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Assessing tourism potential for rural tourism development: Promoting SDGs and economic opportunities to the B40 community—A mixed method approach

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Abstract: This research explores the untapped tourism potential of three tranquil villages in Bukit Tengah, Penang, Malaysia. Its overarching strategy is to foster sustainability and economic growth, particularly in the B40 communities of the area. Employing mixed-methods research, the study evaluates tourism products through systematic weighted scoring, questionnaire surveys, and interviews with key informants and tourism stakeholders. The sustainable development theory is used in this study as a conceptual framework for rural tourism development, emphasising the integration of economic, social, and environmental dimensions to ensure long-term viability and benefits for local communities. The results indicate the latent potential for rural tourism development in the three villages, contingent upon garnering local support and collaborating with tourism stakeholders. The study highlights the capacity of rural tourism promotion to generate additional income for the local population, thus promoting both environmental sustainability and community well-being. These findings align with the state government's goal of achieving balanced tourism growth between the island and Seberang Prai regions. Moreover, this research also aligns with Sustainable Development Goals (SDGs) 8 and 11, recognising the role of tourism in achieving goals such as poverty reduction, environmental sustainability, and community well-being, all of which are relevant to rural tourism development.

Keywords: rural tourism; community participations; economic opportunities; Sustainable Development Goals

1. Introduction

Penang, a state located in the northern part of Malaysia, was ranked second out of the 17 best destinations to travel to [1]. Penang State is composed of two regions: Penang Island and Seberang Perai. However, the most rapid development and urbanisation are concentrated on Penang Island. The then-chief operating officer of Think City, Dr. Neil Khor, mentioned that the solution to disperse the crowd is to divert the gentrification to Butterworth. As presented in the Penang Tourism Master Plan 2021–2030 [1], PETACE chairman YB Yeoh Soon Hin stated the goal of creating a balanced tourism development in Penang Island and the Seberang Perai area. Not to mention, the Tourism Master Plan emphasised civil participation in tourism development planning and implementation to ensure success and sustainability. The locals should be able to acquire managerial skills in addition to attaining economic benefits. This is also in line with the Penang State Structure Plan 2030, which emphasises the importance of empowering the locals to enhance civic participation [1].

In this context, it is justified that the author's research topic is indeed in accordance with the state government's plans and objectives. It is believed that the stability and improvements obtained by the B40 community will help the nation achieve new heights. Among the highlighted subjects in the SPV 2030 statement is the social well-being of the B40 and underprivileged groups [2]. This study also aligns with the target of Sustainable Development Goal (SDG) 8: decent work and economic growth, which specifically focuses on "By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products." It also complements SDG 11: sustainable cities and communities, which emphasises the importance of strengthening efforts to protect and safeguard the world's cultural and natural heritage, including through promoting sustainable tourism.

Despite the evident potential for rural tourism development in Seberang Prai, Penang, there is a lack of comprehensive understanding regarding the barriers impeding progress and the effective strategies required for sustainable development. This research seeks to identify, analyse, and propose solutions to the obstacles hindering the successful establishment of rural tourism, considering economic, social, environmental, and policy dimensions. By doing so, the study aims to contribute valuable insights to inform local authorities, communities, and stakeholders, ultimately fostering the sustainable growth of rural tourism in Seberang Prai, especially in Bukit Tengah. Other than assessing the tourism potential in the study area, the study also aims to promote sustainability and economic opportunities in the B40 community. The B40 community in Malaysia is a lower-income group with household income below RM 4850 (\$1115.5) per month [3]. It is also significant to study the community's interests before developing a tourism destination to avoid a lack of participation. The community's perception and willingness to participate in future development may determine the success of the planning. Their support and involvement in tourism development will lead to sustainable tourism development [4].

2. Literature reviews

2.1. Rural tourism development

Recognised for its potential to stimulate local economic growth and social change, rural tourism is a type of tourism activity in which the visitor's experience is related to a wide range of products generally linked to nature-based activities, agriculture, rural lifestyle and culture, angling, and sightseeing [4]. Malaysia offers a rich tapestry of rural experiences, and developing rural tourism can have numerous benefits [5]. Rural tourism is gaining popularity internationally as a tool to elevate the economic development of a country [6]. In this case, tourism development will take place in rural areas inhabited by local communities [7,8]. Among the benefits of promoting the growth of the tourism industry in a country is elevating the living standards of its society and economy with regard to the increase in foreign exchange earnings.

