

# Determining the Local Communities' Livelihood Resources in Coastal and Marine Tourism Destination Development in Pangkor Island, Malaysia: Preliminary Findings

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## ABSTRACT

Coastal and marine tourism development is best described as sustainable tourism as it helps in reducing socio-cultural and economic impacts towards the growth of a sustainable Blue Economy. Hence, a study on how tourism development effects the local communities' livelihood resources has become a crucial factor within these contexts. This paper reports on a small pilot study to develop a set of community sustainable livelihoods in coastal and marine destination development in Pangkor Island, Perak, Malaysia. Local communities were surveyed to identify the indicator of their current living conditions they value most for the sustainable livelihood development of their communities. It seeks to determine the preliminary perceptions of local communities on the development of Pangkor Island in the context of their livelihood resources such as financial, social, human, physical, and natural assets. The pilot test sample size was 64 respondents, and random sampling techniques were utilized. It is hoped by developing this pilot test result will contributes to the establishment of a foundation for future sustainability in coastal and marine destination in Malaysia as well as offers beneficial implications to the industry practitioners.

**Keywords:** *Coastal and Marine; Tourism Development; Sustainable Livelihood; Livelihood Resource*

## 1.0 INTRODUCTION

Tourism, particularly marine and coastal tourism, is one of the world's fastest-expanding businesses (Zhao & Min Li, 2018) and a global force for economic and regional development, especially for island communities (Hanafiah et al., 2019; Hsieh & Kung, 2013; Praptiwi et al., 2021). In comparison to other tourism industries, the marine tourism industry has developed tremendously to become one of the world's largest and is among the top tourism products worldwide (Miller, 1993; Phillips & House, 2009; Rangel-Buitrago et al., 2019). Malaysia has been a popular marine and coastal destination with numerous islands and beaches across Asia, with the South China Sea to the East, the Straits of Malacca to the West, and the Andaman Sea to the Northwest. Due to the abundant marine resources, beaches and islands are among the main attractions for Malaysia's coastal recreation tourism (Alam & Paramati, 2016; Balong, 2004; Yusoff et al., 2006). Besides, Malaysia has one of the richest marine resources and coral reefs in Southeast Asia contributing to the livelihood and sustenance of the people (Kaur, 2020). This feature constitutes an important tourist attraction that stimulates economic growth (Jaafar & Maiden, 2012; Tahir, 2008; Vasanth, 2005) and tourism is among the leading contributors to the growth of the tourism sector in Malaysia and is gradually growing in both demand and supply (Sulaiman et al., 2017).

Given the important role of marine and coastal destination development in Malaysia in sustaining the living conditions of the community, the current study is centred on the island tourism environment due to the growing popularity of the destination to meet the sustainability livelihoods of the local communities. Even though past research has acknowledged the opportunity of the development of tourism towards the community through sustainability, (Li et al., 2020; Muresan et al., 2016; Sharpley, 2002; Su et al., 2019; Xu et al., 2022), there are still lack of attention focussing on the context of marine and coastal destination in Malaysia, therefore an extended research is needed to comprehend the impact of tourism on the community by examining the challenges and benefits gained by the communities. Mohamad et al. (2018) stated that the growth of sustainable tourism in Malaysia especially the coastal and marine areas need an in depth understanding from the stakeholders as well as how they should operate in a complex way.

Therefore, responding towards the fast growth of the coastal and marine destinations leads to the destruction and disturbance of communities livelihood as well as it becomes an obstacle for the community to afford living in their own areas due to the uncontrollable development of tourism (Clay & Zimmerer, 2020; Fenner & Cernev, 2021; Liao et al., 2020; Ma et al., 2021; Nguyen et al., 2020; Tao & Wall, 2009). Pangkor Island, one of the main attractions in Perak, Malaysia has been involved in developing tourism industry since the 1970s. Since then, it has undergone various policymaking and tourism development processes, such as the Pangkor Development Plan 1999–2015. Additionally, the island has been gazetted duty-free since 1st January 2020, and this is among other initiatives being planned to spur the island's economic growth and enhance its attractiveness as a tourism destination towards premier sustainable tourism development. Yet the impact is limited and deteriorating (Noor et al., 2022; Sulaiman, 2018). Thus, the question arises does the tourism development affect the community's perceptions on their livelihood assets differently? Therefore, the purpose of this current study is to examine the communities' view on their livelihood resources existing on Pangkor Island, Malaysia.

## 2.0 LITERATURE REVIEW

### 2.1 Coastal and Marine Tourism Destination Development

Among the most popular tourism developments in rural destinations are coastal and marine tourism (Ferreira et al., 2009; Mat Som & Badarneh, 2011). Marine tourism mostly takes place at sea and includes cruise and sailing activities. In contrast, coastal tourism takes place in coastal areas that include beach-based tours and recreational activities, such as swimming and sunbathing, coastal walks, and resorts (Tegar & Gurning, 2018). The concept of coastal tourism includes essential tourism and leisure activities within the coastal zone and offshore coastal waters. Coastal and marine tourism serves as a promising alternative for economic development in the face of struggling primary industries and is identified as a possible avenue for sustainable development as they are interconnected and depend on the sea and the marine environment. Tourism development is crucial for the sustainable livelihoods of residents, particularly in developing countries, and it is recognized as a tool to increase economic benefits by 2030 through sustainable management of fisheries, aquaculture, and tourism (UN DESA & World Resources Institute, 2019). The Mohonk Agreement (2001) described marine tourism as closely linked to sustainable tourism, which aims

to minimize environmental and socio-cultural impacts while providing economic benefits to local communities and host countries (Sulaiman et al., 2018). As a result, tourism has been utilized for rural economic development in terms of employment, income distribution, and tourism activities (Chatkaewnapanon et al., 2017). While tourism can provide an economic opportunity for traditional fishing communities, it can also put a strain on limited local resources and threaten local culture and traditional livelihoods (Fabinyi, 2010; Ghosh, 2012). Evidently, Porter et al. (2015) argue that coastal fishing communities can decrease their reliance on fisheries by introducing tourism as an alternative source of income. Therefore, community sustainability in tourism development is essential to improving socio-economic and local livelihoods, especially in rural areas (Ma et al., 2021).

