.

RESULTS AND DISCUSSION

Demographic Profiles

Figure 3 presents the demographic profiles of the respondents. Of the 101 participants, 67.3% are male and 32.7% are female. The majority are aged 31-40, while the smallest proportion is under 20. Most respondents identify as Malay,

with 10.9% classified as 'Others,' including Dusun, Melanau, Bruneian, Australian, Rangus, Filipino, and Bajau.

The majority of respondents are married, while 13.9% are single, 6.9% are widowed, and 1% are divorced. Most respondents are originally from Labuan. The vast majority are Malaysian citizens, with 4% being non-Malaysian residents of Labuan. Their highest level of education is varied, with the majority (33.7%) completed secondary schooling (MCE/SPM).

Respondents are employed in a range of occupations, with the largest group (20.8%) working as fishermen and 8.9% being unemployed. Only 2% are security guards and 1% are village chairmen. Most respondents earn less than RM2,500 per month, and none report a monthly income of RM5,880 or above. Therefore, all respondents are classified as B40, which denotes low-income individuals in Malaysia (Carvalho, 2023).

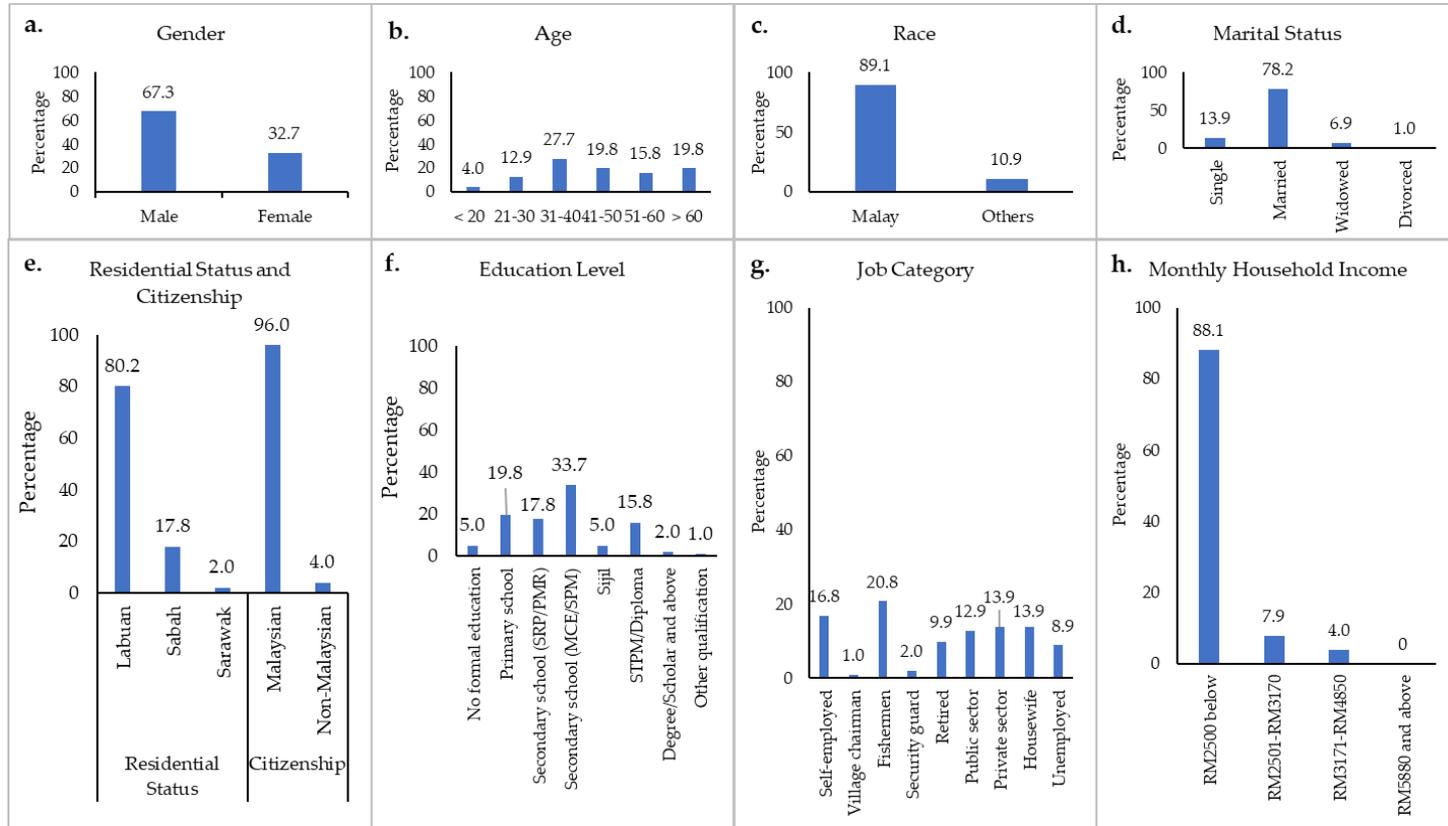


Figure 4: Demographic profiles of the respondents. Graph a: gender; b: age; c: race; d: marital status; e: residential status and citizenship; f: education level; g: occupation types; h: monthly household income
 (Source: Field work survey, August 2022.)

Tourism Characteristics

A total of 51.5% of respondents visited LMP more than six times, while some visited the islands two to five times, and 13.9% visited only once. Additionally, 53.5% traveled to a single destination, whereas 46.5% visited multiple destinations. The majority travelled with tour packages, and those who travelled without tour packages reasoned that the tour package was too expensive for them.