Nonetheless, this goal is achievable through the sustainable use of tourism resources, which involves community participation. The local community can benefit from the tourism development taking place in their habitation [6,9]. Park and Yoon [10] highlighted the way to ensure the success of sustainable rural tourism development falls on the key stakeholders, who are the local residents. As the locals

are the most familiar with the surroundings and environment of the region, their viewpoint should be regarded as the utmost priority [11,12]. The study of Masud et al. [13] also dictates the importance of knowledge in ensuring effective community involvement in the rural tourism development process. They can promote and preserve their culture, secure economic gains, and protect their destination environment and resources for future generations. The motivation drives the locals to take up the responsibility and become the custodians of the natural resources of the area. On the contrary, the community perspective on rural tourism has been a major determinant in the success of rural tourism [14,15]. By incorporating the community's interests into the development process, developers and policymakers can increase their tolerance for tourism [16]. By looking into these statements, this research aims to assess the potential tourism development in Bukit Tengah, specifically at Kampung Kuala Juru, Kampung Sekolah, and Kampung Sungai Semilang. These places have the potential to become tourist attractions due to the availability of natural assets such as mangrove swamps, bird species, traditional culture and heritage, unique gastronomy, and Sungai Perai itself.

The development of rural tourism can provide many unique events and activities that people who live in urban areas are interested in, such as agricultural festivals, crafts, historical buildings, natural preservation, nostalgia, cuisine, and opportunities for family togetherness and relaxation [17,18]. Developing the study areas into rural tourism sustainably aligns with the aspirations of the state development plan. Sustainable tourism development concerns current and future economic, social, and environmental impacts: making optimal use of environmental resources, respecting the sociocultural authenticity of host communities, contributing to intercultural understanding and tolerance, and fair distributing socioeconomic benefits to all stakeholders [19–23]. This is supported by Gamidullaeva et al. [24], who define sustainable tourism as tourism that considers all present and future economic, social, and environmental implications while meeting the requirements of consumers, tourism-related businesses, territorial surroundings, and host communities.

Rural tourism development in support of domestic tourism growth post COVID-19

Developing domestic tourism, particularly in rural areas, is crucial for the post-COVID-19 recovery of Penang. This approach not only stimulates economic growth but also promotes cultural preservation, community empowerment, and sustainable tourism practices, contributing to the overall well-being and resilience of the region. The COVID-19 pandemic highlighted the vulnerability of regions overly reliant on international tourism. Focusing on domestic tourism allows Penang to create a more resilient tourism sector that is less susceptible to global crises and external shocks. Relying on domestic tourism can make the tourism sector more resilient to global crises, such as pandemics or geopolitical uncertainties. Diversifying the source of tourists reduces the impact of external factors that may affect international travel. This concept is supported by research such as that of Koens et al. [25], highlighting the importance of risk diversification in tourism.

Besides, domestic tourism provides a foundation for destination resilience and adaptation to changing circumstances. Insights from research on crisis management

and tourism adaptation, as discussed by Faulkner and Russell [26], can inform strategies for post-pandemic recovery. Other than that, domestic tourism may be perceived as a safer option post-pandemic due to reduced travel uncertainties and health concerns associated with international travel. This idea is supported by insights from the World Tourism Organization (UNWTO) and studies like Sigala [27], which address the impact of the COVID-19 pandemic on tourism. Rural tourism can also empower local communities by involving them in tourism-related activities. Community participation fosters a sense of ownership and ensures that the benefits of tourism are distributed equitably. Butler and Boyd [28] discussed the importance of community involvement in sustainable tourism development.

2.2. Sustainable development theory for rural tourism

The concept of sustainable development theory in the context of rural tourism encompasses a strategic and holistic approach to ensure the long-term well-being of local communities, the preservation of natural resources, and the enhancement of visitor experiences, as shown in **Figure 1**. In recent years, there has been a growing recognition of the need for sustainable practices within the tourism industry, particularly in rural settings where the delicate balance between economic development and environmental and social preservation is crucial. By examining this theoretical framework, this research aims to shed light on how sustainable development theory can guide and inform the planning, implementation, and management of rural tourism initiatives, fostering resilience and harmony between the community, environment, and tourism activities.

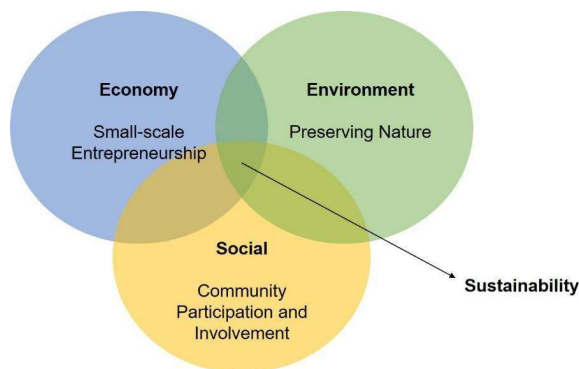


Figure 1. Sustainable rural tourism development framework.