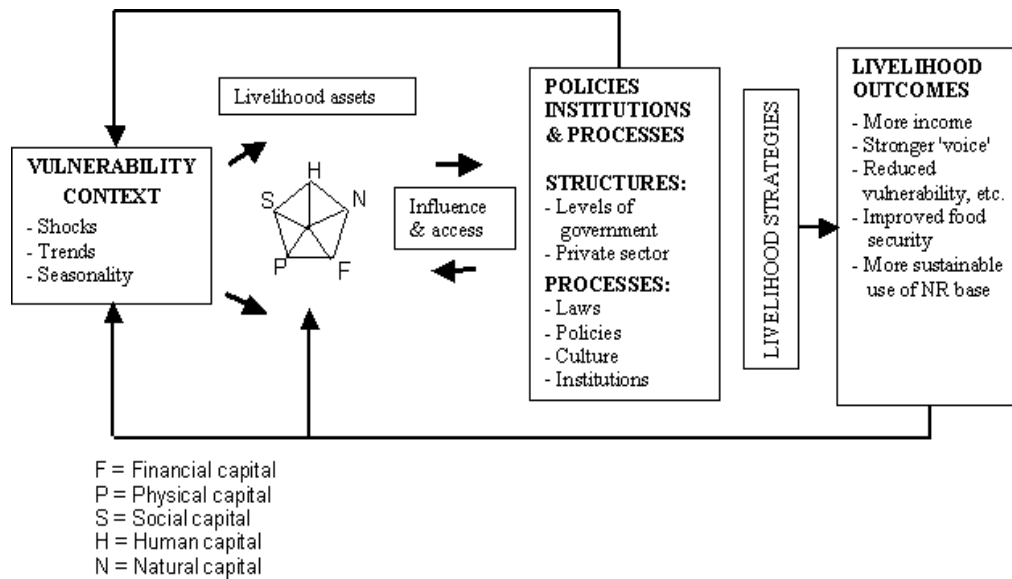
Tourism is a double-edged sword for traditional fishing communities (Yu, 2023). It provides an appealing potential for economic growth by drawing tourists who want to experience the communities' distinguished culture and lifestyle. This industry might improve the local economies by selling products and services including fishing activities, cultural as well as handicraft (Odede et al., 2020). This generation of income has the potential to increase the local living lifestyle and promote job opportunities other than doing the fishing activities. However, Coles et al. (2021) and Ngin et al. (2020) propounded that depending on tourism as a main source of income might put the communities in a vulnerable situations since this industry is considered as seasonal and susceptible to threat or disaster such as economic downturns or pandemic. Furthermore, the financial generated from the cultural activities and traditional sites changed to draws tourists might negatively affect the true identity of the culture itself (Somoza-Medina & Monteserin-Abella, 2021). On the other hand, this fast-growing industry is assumed to put a trouble on the resources and infrastructure of the communities. As a consequence, it might jeopardise the long-term sustainability of the communities' economies (Kuklina et al., 2021). A thriving demand for housings, transportations, foods in the over-crowded tourists' area can put stressed on the ecosystem too including the marine habitats.

On the other hand, Gumbo (2022) posited that uncontrollable tourism activities i.e., overfishing and pollution from developments, might disrupt and destroy the natural resources that are essential to the livelihoods of fishing communities. This disruption not only put danger on the long term-sustainability of the conventional fishing methods, but it also minimises the potential of attraction in the area to be closed for future tourist due to the continuous environmental degradation. To simply highlight these issues, an effective approach needs to be strategized to ensure the tourism development (George, 2020; Li et al., 2020; Sharpley, 2020). Sustainable tourism programs should emphasise the importance of community engagement, protection of environment as well as cultural preservation so that, it could help to safeguard the uniqueness of the traditional fishing communities studied by Labadi et al. (2021). Kyvelou and Ierapetritis (2020) added, this approach might imply the enforcement of rules and regulations in order to minimise the environmental destruction caused by the tourists and provide a substitute approach and opportunity that focus on the livelihood of the communities rather than replacing the activities of fishing among the locals. Practically, coastal and marines' communities can be benefitted from the tourism activities while preserving and conserving their culture and natural resources for the next generations by adopting a sustainable approach for the development.

## **2.2 Sustainable Livelihoods Approach (SLA)**

The Sustainable Livelihoods Approach (SLA) found in the 1990s by Chambers and Conway (1992), followed by Scoones (1998), Carney (1998, 2002), and Ashley and Carney (1999) (see figure 1). The SLA concept, which originated in the context of rural development, has subsequently been implemented and embraced in a variety of instances in both developed and developing countries (Ellis, 2000; Scoones, 1998). Chambers and Conway established the following composite definition of sustainable rural livelihood in 1992, which is typically utilised at the household level:

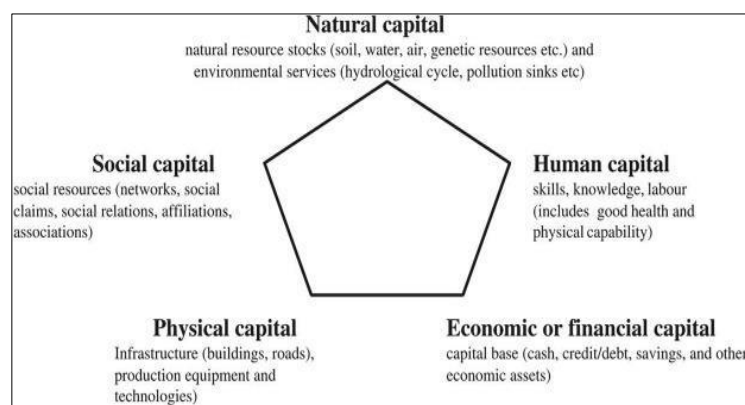
*“ A livelihood comprises the capabilities, assets (stores, resources, claims, and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation: and which contributes net benefits to other livelihoods at the local and global levels and in the short and long-term.”*



**Figure 1: Sustainable Livelihood Framework**  
Source: Carney (1998)

The sustainable livelihood framework is considered a suitable tool for analyzing livelihoods in this study because it links the broader socio-economic components of household assets, livelihood activities, outcomes of livelihoods activities, and factors mediating access to livelihood activities (Ellis, 2000; Farrington et al., 2004; Scoones, 1998). It also frames livelihoods as holistic activities. This framework has five main components that are critical for investigating community livelihoods and rural development. The components are contexts, livelihood resources or assets, transforming processes and structures, livelihood strategies, and livelihood outcomes.

The sustainable livelihood framework further highlights that assets or resources are the inputs to a livelihood agenda that are utilized to produce livelihood outcomes (Scoones, 1998), besides, it provides an overview of poverty as the limited ability of people or households that shows the vulnerability system, the trends, and the shocks of life (Murray & Ferguson, 2001). Resources, assets, or capital (see figure 2) are sections that build sustainable livelihoods at the level of people, households, and communities, which are divided into 5 sections (Murray & Ferguson, 2002), namely: (i) Social assets. These assets are made of the social connections that illustrate how communities can achieve their goals, (ii) Physical assets. Physical assets include basic needs for housing and food, as well as access to services and information to develop livelihoods. (iii) Human resource assets. These assets show how communities can work with associated skills, knowledge, education, and leadership ability (iv) Natural assets are assets that are connected to stocks and environmental services. (v) financial assets.



**Figure 2: The Livelihood Resources or Assets**  
Source: DFID (2000)

### **2.2.1 Social Assets**

Social assets are an important component of a community's resources, contributing to its general resilience and well-being (Miles, 2021). Social assets are considered as the connection and network among the people and communities which depending to each other in order to control and overcome challenges, grab opportunities as well as aim to achieve their own goals (Baptista et al., 2021). This concept is not physical or easily calculated, yet they are essential to function as civilised by patterns of cooperation, reciprocity, and collective action. Abunyewah et al. (2023) found that the social assets can be considered as relationship among family, friendship, an organisation and association or a community as a whole. They are a group of people who are essential in sharing information, making decision, as well offering assistance to the community itself. One of the most significant criteria of social assets in the SLA model is their role in generating culture, which refers to the norms, values, and trust that underpin social connections (Thuiappu, 2021; Skhosana, 2021). Individuals and groups can use social capital to mobilize resources, coordinate activities, and work together to overcome shared concerns. A powerful relationship within the fishing community might enhance the resource and sharing as well as decision making on any tourism development (Gómez-Andújar, 2021). Social assets assist the communities to be more flexible by increasing social strength and democracy as well as enabling them to readjust the situation towards the changing circumstance and safeguard their livelihood in a long run. Nevertheless, as studied by Creutzig et al. (2023), it becomes crucial to acknowledge that social assets are not distributed equally among communities and can be affected by various factors such as socioeconomic inequality, power dynamics, and discriminatory behaviors. In some situations, certain communities may have stronger accessibility to social resources and networks than others, resulting in lack of opportunities and results. In addition, external forces such as modernisation can drastically change the traditional social structures and destroy the relationship, weakening social capital and threatening community resilience (Sheergojri et al., 2023). Therefore, even though social assets do provide huge benefit in terms of livelihood sustainability, efforts to reinforce their social value must be unbiased, participation should be enhanced, and communities' needs and wants need to be responded, ensuring that no one falls behind in their pursuit for sustainable development.

### **2.2.2 Physical Assets**

Physical assets, which support rural communities in preserving their livelihoods, are regularly affected by climate change and unforeseen events. Physical assets will be strengthened and maintained by community tourism activities, and they will be easily accessible without the assistance of others (Becker, 2017; Masud et al., 2016). Understanding how nature helps communities is also imperative, and this "blue economy" idea has increased the value of global ecosystem functions and ecological resources in the past century (Phelan et al., 2020). The idea highlights the importance of partnerships between community, local economy, and coastal eco-systems in establishing community-based ecotourism (CBE) to preserve destination natural and cultural heritage. The ecology at coastal areas supports tourists and locals in a wide range of modes, including food security, water quality, risk reduction, and economic opportunities including generating revenue (Aazami & Shanazi, 2020). Although tourism products such as handicrafts and fishing may assist local people to bring more money and enhance their financial resources, the capacity to achieve sustainable outcomes may be limited owing to the destination's fluctuations in seasons (Lasso & Dahles, 2018). Hence, people and their families have to strive persistently to secure financial resources and persist strong to disruptions and pressure. Thus, it creates issues and challenges toward community sustainability. On the other hand, for island communities, tourism participation is crucial to enhancing their social asset, which fosters communication and networking activities. By having a high social asset, it is easy to create new activities based on trust and assistance among neighbourhoods (Ávila-Foucat et al., 2021; Su et al., 2016; Diedrich et al., 2019).