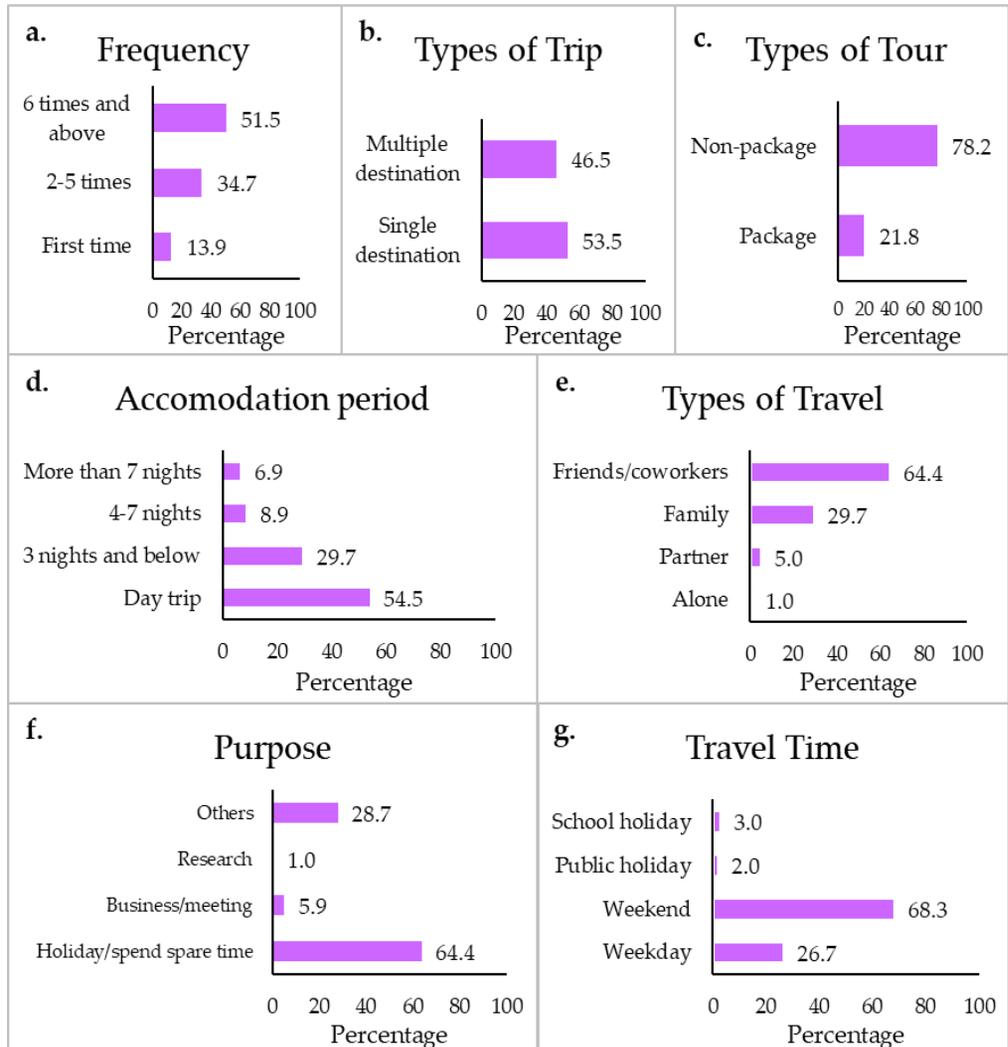


Figure 5: Tourism characteristics of the respondents. Graph a: frequency; b: types of trips; c: types of tour; d: accommodation period; e: types of travel; f: purpose; g: travel time

(Source: Field work survey, August 2022.)

The majority of visitors to LMP took day trips, while 29.7% stayed fewer than three nights, 8.9% stayed four to seven nights, and only 6.9% stayed more than seven nights. Individuals who stayed for more than 7 nights were primarily there for work-related purposes, indicating that LMP is predominantly oriented toward ecotourism rather than serving as a workplace. Most respondents travelled to LMP with friends or co-workers, with only 1% traveling alone. The primary motivation for visiting the islands was leisure, while 5.9% visited for business or meetings, 1% for research, and 28.7% for other reasons, such as beach cleanups, school trips, fishing, or working as boatmen. A significant proportion of respondents visited LMP on weekends, whereas 26.7% traveled during weekdays, 3.0% during school holidays, and 2% during public holidays.

Awareness on Marine Conservation in LMP

When asked whether Labuan has a marine park, 98% (99 respondents) answered affirmatively. Of these, 97% (98 respondents) recognised the important role of marine parks in conservation. These findings suggest that residents are aware of the protected marine environment in their vicinity. Hadi (2018) notes that locals often maintain habitats from which they benefit, driven by a sense of ownership. This result aligns with studies by Haron et al. (2020) and Lua et al. (2021), which found that residents of Setiu Wetland were highly aware of the State Park's protected status.

A majority of respondents (55.4%) strongly agreed, and 38.6% agreed, that the marine environment of the Labuan Marine Park (LMP) is deteriorating due to surrounding developments. Safuan et al. (2015) confirmed that coral health in LMP had declined, with live coral cover categorised as 'poor'. Although coral health was generally rated as 'fair', it was close to the threshold for 'poor' due to high algae and dead coral cover. Without sustainable interventions, further reef degradation is likely. Additionally, turtle landings in LMP declined in 2022 (2302 eggs found, 2061 hatched) compared to 2021 (2864 eggs, 2646 hatched) (Daily Express, 2023). This decline was attributed to factors such as climate change, increased sea traffic, and pollution, despite ongoing conservation measures. However, a reported increase in landings in 2024 suggests that conservation efforts may be practical (Bernama, 2024). Continued and consistent protection remains essential for the long-term sustainability of both the turtle population and the broader marine ecosystem in LMP. These findings underscore public concern, as reflected by approximately half of respondents acknowledging the ongoing degradation of LMP.

Ninety-seven percent (98 respondents) recognised that marine parks are intended for conservation, while 3% (3 respondents) did not. Additionally, 95% of respondents were aware that LMP is managed by the Department of Fisheries Malaysia (DOFM). This suggests that residents are aware of LMP's protected status. This observation is consistent with Badola et al. (2012), who found that 90% of local communities in a protected mangrove forest in India were aware of its status and willing to participate in conservation programs. In the present study, 20.8% of respondents were fishermen who previously operated around LMP before its designation as a marine park, which subsequently restricted fishing activities. As the DOF oversees most fisheries-related activities, these fishermen maintain direct engagement with the department. Furthermore, some private sector workers are employed in the oil and gas industry, where they are regularly exposed to environmental protection practices and regulations. These factors may contribute to the high level of awareness among respondents regarding the conservation purpose and management of marine parks by the DOF.

A survey by McNeill et al. (2018) in Jurien Bay Marine Park, Australia, found that the establishment of the marine park received mixed reactions from the local community. Some residents felt reassured by the protection of the park, others viewed its establishment as recognition of significant natural value, and some experienced increased community pride and a stronger connection to the local environment.

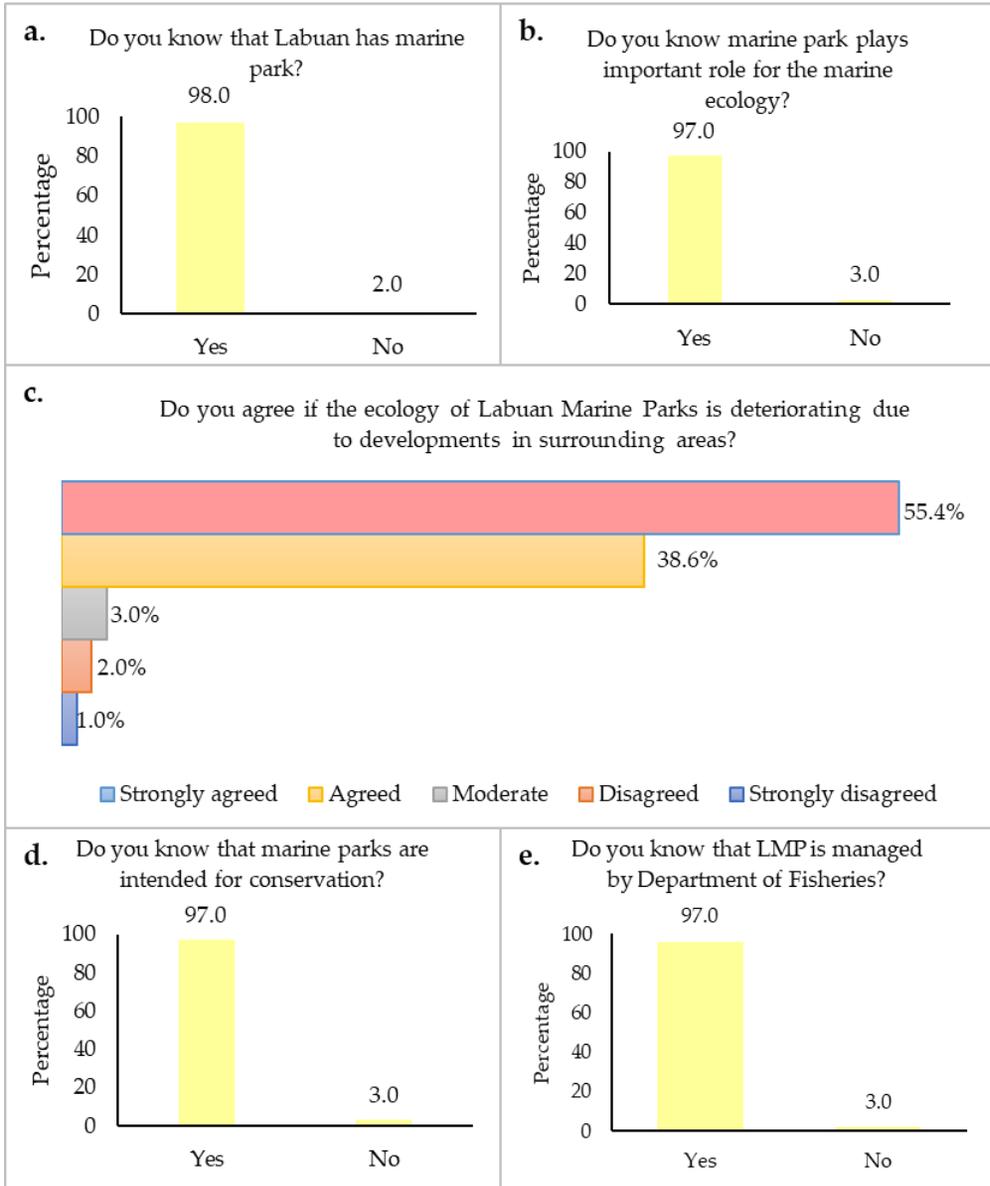


Figure 6: Awareness of sustainability and conservation in LMP
(Source: Field work survey, August 2022.)

Preferred Activities in LMP

The majority of respondents identified snorkelling, diving, swimming, sunbathing, relaxing, and kayaking as their preferred activities. Mustajap et al. (2015) noted that scuba diving particularly at coral reefs and shipwreck sites, represents the primary tourist attraction in LMP. This observation is consistent with Jaafar and

Maideen (2012), who found that diving, snorkelling, and island tours are the main activities in Pulau Perhentian, Pulau Redang, Pulau Tioman, and Pulau Kapas. Similarly, Tuohy et al. (2022) reported that most visitors to Ningaloo Marine Park engaged in scuba diving, snorkelling, and swimming.

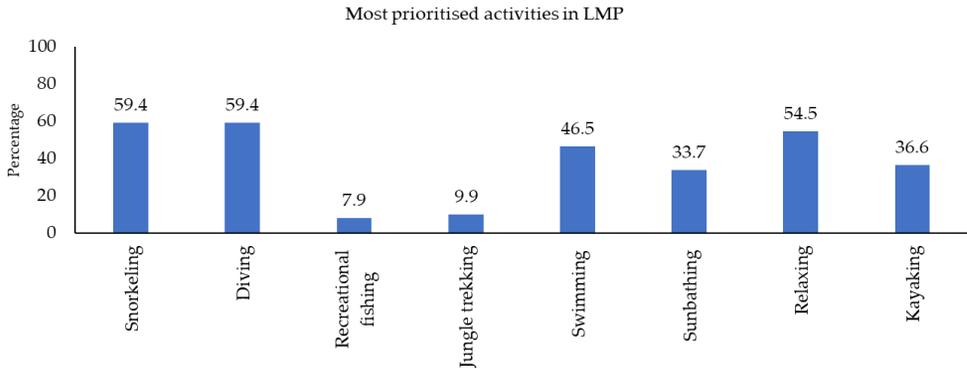


Figure 7: Prioritised activities in LMP
(Source: Field work survey, August 2022.)

Only 7.9% and 9.9% of respondents identified recreational fishing and jungle trekking, respectively, as prioritised activities, indicating these are the least preferred options. Local tourists refrain from fishing in LMP due to awareness of the prohibition on fishing in marine parks. Additionally, they avoid jungle trekking because of inadequate trails and signage. As a result, visitors opt for alternative activities in LMP to ensure their safety. Othman et al. (2008) support this perspective, noting that safety is a primary concern for visitors. Therefore, effective signage is a critical component in enhancing the appeal of an ecotourism destination.

Perceptions and Satisfaction Towards Services, Infrastructures and Facilities in LMP

Most respondents rated transportation, accommodation, and the natural environment in LMP as 'Good'. Satisfaction is defined as the degree to which travel expectations align with actual experiences (Carvache-Franco et al., 2022; Zeng & Li, 2021). Tourist satisfaction is influenced by the quality of tourism facilities (Al-Ababneh, 2013). Despite the predominance of 'Good' ratings, the scores for each component were moderate, ranging from 40% to 56%. These findings suggest a need for facility upgrades and improvements in cleanliness.