### **2.2.3 Human Assets**

Human assets, as defined in the setting of SLA encompass a wide variety of characteristics essential to social stability and financial growth (Tambe, 2022). Human assets are especially important on islanders where coastal and marine tourism thrives notably in both the healthcare and education sectors. Rural communities need access to healthcare facilities including hospitals, health centres, and pharmacies to stay healthy and productive (Fischer et al., 2021; Lowe and Tejada, 2019; Towner and Davies, 2019). In a comparable manner, training and educational opportunities serve as essential for encouraging community members to take an interest in tourism-related activities and break the cycle of deprivation. Nevertheless,

significant hurdles persist in many coastal and island communities, where scarce resources, poor competencies, and restricted access to education hinder people from capitalising on tourism opportunities (Aazami & Shanazi, 2020; Burbano & Meredith, 2021; Su et al., 2016). These communities usually face obstacles such as poor infrastructure, poor-quality educational systems, and a scarcity of job training programmes tailored to the needs of the tourism sector. As a result, many community members are disqualified from participating in tourism-associated activities or are limited to unskilled, low-paying jobs, consolidating cycles of impoverishment and bias (Haris, 2023; Norman, 2020). To address those worries and maximise tourism's positive aspects to coastal and marine communities, policymakers and other parties need to collaborate. Authorities ought to invest extensively in human resources expansion, including healthcare, education, and professional development programmes (Fairer-Wessels, 2017; Westoby et al., 2021). This may involve increasing funding for healthcare facilities, improving educational quality, and expanding access to tourism-related training opportunities. Moreover, cooperation between authorities, not-for-profit organisations (NGOs), and business players can help to cultivate agreements and efficiently use resources to improve local citizens' skills and capabilities, allowing them to fully participate in and be benefitted from coastal and marine tourism.

#### **2.2.4 Natural Assets**

Coastal and marine ecosystems convey a number of ecosystem services, including fisheries, coastal protection, recreation, and cultural heritage, that serve as the basis for many businesses associated with tourism (Chakraborty et al., 2020). These natural features not only support local communities' livelihoods, but they also improve the overall experience of tourists by allowing for activities like as snorkelling, diving, and beachcombing. Natural assets are the diverse variety of biodiversity and ecological services available to communities (Zahoor et al., 2022). In the context of coastal and marine tourism, such resources play an important role in defining the attractiveness and ecological health of tourist attractions. Interestingly, Mondal and Palit (2022) claimed that excessive use and degradation of the environment are severe threats to the future sustainability of coastal and marine tourism industry. Unproductive fishing practices, pollution, habitat degradation, and climate change all harm the health and resilience of coastal and marine ecosystems, diminishing their ability to sustain biodiversity and human well-being (Lam et al., 2020; Shukla et al., 2021). This degradation not only decreases the visual and recreational value of tourist destinations, but it also jeopardises the long-term viability of tourism-related industries, as visitors seek out pristine and environmentally friendly regions. Moreover, the depletion of natural assets can have extensive consequences for local communities, resulting in reduced fish stocks, fewer job possibilities, and greater susceptibility to disasters such as hurricanes and surges of water. Hence, a proper administration of natural resources and preservation are required. Integrated coastal zone administration approaches that integrate protecting biodiversity, business development, and fairness can help to safeguard natural assets while enhancing the livelihoods of local populations (Chen et al., 2020; Shampa et al., 2023). To reduce the detrimental effects of tourism on coastal and aquatic environments, strategies that involve marine protected zones, ethical fisheries direction, and pollution management may be enacted. Besides, community-based programmes involving local stakeholders in the process of decision-making and resource management can help to build robustness as well as promote sustainability of natural resources, ensuring their survival for both present and future generations (Armitage et al., 2020).

#### **2.2.5 Financial Assets**

Capital assets, such as revenue, money, and financial stability, are vital factors in the SLA for creating and maintaining livelihoods (Tambe et al., 2022). In the setting of coastal and marine tourism, stakeholders usually emphasise expanding natural assets, such as marine habitats, in order to attract visitors, while simultaneously advocating for ethical tourism practices that seek to minimise negative environmental adverse consequences. Financial resources are essential for carrying out conservation and sustainable management measures such as marine protected areas, monitoring programmes, and eco-friendly infrastructure development. Utilise the financing, especially through authorities and nonprofit organisations, is critical for accelerating these initiatives and ensuring the long-term profitability and equality of coastal and marine tourism (Islam & Sarkat, 2022). It is vital to understand the relationship between financial assets and other forms of capital, such as physical assets, which are necessary for the construction and maintenance of tourism infrastructure (Annamalah et al., 2023; Pasanchat & Schott, 2021). Capital investments in building facilities such as harbours, highways, homes, and waste disposal

systems, are essential in ensuring tourist security, comfort, and satisfaction while also benefiting local communities through job creation and economic development (Abundabar and Pongpong, 2022). Nevertheless, it is critical to ensure that development projects are implemented in a sustainable manner, taking into account the long-term social and ecological consequences of tourist activities. Establishing an integrated strategy that brings together financial, coastal, and marine tourism could assist both local people and the environment, supporting long-term development.