Table 3: Satisfaction level towards transportation, accommodation and environment in LMP

	Components	Frequency	Percentage
Transportation from the mainland to LMP	Frequency	47	46.5
	Safety	51	50.5
	Price	39	38.6
	Reliability	49	48.5
	Efficiency	52	51.5
	Cleanliness and comfort	56	55.4
	Service quality of the transport operator	50	49.5
Accommodation	Value for money	40	39.6
	Safety and security	46	45.5
	Cleanliness and comfort	49	48.5
	Overall ambience	49	48.5
	Facilities and amenities	45	44.6
	Service quality of hotel staff	46	45.5
Natural environment	Security	51	50.5
	Safety	51	50.5
	Clean and tidy	48	47.5

Source: Field work survey, August 2022.

Tourists' perceptions and satisfaction levels towards the facilities and infrastructure in the marine park significantly affect their intention to revisit. Previous research indicates that visitors are more likely to return to destinations that offer well-maintained infrastructure, clean and safe environments, diverse beach activities, and high-quality services (Amin, 2009; Yusoff & Kamdari, 2017).

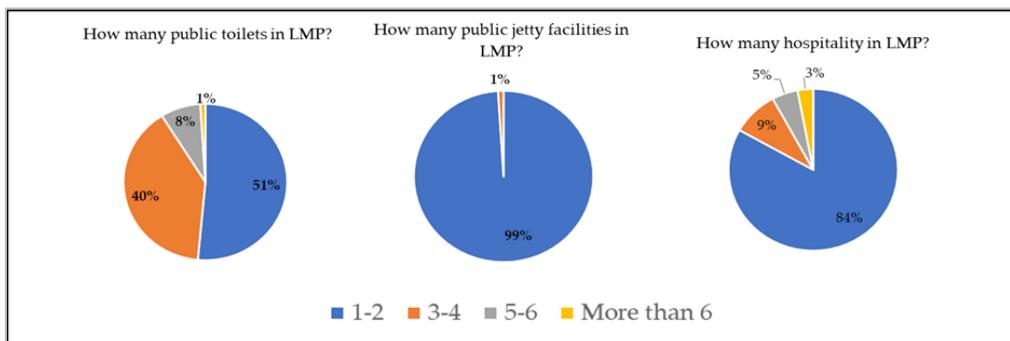


Figure 8: Perception of respondents towards facilities in LMP
(Source: Field work survey, August 2022.)

According to Figure 7, 51% of respondents reported the presence of only one to two public toilets, 99% indicated there is only one jetty, and 84% stated that there is only one resort in LMP, located on Pulau Rusukan Besar. Most respondents rated all components of the basic facilities and existing infrastructure in LMP as ‘Satisfied’ (Figure 8). These findings suggest that the facilities in LMP require upgrades and improvements to attract more visitors, as illustrated in Figure 9. However, certain components still require development to meet tourists’ expectations. The majority of respondents suggested that the jetty facility in LMP should be expanded in both size and number. Additionally, they recommended that the wooden jetty on Pulau Rusukan Besar be reconstructed using more durable materials, such as cement.

The development and improvement of infrastructure are essential for enhancing tourists’ experiences, strengthening tourism destinations, and preserving natural environments (Baloch et al., 2023). Facilities in the tourism sector serve as both supporting and primary elements in attracting tourists (Yoon et al., 2001). Satisfaction achieved through high-quality facilities can increase the likelihood of repeat visits (Hutchinson et al., 2009). Therefore, the location, attractions, and facilities of tourism destinations are critical for encouraging revisit intentions, and improvements should be implemented collaboratively by all stakeholders.

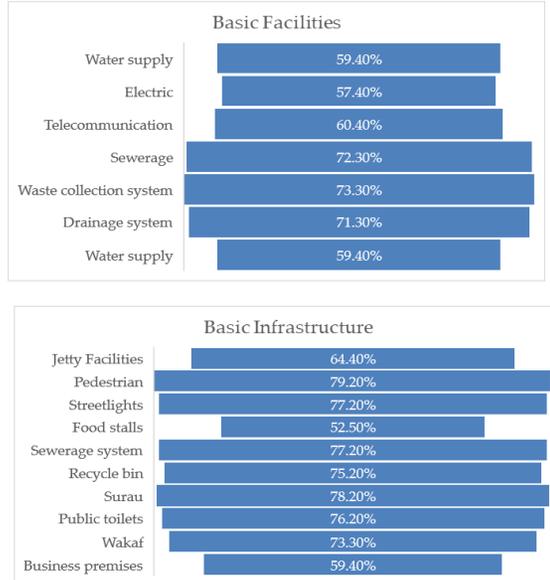


Figure 9: Satisfaction level towards basic hospitality in LMP. The data represents the satisfaction level of tourists, which is rated as “Satisfied” measured by the Likert scale

(Source: Field work survey, August 2022.)

Future Improvement and Revisit Intention

Most respondents indicated that certain infrastructure and facilities require improvements, as detailed in Figure 9. Notably, respondents requested additional recycling bins in LMP. Field observations revealed that only one recycling bin was present on Pulau Rusukan Besar. This finding suggests a high level of environmental awareness among local tourists, who intend to recycle and reduce waste in LMP. As tourist satisfaction is a significant factor known to positively influence revisit intention (Zeng & Li, 2021; Chen & Chen, 2010), addressing basic needs, particularly those identified by local tourists should be prioritised.

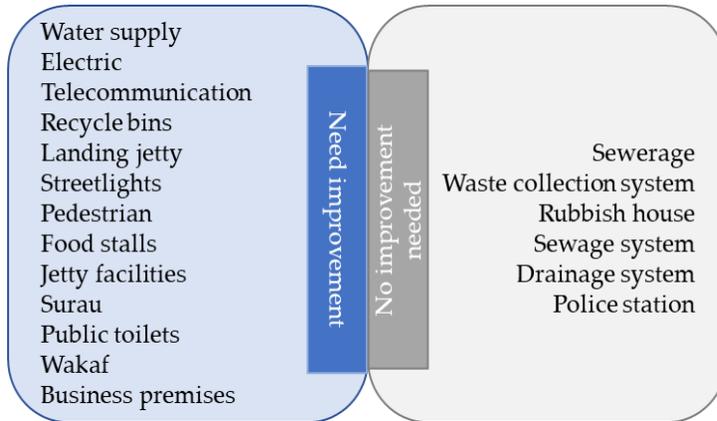


Figure 10: Suggestions for improvement of the basic facilities and infrastructures in LMP

(Source: Field work survey, August 2022.)