### **2.3 Pangkor Island's Community Livelihood**

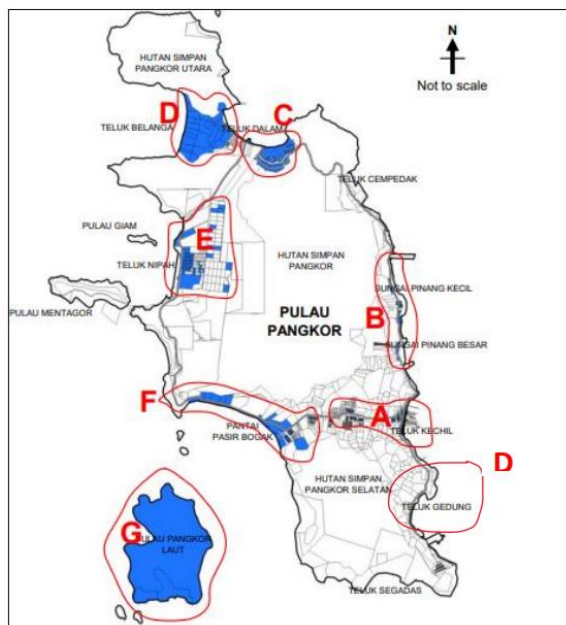
The concerns of Pangkor Island, particularly in terms of development and space limits, as highlighted by Jabatan Perancangan Bandar Desa Semenanjung Malaysia (JPBD) (Karim et al., 2013). Only 10.33 percent of all land area is considered suitable for development, posing a significant obstacle (Karim et al., 2013). This issue is worsened by the island's geography, which is made up of rocky terrain with few sandy beaches, mostly concentrated in selected villages such as Kampung Teluk Dalam, Teluk Nipah, and Pasir Bogak (Karim et al., 2013). These geographical constraints significantly restrict the island's ability for expanding its infrastructure and urban development (Yip & Mohamad, 2020). This setting also addresses the complicated relationships between contentment with island life, livelihood evaluation, and a variety of socioeconomic issues. It emphasises that people's life satisfaction is governed by factors like as natural and economic resources, human connections, physical amenities, migratory patterns, communal histories and relationships, and social affliction, rather than the size of the island. This broader perspective emphasises the complexities of community well-being, indicating that alleviating Pangkor Island residents' livelihood difficulties requires a comprehensive plan that extends beyond conventional spatial considerations (Ho, 2019).

More importantly, past research has found an inconsistency between responding to visitor satisfaction and satisfying the requirements of locals (An & Alarcon, 2020; Gonzalez-Rodriguez et al., 2020; Tien et al., 2021). Although the development of tourism is typically prioritised in order to draw tourists and generate revenue, this focus may disregard the desires and well-being of the island's people who live there, who form a community's system. This disparity can lead to conflicts and dissatisfaction amongst locals, especially if their basic needs and concerns are overlooked in favour of accommodating tourist groups (Agius & Chaperon, 2021). Prior research has presented an understanding of the socioeconomic concerns that Pangkor Island communities encounter, that include high rates of poverty, a shortage of decent housing, and financial strains such as rising costs of living, taxes, and a lack of job opportunities (Noh and Yashaiya, 2022; Quraishi, 2020). These issues not only affect people's standard of life, but also keep them from being fully engaged in the island's improvement. Addressing these economic challenges is crucial for enhancing the welfare of locals and encouraging long-term development on Pangkor Island. The community members' perspective emphasises the necessity to prioritise community needs and infrastructure renovations above tourist-centric plans for development (Sarkar, 2020). The local population's top priorities were identified as upgrading basic services, enhancing housing conditions, and managing population-related problems. This viewpoint emphasises the importance of comprehensive and democratic development strategies that empower communities and improve their well-being, laying the groundwork for a more equitable and resilient future for the Pangkor Island livelihood community. Recognising the important difficulties outlined above, this study intended to evaluate the community livelihood resources available on Pangkor Island, Malaysia.

## **3.0 METHODOLOGY**

In order to establish and develop a useful discussion for this descriptive study findings, a preliminary visit was conducted, and questionnaire-based surveys were administered verbally, in person among the local communities to assess perceptions about the status of resource-based activities in October 2022. The data collection involved interacting with fishers, processing, and tourism activities operated by the fishers and local communities. In achieving its objectives, the study was carried out using a quantitative approach through questionnaire survey. The data was collected through random surveys using the probability sampling approach. According to Kumar et al. (2013), random sampling is the fundamental strategy for targeting a limited population, guaranteeing that each segment has an equal and recognisable chance of being included in the sample. The target population is defined with respect to the sampling unit of the study. Thus, the total of five villages selected and according to Manjung Municipal Council (2020) approximately

16,000 population were exposed to the tourism development and activities. While the study intends to examine the view of local communities on their livelihood resources, the total of 64 respondents who are directly exposed to tourism development was successfully collected in different villages on Pangkor Island, namely: (Kampung Masjid, Kampung Sungai Pinang, Kampung Teluk Gedung, Kampung Teluk Dalam and Kampung Teluk Kecil (see Figure 3 and Table 1). As suggested by Roscoe (1975), sample sizes larger than 30 and less than 500 are appropriate for most research, especially in the context of behavioral studies. To ensure the targeted respondent had a better understanding, a tri-language questionnaire was developed, including English, *Bahasa Melayu*, and Mandarin. However, the two most frequently used languages for data collection were *Bahasa Melayu* and Mandarin as most of the respondents were Chinese and followed by Malay. The questionnaire was divided into a demographic section, employment and income patterns, and livelihood assets (financial, social, human, natural, and physical). The variables of each asset were determined according to their definition, literature review, and socio-economic features of the study area which modified from Aazami and Shanazi (2020) and Su et al. (2016). Thus, the questionnaires were adjusted to socio-economic features of the study area through eliminating insignificant variables and adding localised variables. Five-point Likert response scale that ranged from one (strongly disagree) to five (strongly agree) was deployed.



**Figure 3: Tourism development in Pangkor Island**

**Table 1: Summary of tourism site and location of tourism development in Pangkor Island**

Tourism Site	Focus area	5 Main Villages	Remarks
Pantai Teluk Nipah	<ul style="list-style-type: none"> <li>Eco-tourism (coastal tourism)</li> <li>Accommodation</li> </ul>	Kampung Teluk Dalam	C, D, and E
Pantai Teluk Dalam	<ul style="list-style-type: none"> <li>Water sports</li> </ul>		
Pantai Teluk Belanga			
Pantai Pasir Bogak	Duty free		F
Pangkor Town		Kampung Masjid	
Fisheries ventures	Maritime (marine tourism)	Kampung Sungai Pinang (kecil and besar)	B
Masjid Al-Khairiah	Cultural and heritage		
Historical rock		Kampung Teluk Kecil	A



**Source: Researcher findings**

Quantitative data from the survey was analysed using Statistical Package for the Social Sciences (SPSS) analysis, and descriptive analysis was used to generate mean score and standard deviations of all the variables of the study and to identify the perceptions of livelihood resources. The research area, Pangkor, is well-known among the local communities for its beaches like Teluk Nipah, Coral Bay, Pasir Bogak, and Teluk Belanda. It has a total land area of 18km<sup>2</sup> with a population of 25,000, of which Malay and Chinese are the ethnic majority (Manjung Municipal, 2020). Pangkor Island was included in the top nine "sustainable tourism" attractions in the state of Perak (Hengky, 2011) and drawn by its eye-catching nature due to its natural environment (Yip & Mohamad, 2020). The main reason for choosing the location is mainly because tourism is one of the main factors driving the economic improvement and sustainable development of the destination (Manjung Municipal, 2020). It can be assessed through its economic benefits and challenges, including the contribution of tourism to local employment, income, and businesses. In addition, the contextual location is focused on Pangkor Island due to its current status as a duty-free island and its extensive development as an international island after Langkawi (Manjung Municipal Council, 2020). The main purpose of this study is to determine the livelihood resources of the Pangkor Island community in Malaysia. In order to achieve its objective, this study attempted to measure their livelihood resources based on several factors shown in Table 2.

**Table 2: Measurement of Livelihood Resources**

Measurements	Sources	Definition of the measurements	Factors considered for this study
Financial assets	Aazami and Shanazi (2020), Bajwa (2015), DFID (2001), Kimengsi et al.(2019), Masud et al. (2016), Scoones (1998)	Includes economic sources that enable vulnerable households and individual to generate income and make an investment which in turn ensure sustainability of livelihood outcomes.	Current source of income; extra saving and investment; other job opportunities
Social assets	Aazami and Shanazi (2020), Coleman (1988), Diedrich et al. (2019), DFID (2001), Masud et al.(2016), Tao and Wall (2009)	The social resources upon which people draw in pursuit of their livelihood objectives (networks, trust, membership of groups, extended families, clans, etc.)	Management of community; social interaction
Human assets	Aazami and Shanazi (2020), Allison and Horemans (2006), DFID (2001), Krantz (2001), Masud et al.(2016)	A combination of capabilities, skills and knowledge, and material health which enable households and individuals to make livelihoods and attain secure livelihood outcome.	Current skills; knowledge; training support; improvement possible training in tourism development
Physical assets	Aazami and Shanazi (2020), DFID (2001), Samsudin and Kamaruddin (2013), Kimengsi et al.(2019)	The required accessibilities to facilities needed by households or individuals like transportation, good	Road; water supply; electricity supply; waste management; transportation system

Natural assets	Aazami and Shanazi (2020), Carney (1998), DFID (2001), Gandarillas et al. (2016), Guerry et al. (2015)	housing, safe drinking water, and accessibility to medical facilities, market and schools. A collection of natural resources in the physical environment which humans act upon to create livelihoods.	Environments of the islands (coastal and marine eco-system); optimal resources management; traffic flow; preservation of natural resources; fisheries resources
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## 4.0 RESULTS AND DISCUSSION

The following sections discuss the preliminary findings of the research based on socio-demographic profile and reliability analysis:

### 4.1 Socio-Demographic Profile

**Table 3 : Socio-demographic Profile**

Variables	Category	Sample Size=64(n)	Percentage (%)
Gender	Male	37	57.8
	Female	27	42.2
Age	17-25	21	32.9
	26-35	17	26.6
	36-45	5	7.9
	46-55	14	22
	56 and above	7	11.1
Household Number	1-3	21	32.7
	4-6	36	56.2
	7-9	7	11
Race	Malays	24	37.5
	Chinese	28	43.8
	Indians	10	15.6
	Others	2	3.1
Education	Primary	7	10.9
	Secondary	48	75
	Tertiary	8	12.5
	No formal education	1	1.6
Marital Status	Single	30	46.9
	Married	34	53.1
	Divorced	-	
	Others		
Household income	RM0-1000	10	15.6
	RM1001-3000	46	71.8
	RM3001-5000	1	1.6
	RM5001-70000	4	6.3
	RM7001 and above	3	4.7
Job sector	Fisheries	12	18.8
	Services	31	48.4
	Others	21	32.8

Is your current job tourism related?	Yes	46	71.9
	No	18	28.1
Do you have any side income?	Yes	15	23.4
	No	49	76.6
How much do you earn monthly for the side income?	RM0-200	51	79.6
	RM201-400	3	4.7
	RM401-600	4	6.3
	RM601-800	2	3.1
	RM801 and above	4	6.3

Table 3 shows the demographic profile with additional information related to the livelihood of the communities on Pangkor Island. Out of 64 participants in the survey conducted, 57.9% were male and 42.2% were female. The results showed that the age of the participants was mostly between 17-25 years old. The household size largely ranges from 4 to 6 people. However, it should be noted that amongst the participants' household size varies, with some household heads having between one and two wives with a large number of dependents. In terms of race, most were Chinese (43.8%), followed by Malays (37.5%). For education level, mostly the communities were at the secondary level, with 75% and 53.1% being married. A majority of the participants (71.8%) earned an average monthly income of RM1001 to RM3000, and most of them were involved in the service sector, such as transportation, food and beverages, or accommodation, which is also related to the tourism sector. The results revealed that some participants (23.4%) earned another side income from other jobs, and 79.6% agreed that they earned between RM0 to RM200 per month extra.