The majority of visitors reported a positive experience during their stay at LMP. As indicated in Figure 10, 98% expressed an intention to revisit LMP and a willingness to recommend it to others. Li et al. (2021) found that tourists are more likely to revisit and recommend a destination when they hold positive perceptions, experience high satisfaction, and enjoy meaningful travel experiences. Zeng and Li (2021) emphasised that strategic planning for tourist satisfaction is essential, as it significantly increases the likelihood of repeat visits and favourable reviews. These results also demonstrate that local tourists value the natural environment at LMP despite the high cost of tour packages and inadequate facilities, they remain willing to return.

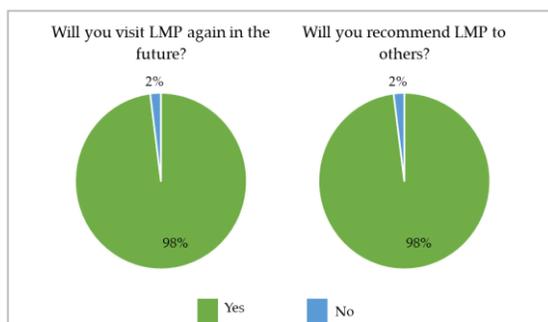


Figure 11: Tourist's willingness to revisit and recommend LMP to others
(Source: Field work survey, August 2022.)

CONCLUSION AND RECOMMENDATIONS

This study primarily utilised questionnaire surveys and field observations, given the limited availability of publications on tourism facilities and services in LMP. Local tourists generally express satisfaction with ecotourism services in LMP, yet recommend renovating certain infrastructure using more durable building materials to enhance visitor experiences and support environmental preservation. Respondents acknowledge the importance of protecting the marine environment and recognise that marine parks are essential for conserving marine life. These findings highlight the necessity of sustainable development to protect ecosystems and maintain visitor interest. The study provides valuable insights for local authorities to strengthen eco-friendly policies and practices in LMP, including initiatives focused on sustainable consumption and recycling programs. Such efforts are consistent with SDG 14: Life Below Water by promoting sustainable tourism, environmental conservation, and community engagement.

A strategic management plan for sustainable ecotourism in LMP should be developed using the Marine Spatial Planning (MSP) approach to ensure the sustainability of the marine park and the well-being of the local community. Previous research indicates that ocean-based tourism increases the likelihood of conflicts over sea use, emphasising the importance of MSP in managing competing activities. By implementing zoning systems for tourism, fishing, and conservation, and adhering to the six MSP principles, LMP can achieve environmental integrity and socioeconomic resilience.

Future research should examine a broader range of stakeholders over a longer period to yield more comprehensive and up-to-date insights. Feasibility studies are also necessary to assess the current condition of the marine environment, zoning suitability, governance frameworks, and stakeholder participation mechanisms. Integrating spatial tools such as Geographic

Information Systems (GIS) to support data-driven decision-making in MSP will enhance the resilience of LMP to development pressures and the impacts of climate change.

ACKNOWLEDGEMENT

This work was fully funded by the Department of Fisheries Malaysia (grant number Vot 53484). This paper acknowledges the support from the Ministry of Higher Education's Higher Institution Centre of Excellence (Vot 55601).

REFERENCES

- Abdullah, M., Mamat, M. P., Adnan, N., & Hussain, F. N. T. (2020, 10-11 August). *Ecotourism as tool for eradicating rural poverty in Peninsular Malaysia* [Conference presentation]. IOP Conference Series: Earth and Environmental Science, Universiti Malaysia Kelantan, Pengkalan Chepa, Kelantan, Malaysia.
- Abdullah, S. I. N. W., Samdin, Z., Ho, J. A., Ng, S. I., & Phuah, K. T. (2019). Sustainability of marine park ecotourism in Malaysia: Predicting environmentally responsible behaviour among millennial tourists. *International Journal of Environmental Technology and Management*, 22(6), 432-455. <https://doi.org/10.1504/IJETM.2019.104917>
- Al-Ababneh, M. (2013). Service quality and its impact on tourist satisfaction. *Interdisciplinary Journal of Contemporary Research in Business*, 4(12), 164-177.
- Amin, M. A. M. (2009, June 2-4). *Faktor tarikan pelancongan pantai: Kajian kes di pantai Port Dickson, Negeri Sembilan* [Coastal tourism attraction factors: A case study of Port Dickson Beach, Negeri Sembilan] [Conference presentation]. Fourth Malaysian National Economic Conference (PERKEM IV), Kuantan, Pahang, Malaysia.
- Badola, R., Barthwal, S., & Hussain, S. A. (2012). Attitudes of local communities towards conservation of mangrove forests : A case study from the east coast of India. *Estuarine, Coastal and Shelf Science*, 96, 188-196. <https://doi.org/10.1016/j.ecss.2011.11.016>
- Baloch, Q. B., Shah, S. N., Iqbal, N., Sheeraz, M., Asadullah, M., Mahar, S., & Khan, A. U. (2023). Impact of tourism development upon environmental sustainability: A suggested framework for sustainable ecotourism. *Environmental Science and Pollution Research*, 30(3), 5917-5930. <https://doi.org/10.1007/s11356-022-22496-w>
- Barnette, P., & Wiwekwin, N. (2018). Integrated coastal management implementation and scaling up in Chonburi Province, Thailand. In C. Thia-

- Eng, C. L. Ming, G. Jacinto, S. A. Ross, & D. Bonga (Eds.), *Local contributions to global sustainable agenda: Case studies in integrated coastal management in the East Asian seas region* (pp. 469–482). Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and Coastal Management Center (CMC).
- Bernama. (2024, October 21). *Labuan marine park sees increase in hawksbill sea turtle landings*. <https://www.bernama.com/en/news.php?id=2354535>
- Borneo Post Online. (2024, May 31). *Labuan-Sabah bridge proposal awaiting updated technical study – Anwar*. <https://www.theborneopost.com/2024/05/31/labuan-sabah-bridge-proposal-awaiting-updated-technical-study-anwar/>
- Butler, R. W. (1980). The concept of a tourist area cycle of evolution: implications for management of resources. *Canadian Geographer/Le Géographe canadien*, 24(1), 5-12. <https://doi.org/10.1111/j.1541-0064.1980.tb00970.x>
- Caras, T., & Pasternak, Z. (2009). Long-term environmental impact of coral mining at the Wakatobi marine park, Indonesia. *Ocean & Coastal Management*, 52(10), 539-544. <https://doi.org/10.1016/j.ocecoaman.2009.08.006>
- Carvache-Franco, M., Pérez-Orozco, A., Carvache-Franco, W., Viquez-Paniagua, A. G., & Carvache-Franco, O. (2022). Motivations and their influence on satisfaction and loyalty in eco-tourism: A study of the foreign tourist in Costa Rica. *Anatolia*, 33(3), 347-361. <https://doi.org/10.1080/13032917.2021.1933115>
- Carvalho, M. (2023). Rafizi: B40, M40 categorisation being phased out, subsidies to be based on net disposable income. *The Star*. <https://www.thestar.com.my/news/nation/2023/06/14/subsidies-to-be-based-on-net-disposable-income-govt-phasing-out-use-of-b40-m40-categories-says-rafizi>
- Casimiro, D., Ventura, M. A., Botelho, A. Z., & Guerreiro, J. (2023). Ecotourism in Marine Protected Areas as a tool to value natural capital and enhance good marine governance: A Review. *Frontiers in Marine Science*, 9. <https://doi.org/10.3389/fmars.2022.1002677>
- Ceballos- Lascuráin, H. (1996). *Tourism, ecotourism, and protected areas: The state of nature-based tourism around the world and guidelines for its development*. Island Press.
- Chen, C. F., & Chen, F. S. (2010). Experience quality, perceived value, satisfaction and behavioral intentions for heritage tourists. *Tourism management*, 31(1), 29-35. <https://doi.org/10.1016/j.tourman.2009.02.008>
- Chen, F., Lai, M., & Huang, H. (2020). Can marine park become an ecotourism destination? Evidence from stakeholders' perceptions of the