#### 4.2 Reliability Analysis

Table 4 shows the Cronbach's alpha values for financial, social, natural, human, and physical assets variables to ensure the reliability and validity of the questionnaire. It is a common test can be carried out to measure the internal consistency and verify the variables to fit the research purpose (Taber, 2017). The value between 0.6-0.7 considered acceptable while 0.8 and higher is considered as good (Ursachi et al.,2015)

**Table 4 : Summary of Construct and Reliability Scale Result**

Name of Construct	Number of Items		Coefficient Alpha
	Beginning	Excluded	
Financial Assets	5	0	0.754
Social Assets	5	0	0.676
Natural Assets	5	0	0.706
Human Assets	4	0	0.649
Physical Assets	4	0	0.743

#### 4.3 Perceptions Towards Livelihood Resources

In the second part of the questionnaire, the participants were evaluated concerning their perceptions of livelihood resources. Firstly, they were asked to express their views according to their current living conditions, which also incorporated tourism activities. Based on the feedback given by random participants, most of them are looking forward to better development on the island, either in the context of economic or

socio-development. For developing countries, tourism development is crucial for the sustainable livelihoods of residents, and it is recognized as a tool to increase economic benefits by 2030 through sustainable management of fisheries, aquaculture, and tourism (UN DESA & World Resources Institute, 2019). As it is observed in Table 4, which relates to the local communities' perceptions towards their financial assets, in this study we used several indicators to measure financial assets, as explained before in Table 1. Most of the participants agreed that the highest mean was "My current source of income is stable" (M = 3.71). In Pangkor Island, access to sufficient fish in terms of both quality and quantity is a privilege reserved for local communities, besides some participants believed the tourism development had created some new job opportunities, and the diversified income from this source resulted in the stability of their income.

**Table 4 : Perceptions of Local Communities Towards Financial Assets**

	Means	Std Dev
My current source of income is stable	3.71	1.20
My current income is sufficient to cover my monthly living cost	3.41	1.25
My current income provides me with extra savings	3.25	1.26
I am able to make extra financial investments and planning.	2.58	1.37
There are many job opportunities available on the island.	3.63	1.25

When tourism emerged as an alternative livelihood for some local communities, it created a positive influence on their livelihoods, especially improving their economic stability (Su et al., 2018). However, the results show most participants had an inability to make extra financial investments and plans (M = 2.58). Even though tourism creates a good economic transformation to the destination, somehow, or rather, the ability of the community to manage their capital is weak due to a lack of knowledge, poor or neglected institutional systems (Matiku et al., 2020), and access to education might prevent them from accessing rewards from tourism and breaking out of poverty (Aazami & Shanazi, 2020; Burbano & Meredith, 2021; Su et al., 2016). Therefore, support by the local authorities is crucial to managing and guiding the local communities, and to ensure the effectiveness of the capital, the government should play a significant role in developing the capital to promote tourism development (Fairer-Wessels, 2017; Westoby et al., 2021).

Apart from that, Table 5 shows the descriptive analysis of the local communities' perceptions of their social assets. This asset demonstrated how households connect with other groups in their social setting. From the result, the majority of participants agreed that their social relations were established through tourism development (M = 3.79), which related to their social interaction with other communities on the island. In addition, tourism has multiple social benefits that show it has favourable social effects, such as uplifting traditions and steadily building communities. Besides, through tourism participation, it increases social assets, which stimulates communication and networking activities, making it easier to build new activities based on trust and assistance among neighbourhoods (Ávila-Foucat et al., 2021; Su et al., 2016; Diedrich et al., 2019).

**Table 5: Perceptions of Local Communities Towards Social Assets**

	Means	Std Dev
Establishing local and public culture	3.79	1.02
My culture and lifestyle are not affected by tourism development	3.60	1.14
Increasing commitment to each other	3.18	1.28
The crime rates are increasing due to tourism development.	2.31	1.30
Developing relationship with tourists.	2.95	1.46

However, social participation should be actively organized by the government or local authorities in order for households to participate in collective activities. From this, it will strengthen contact, increase communication, and enhance feelings to promote the establishment of social networks and trust. A study by Xiong et al. (2021) mentioned that social assets or capital, are divided into three dimensions: social network, social participation, and social trust, which influence households' sustainable livelihood ability to out-of-poverty in order to promote the sustainable development of their livelihood. From the study, it is supported that both social network and social participation had a significant positive effect on households' sustainable livelihood ability since they transformed into economic capacity (Wang & Zhu, 2023). Moreover, other studies in Melanesia have confirmed that social factors such as self-organized stakeholder agency, cooperation, and social relationships influence the ability of communities to cope with changes (Lauer et al., 2013; Schwarz et al., 2011).

Meanwhile, Table 6 reported that the majority of participants agreed that natural resources on the island are well preserved and fairly allocated for tourism and livelihood purposes ( $M = 3.67$ ). Even though the destination has been exposed to rapid tourism development for the past few years, the local assets on Pangkor Island are still intact, and fishing remains a livelihood resource available for the local communities. The fisheries sector on Pangkor Island is an important source of income, contributing 12.94 percent to the fisheries sector in Malaysia, and the local livelihoods of the island have been dominated by this activity (Department of Fisheries of Malaysia, 2021).