- suitability. *Ocean & Coastal Management*, 196, Article 105307. <https://doi.org/10.1016/j.ocecoaman.2020.105307>
- Chirenje, L. I. (2017). Contribution of ecotourism to poverty alleviation in Nyanga, Zimbabwe. *Chinese Journal of Population Resources and Environment*, 15(2), 87-92. <https://doi.org/10.1080/10042857.2017.1319172>
- Christie, M. R., Tissot, B. N., Albins, M. A., Beets, J. P., Jia, Y., Ortiz, D. M., ... & Hixon, M. A. (2010). Larval connectivity in an effective network of marine protected areas. *PloS one*, 5(12), Article e15715. <https://doi.org/10.1371/journal.pone.0015715>
- Cobbinah, P. B. (2015). Contextualising the meaning of ecotourism. *Tourism Management Perspectives*, 16, 179-189.
- Daily Express. (2023, May 11). *Drop in number of turtle eggs on Labuan marine parks a cause for concern*. <https://www.sinardaily.my/article/195739/focus/national/drop-in-number-of-turtle-eggs-in-labuan-marine-parks-is-cause-for-concern>
- Department of Fisheries Malaysia. (2024). Pengurusan Taman Laut, Pusat Penyu dan Santuari [Management of Marine Parks, Turtle Centres, and Sanctuaries]. <https://www.dof.gov.my/perkhidmatan/taman-laut-pengurusan-sumber/pengurusan-taman-laut/>
- Di Lorenzo, M., Claudet, J., & Guidetti, P. (2016). Spillover from marine protected areas to adjacent fisheries has an ecological and a fishery component. *Journal for Nature Conservation*, 32, 62-66. <https://doi.org/10.1016/j.jnc.2016.04.004>
- Donohoe, H. M., & Needham, R. D. (2006). Ecotourism: The evolving contemporary definition. *Journal of Ecotourism*, 5(3), 192-210. <https://doi.org/10.2167/joe152.0>
- Dowling, R., & Fennell, D. (2003). The context of eco-tourism policy and planning. In David, A. F. & Ross, K. D. (Eds), *Ecotourism policy and planning* (pp. 1-20). CABI Publishing.
- Ehler, C. (2021). Two decades of progress in Marine Spatial Planning. *Marine Policy*, 132, Article 104134. <https://doi.org/10.1016/j.marpol.2020.104134>
- Ehler, C., & Douvère, F. (2007). Visions for a Sea change: Report of the First International Workshop on Marine Spatial Planning, Intergovernmental Oceanographic Commission and the Man and the Biosphere Programme UNESCO Headquarters. Paris, France. 8-10 November 2006. <https://unesdoc.unesco.org/ark:/48223/pf0000153465>
- Ehler, C., Zaucha, J., & Gee, K. (2019). Maritime/marine spatial planning at the interface of research and practice. In Zaucha, J., Gee, K. (Eds), *Maritime Spatial Planning: past, present, future* (pp. 1-21). Palgrave Macmillan.

- Fang, Q., & Ma, D. (2018). *Reducing use conflicts through marine functional zoning*. PEMSEA. https://www.pemsea.org/sites/default/files/2023-11/ICM_Case_Studies_Book_47_Part_III_CS45.pdf
- Fatt, B. S., Hashim, N. A. A. N., Alias, M. A., Awang, Z., Safri, F. H. M., Bakansing, S., ... & Sinidol, G. (2021). Visitor revisit intention and perceived values towards Tunku Abdul Rahman Marine Park, Sabah. *The Journal of Contemporary Issues in Business and Government*, 27(2), 4769–4780. <https://doi.org/10.47750/cibg.2021.27.02.498>
- Ghosh-Harihar, M., An, R., Athreya, R., Borthakur, U., Chanchani, P., Chetry, D., ... & Price, T. D. (2019). Protected areas and biodiversity conservation in India. *Biological Conservation*, 237, 114–124. <https://doi.org/10.1016/j.biocon.2019.06.024>
- Hadi, S. P. (2018, October 11–12). *Integrated community based coastal management: Lesson from the field* [Conference presentation]. IOP Conference Series: Earth and Environmental Science, Yogyakarta, Indonesia.
- Hanim, N., Salleh, M., Redzuan, O., & Aini, H. N. F. (2010). *The impact of marine park gazettement to local community sustainable livelihoods: A case study of Redang and Tioman Islands* (MPRA Paper No. 22680). Munich Personal RePEc Archive. <https://mpra.ub.uni-muenchen.de/22680/>
- Haron, N. F., Aziz, I., Ghani, H. A., & Amirah, N. A. (2020). Environmental awareness: Do people really concern about the Setiu Wetlands in Terengganu, Malaysia? *International Journal of Academic Research in Business and Social Sciences*, 10(10), 1066–1079. <http://dx.doi.org/10.6007/IJARBS/v10-i10/8268>
- Harun, R., Chiciudean, G. O., Sirwan, K., Arion, F. H., & Muresan, I. C. (2018). Attitudes and perceptions of the local community towards sustainable tourism development in Kurdistan regional government, Iraq. *Sustainability*, 10(9), Article 2991. <https://doi.org/10.3390/su10092991>
- Hutchinson, J., Lai, F. & Wang, Y. (2009). Understanding the relationships of quality, value, equity, satisfaction, and behavioral intentions among golf travelers. *Tourism Management*, 30(2), 298–308. <https://doi.org/10.1016/j.tourman.2008.07.010>
- Jaafar, M., & Maideen, S. A. (2012). Ecotourism-related products and activities, and the economic sustainability of small and medium island chalets. *Tourism Management*, 33(3), 683–691. <https://doi.org/10.1016/j.tourman.2011.07.011>
- Kaur, C. R. (2006). *National ecotourism plan: Assessing implementation of the guidelines for marine parks* [Unpublished paper]. Maritime Institute of Malaysia (MIMA).

- Kelfaoui, A., Rezzaz, M. A., & Kherrou, L. (2021). Revitalization of mountain rural tourism as a tool for sustainable local development in Kabylie (Algeria): The case of Yakouren municipality. *Geo Journal of Tourism and Geosites*, 34(1), 112-125.
- Kimbu, A. N., & Ngoasong, M. Z. (2013). Centralised decentralisation of tourism development: A network perspective. *Annals of Tourism Research*, 40, 235-259. <https://doi.org/10.1016/j.annals.2012.09.005>
- Kiper, T. (2013). Role of ecotourism in sustainable development. In M. Özyavuz (Ed.), *Advances in landscape architecture* (pp. 773-802), InTech.
- Kruczek, Z., Kruczek, M., & Szromek, A. R. (2018). Possibilities of using the tourism area life cycle model to understand and provide sustainable solution for tourism development in the Antarctic region. *Sustainability*, 10(1), Article 89.
- Kry, S., Sasaki, N., Datta, A., Abe, I., Ken, S., & Tsusaka, T. W. (2020). Assessment of the changing levels of livelihood assets in the Kampong Phluk community with implications for community-based ecotourism. *Tourism Management Perspectives*, 34, Article 100664. <https://doi.org/10.1016/j.tmp.2020.100664>
- Latip, A. R. A., Aziz, N., Sa'at, N., Othman, N., & Rasid, N. H. A. (2022) The effects of support on coastal tourism planning towards well-being of the community. *Journal of Tourism and Development*. 38(1), 85-96. <https://doi.org/10.34624/rtd.v38i0.27382>
- Lee, T. Z. W., Yazid, H., Mukri, I., Arifuddin, M. N., Fong, P. H., Parasuraman, B., & Jayaraj, V. K. (2022). Tourist satisfaction on ecotourism facilities and services in Taman Negara National Park, Sungai Relau, Merapoh, Pahang. *Journal of Wildlife and Parks*, 37, 83-107.
- Li, T. T., Liu, F., & Soutar, G. N. (2021). Experiences, post-trip destination image, satisfaction and loyalty: A study in an ecotourism context. *Journal of Destination Marketing & Management*, 19, Article 100547. <https://doi.org/10.1016/j.jdmm.2020.100547>
- Lobat, Z., Saeed, A., Jafari, H. R., & Bagherzadeh, K. M. (2021). Sustainable wetland management through bridging the communication gap between conservation projects and local communities. *Environment, Development and Sustainability*, 23(7), 11098-11119. <https://doi.org/10.1007/s10668-020-01082-5>
- Lua, W. Y., Aziz, N., Ghazali, F., Idris, I., Rasid, N. H. A., & Talaat, W. I. A. W. (2021). Marine spatial planning and the local community's awareness of ecosystems in Setiu Wetland. *Journal of Southeast Asian Studies*, 26(1), 97-123. <https://doi.org/10.22452/jati.vol26no1.5>

- Ma, B., Cai, Z., Zheng, J., & Wen, Y. (2019). Conservation, ecotourism, poverty, and income inequality—A case study of nature reserves in Qinling, China. *World Development*, 115, 236-244. <https://doi.org/10.1016/j.worlddev.2018.11.017>
- Masud, M. M., Aldakhil, A. M., Nassani, A. A., & Azam, M. N. (2017). Community-based ecotourism management for sustainable development of marine protected areas in Malaysia. *Ocean & Coastal Management*, 136, 104-112. <https://doi.org/10.1016/j.ocecoaman.2016.11.023>
- Masud, M. M., Kari, F., Yahaya, S. R. B., & Al-Amin, A. Q. (2016). Livelihood assets and vulnerability context of marine park community development in Malaysia. *Social Indicators Research*, 125, 771-792. <https://doi.org/10.1007/s11205-015-0872-2>
- Masud, M., Othman, A., Akhtar, R., & Rana, M. (2021). The underlying drivers of sustainable management of natural resources: The case of marine protected areas (MPAs). *Ocean & Coastal Management*, 199, Article 105405. <https://doi.org/10.1016/j.ocecoaman.2020.105405>
- McNeill, A., Clifton, J., & Harvey, E. S. (2018). Attitudes to a marine protected area are associated with perceived social impacts. *Marine Policy*, 94, 106-118. <https://doi.org/10.1016/j.marpol.2018.04.020>
- Miller, G., & Twining-Ward, L. (2005). *Monitoring for a sustainable tourism transition: The challenge of developing and using indicators*. Cabi.
- Misni, A. & Jarami, E. M. (2021). Threats caused by marine ecotourism activities in Payar Island Marine Park, Malaysia. *Hong Kong Journal of Social Sciences*, 57, 338-349.
- Mustajap, F., Saleh, E., Madin, J., & Hamid, S. A. (2015). Marine habitat mapping at Labuan Marine Park, Federal Territory of Labuan, Malaysia. *Ocean Science Journal*, 50, 291-298. <https://eprints.ums.edu.my/id/eprint/37970/2/FULLTEXT.pdf>
- National Geographic. (2022). *Marine park*. National Geographic Society. <https://education.nationalgeographic.org/resource/marine-park/>
- Newsome, D., Moore, S.A. and Dowling, R.K. (2002). *Natural area tourism: Ecology, impacts and management*. Channel View Publications.
- Omar, H., Husin, T. M., & Parlan, I. (2020). *Status of mangroves in Malaysia*. Forest Research Institute Malaysia, Ministry of Energy and Natural Resources.
- Othman, N., Ismail, S. S., Taha, R. M., & Mahdzar, M. (2008, 22-27 April). *Tourist satisfaction and service quality in Taman Negara Pahang, Malaysia* [Conference presentation]. 4th World Conference for Graduate Research in Tourism, Hospitality and Leisure, Antalya, Turkey.
- Patel, H. I. I., & Gurning, R. O. S. (2023). Increasing marine tourism with marine spatial planning method and growth of marine ecosystem management of