**Table 6 : Perceptions of Local Communities Towards Natural Assets**

	Means	Std Dev
The overall environment of the island is clean	3.62	1.03
Natural resources on the island are well preserved	3.67	0.94
Natural resources are fairly allocated for tourism and livelihood purposes.	3.67	1.06
The traffic flow is smooth.	3.57	1.29
Noise pollution is low.	3.35	1.25

Besides, it has also contributed widely to foreign exchange, income, and national Gross Domestic Product (GDP) (Menhat et al., 2021) to create job opportunities for the local citizens and provide a source of fishery products and export and import activities. Understanding how the environment benefits communities is also critical, and the concept of the blue economy has increased the value of the world's ecosystem services and natural assets in recent decades (Phelan et al., 2020). The concept demonstrates the essential interactions between the community, local economy, and coastal eco-systems in shaping community-based ecotourism (CBE) for preserving the natural and cultural heritage of the destinations. Therefore, incorporating the blue economy concept into the assets will also consider the effects of human activities on coastal ecosystems and advocate for the preservation of threatened species and ecosystems (Islam et al., 2020).

For human assets (see Table 7), most participants agreed that most of their current knowledge is enough for employment ( $M = 3.90$ ). Besides, tourism development has encouraged the participants to cultivate a myriad of new skills to access new opportunities, such as the development of new homestays, social media marketing, and entrepreneur skills. These skills have provided local communities with an opportunity to generate additional income. Education and skill training play a significant role in shaping the community out of poverty, developing a sustainable economy, and improving labour productivity and wages (Fischer et al., 2021; Lowe & Tejada, 2019; Towner & Davies, 2019). However, participants did not agree much that the government provides opportunities to upgrade their skills ( $M = 2.43$ ). Therefore, to ensure the effectiveness of the capital, the government should play a significant role in developing the capital to promote tourism development (Fairer-Wessels, 2017; Westoby et al., 2021). The government and local authorities should identify a specific training, workshop, or any other related tourism training to enhance their knowledge and skills.

**Table 7 : Perceptions of Local Communities Towards Human Assets**

	Means	Std Dev
My current skills are enough for employment.	3.71	1.01
My current knowledge is enough for employment	3.90	0.88
Government provides opportunities to upgrade my skills.	2.43	1.27
Tourism development improve my skills and knowledge.	3.29	1.20

Moreover, physical capital (see Table 8), which refers to the infrastructure that assists rural households in maintaining their livelihoods, is frequently hampered by climate change and natural disasters, especially in coastal and marine destinations. From the result (Table 7), both water and electricity supply are in good condition, and through community tourism activities, physical capital will be improved and sustained and easily accessed individually without cooperation from others (Becker, 2017; Masud et al., 2016). The fragility of such infrastructure jeopardises the stability and accessibility of essential amenities such as water and power supply, which are critical to rural areas (Mvile & Bishoge, 2024). Despite these limitations, the extract demonstrates that community tourism initiatives might play an important role in increasing and maintaining physical capital. Engaging in these programmes allows rural communities to build facilities and ensure its accessibility, mitigating the harmful effects of climate change and disasters. Besides, by engaging in tourism-related activities, rural families may proactively contribute to the development and maintenance of infrastructure essential to their livelihoods (Ma et al., 2021). This technique promotes self-reliance while also reducing dependency on external finance for infrastructure projects. Rural communities may employ community tourism to pool their resources and expertise in order to confront the challenges provided by climate change and natural disasters, ultimately encouraging sustainable development and endurance in the midst of environmental unpredictability.

**Table 8 : Perceptions of Local Communities Towards Physical Assets**

	Means	Std Dev
The road conditions are well maintained	3.54	1.06
The water supply is clean and sufficient	4.15	0.89
The electricity supply is stable	4.01	0.95
The waste and sewage systems are well managed.	3.43	1.09

## 5.0 CONCLUSION AND LIMITATION

The purpose of this pilot study is to analyse local populations' opinions of their livelihood assets, such as financial, social, natural, human, and physical capital, on Pangkor Island, Malaysia. One of the study's key contributions is to fill a research gap in the context of sustainable tourism development and the sustainable livelihoods strategy. It aims to better understand how access to information, education, training, and other resources affects community survival. The growth of tourism on the island has improved social and cultural links between local communities. This has resulted in improved communication, information sharing, and cultural exchanges, which have had a good influence on both social and economic aspects, encouraging collaboration even in traditional areas such as fishing. The involvement and encouragement of government and local authorities, as well as strong institutional structures, are cited as vital components in influencing community sustainability, particularly in terms of social capital. Furthermore, government assistance has extended to boosting physical assets by maintaining infrastructure and improving domestic waste management systems, illustrating the multidimensional role of governance in sustainable development. The

initial findings, can be useful to the policymakers, industry practitioners, and other stakeholders in planning and implementing the holistic community sustainability through the livelihood resources.

However, this study recognises several limitations, particularly the sample size, which limits the researchers from drawing broad generalisations. Despite these limitations, the survey results provide useful insights that may be used to guide community planning and policy decisions, emphasising the necessity of including the 'people issue' into development initiatives. While the pilot research met its major goals, it also identified areas for development, notably in questionnaire design, indicating the need for modifications prior to performing a full-scale survey. Additionally, the quantitative methodology utilised in this study lays the groundwork for future studies that will yield broader results. Future study might expand on the knowledge garnered from this initial study by enhancing methodology and broadening the research scopes, furthering our comprehension of sustainable tourism and livelihood dynamics on Pangkor Island and in similar settings. In final analysis, this pilot research sheds light on the viewpoints and livelihood patterns of Pangkor Island communities in terms of sustainable growth of tourism. It highlights the many implications of tourism expansion, highlighting both the positive aspects, such as enhanced social and economic relations, and the critical role of government in supporting community sustainability. Considering its limitations, the study establishes the framework for future research, highlighting the importance of continuous improvement of methods and involving community perspectives into development processes for planning and making decisions.

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