- unused marine areas. *Journal of Marine-Earth Science and Technology*, 4(2), 59-63. <https://doi.org/10.12962/j27745449.v4i2.1059>
- Rahman, M. A. A., Gjazali, F., Rusli, M. H. M., Aziz, N., & Talaat, W. I. A. W. (2019). Marine protected areas in Peninsular Malaysia: Shifting from political process to co-management. *Journal of Politics and Law*, 12(4). <https://doi.org/10.5539/jpl.v12n4p22>
- Razali, M. K., Mohamad, N. H., Johari, N., & Yaakub, R. (2016, January 21-22). *Persepsi komuniti terhadap pembangunan pelancongan di Manjung, Perak* [Community perceptions of tourism development in Manjung, Perak] [Conference presentation]. International Language & Tourism Conference, Kulliyah of Languages and Management, International Islamic University Malaysia, Kuala Lumpur, Malaysia.
- Reimer, J. M., Devillers, R., Zuercher, R., Groulx, P., Ban, N. C., & Claudet, J. (2023). The Marine Spatial Planning Index: A tool to guide and assess marine spatial planning. *npj Ocean Sustainability*, 2(15), Article 15. <https://doi.org/10.1038/s44183-023-00022-w>
- Rosadi, A., Dargusch, P., & Taryono, T. (2022). Understanding how marine protected areas influence local prosperity — A case study of Gili Matra, Indonesia. *International Journal of Environmental Research and Public Health*, 19(20), Article 13508. <https://doi.org/10.3390/ijerph192013508>
- Safuan, C. D. M., Boo, W. H., Siang, H. Y., Chark, L. H., & Bachok, Z. (2015). Optimization of coral video transect technique for coral reef survey: Comparison with intercept transect technique. *Open Journal of Marine Science*, 5(4), 379-397. <http://dx.doi.org/10.4236/ojms.2015.54031>
- Santos C. F., Ehler, C. N., Agardy, T., Andrade, F., Orbach, M. K., & Crowder, L. B. (2019). Marine spatial planning. In C. Sheppard (Ed.), *World seas: An environmental evaluation* (pp. 571-592). Academic Press. <https://doi.org/10.1016/B978-0-12-805052-1.00033-4>
- Selig, E. R., Mckinnon, M. C., Turner, W. R., Hole, D. G., Chu, J., Allison, E. H., ... Holland, M. B. (2019). Mapping global human dependence on marine ecosystems. *Conservation Letter*, 12(2), Article e12617. <https://doi.org/10.1111/conl.12617>
- Talib, Z. B., Karim, A. K. B. A., Wagiman, S. B., & Ramli, M. (2004, October 30-November 3). Marine parks Malaysia-management strategy. In *Proceedings of the 1st Regional Workshop on Enhancing Coastal Resources: Artificial Reefs, Stationary Fishing Gear Design and Construction and Marine Protected Areas Thailand*. Training Department, Southeast Asian Fisheries Development Center.

- Teng, X., Zhao, Q., Zhang, P., Liu, L., Dong, Y. E., Hu, H., ... & Xu, W. (2021). Implementing marine functional zoning in China. *Marine Policy*, 132, Article 103484.
- Törn, A., Siikamäki, P., Tolvanen, A., Kauppila, P., & Rämetsä, J. (2008). Local people, nature conservation, and tourism in northeastern Finland. *Ecology and Society*, 13(1), Article 8. <https://doi.org/10.5751/ES-02202-130108>
- Torres Tricárico, L., dos Santos Pires, P., & da Conceição Walkowski, M. (2019). Spaces for collaborative arrangements as social sustainability in rural accommodation in Brazil: Pouso dos Paula. *Sustainability*, 11(12), Article 3236. <https://doi.org/10.3390/su11123236>
- Tuohy, P., Cvitanovic, C., & Shellock, R. J. (2022). Understanding visitor awareness and knowledge of marine parks: Insights from the Ningaloo Coast, Australia. *Ocean & Coastal Management*, 227, Article 106282. <https://doi.org/10.1016/j.ocecoaman.2022.106282>
- Vaughan, D. & Agardy T. (2020). Marine protected areas and marine spatial planning – allocation of resource use and environmental protection. In J. Humphreys & R. W. E. Clark (Eds.), *Marine protected areas* (pp. 13-35). Elsevier. <https://doi.org/10.1016/B978-0-08-102698-4.00002-2>
- Weaver, D. B. (2001) *The encyclopedia of ecotourism*. CABI Publishing.
- World Bank. (2009). World development indicators. Keeping the essentials flowing: Promoting food security and sustainable livelihood through integrated coastal management. GEF, UNDP, UNOPS and PEMSEA.
- Yacob, M. R., Radam, A., & Samdin, Z. (2011). Tourists perception and opinion towards ecotourism development and management in Redang Island Marine Parks, Malaysia. *International Business Research*, 4(1), 62-73. <https://doi.org/10.5539/ibr.v4n1p62>
- Yanes, A., Zielinski, S., Diaz Cano, M., & Kim, S. I. (2019). Community-based tourism in developing countries: A framework for policy evaluation. *Sustainability*, 11(9), Article 2506. <https://doi.org/10.3390/su11092506>
- Yoon, Y., Gursoy, D., & Chen, J. (2001). Validating a tourism development theory with structural equation modeling. *Tourist Management*, 22, 363–372. [https://doi.org/10.1016/S0261-5177\(00\)00062-5](https://doi.org/10.1016/S0261-5177(00)00062-5)
- Yusoff, R. & Kamdari, N. A. M. (2017, November 28-29). *Faktor tarikan pelancongan pantai: Kajian kes di Pantai Irama Bachok, Kelantan* [Coastal tourism attraction factors: A case study of Pantai Irama, Bachok, Kelantan] [Conference presentation]. International Conference on Economics 2017, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia.

Zeng, L. & Li, R. Y. M. (2021). Tourist satisfaction, willingness to revisit and recommend, and mountain kangyang tourism spots sustainability: A structural equation modelling approach. *Sustainability*, 13(19), Article 10620. <https://doi.org/10.3390/su131910620>

How to cite this article (APA):

Lua, W. Y., Abd Rasid, N. H., Che Din Mohd, S., Abdul Latip, A.R., Wan Talaat, W. I. A., Salih Udin, N. S., Harun, & M. Z., Aziz, N. (2025). Local tourists' perception of ecotourism development in Labuan Marine Park, Malaysia. *JATI - Journal of Southeast Asian Studies*, 30(2), 64-95.

Date received: 12 August 2024 Date of acceptance: 1 December 2025