On the other hand, from the Sustainable Development Goal (SDG) 2030, Goal 8 emphasises, quote, “Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all” [29]. The developers should include the planning of community participation in tourism development. They can train, guide, and hire locals to run relevant businesses, such as tourism activities, accommodations, and food and beverage outlets. This will create a sense of ownership and leadership among the locals. They can be independent and sustain themselves in a consistent manner instead of relying on financial aid from government organizations. The research also complements Goal 11, which focuses on creating satisfactory socio-economic and environmental conditions in rural areas through the enhancement of regional development planning. Not to mention, Goal 11 mentioned the need for

inclusivity and a sustainable form of urbanisation, which are clearly needed in Penang State. The locals in the study area, who are mostly B40 household groups, need to be helped or elevated. With the improvement of B40 groups in Malaysia, the economy will be boosted and improved immensely. The hope for the assessment of tourism potential in the study areas is to produce a sustainable community. A sustainable community is different everywhere, as it depends on the local and destination. Creating a sustainable community means that the locals meet their basic standard of living and necessities while preserving and conserving the natural environment surrounding them. Sustainable communities and sustainable tourism can be achieved simultaneously [30].

The statements in the paragraphs before support the findings of research that has been carried out in Perak Tengah District in 2022. The research exhibits that tourism development in rural areas boosts the local economy, especially by adding value to the local products created from the local resources. The enticing development leading to the rejuvenation of rural areas can prevent the local younger generation from resettling in cities [31]. The opportunity to offer unique experiences that showcase the fundamental components of the destination sets it apart from competitors in the same industry. It is important to realise that ease of accessibility is vital for the success of rural tourism development [31]. Nonetheless, the transportation infrastructures enabling access to the tourist destinations can boost sales for local enterprises with the high traffic from tourist arrivals. Therefore, established tourism infrastructures are essential for the marketing and promotion of a destination during the process of tourism development [23,31].

2.3. Participation of the local community in promoting sustainability and economic opportunities in the B40

The introduction of rural tourism development in the study area is believed to improve the locals' income by broadening their employment prospects. Tourism development catalyses an increment in household incomes within the rural community, thereby contributing to the mitigation of poverty in that region [12]. As an immediate impact of economic alleviation, the locals will gain the ability to enhance the overall quality of their livelihoods [32]. The locals are provided with an opportunity to better their lives, and in turn, rural-to-urban migration can be reduced. Notably, the locals, especially the younger generation, will perceive viable and promising future prospects within the native villages [33]. Consequently, the significant contributions of tourism development aid in the achievement of socioeconomic stability within rural communities [34].

The Spanish Institute, CaixaBank Research, retained data based on card payments and showed growth in rural tourism expenditure from 10.9% in 2019 to 11.9% in 2023. The growth displays a shift in tourist preferences, favouring rural tourism over urban and coastal ones. Interestingly, the trend was not only favoured during the post-Covid era but has also been continuously embraced by tourists up until now. In short, the shift suggests a sustained inclination towards nature-based tourism [35]. Tourists expressing a robust interest in rural tourism often communicate with the local community to learn about their lifestyle and immerse themselves in their customary

activities [34]. They are increasingly opting for more sustainable destination choices to avoid overcrowded tourist spots and seek authentic experiences while supporting local produce. The shift could be attributed to a desire for escapism from cramped hotspots or the financial crisis of the post-Covid era [36].

Aligned with the 10th Sustainable Development Goal: Reduced Inequalities, tourism serves a pivotal role in narrowing the economic gap between rural and urban areas [37,38]. Even though tourism cannot be the sole driver of local economic alleviation, it will be a stimulus alongside other extensions of the region's economy. In the case of complementary sourcing industries, they are construction, agriculture, fishing, food processing, local gastronomy, transportation, and handicrafts [34,36,39]. Job opportunities generated by the tourism industry in rural areas benefit individuals, such as women and youth, providing them with valuable employment with little to no training [39].

3. Methodology

3.1. Research design and data collection

This research employed a mixed-methods approach, where this study combines both quantitative and qualitative methods. In this study, a simple weighted score method has been used to assess the potential of tourism resources in the study area. This method is part of a qualitative research tool. Besides, the explanatory sequential technique is adopted as presented in **Figure 2**, where the quantitative data collected will be further elaborated by using qualitative data for an in-depth understanding of the topic [40].

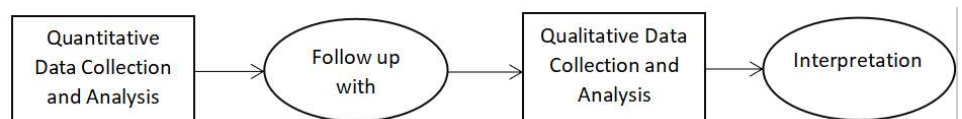


Figure 2. Mixed method approach sequence [40].

The tourism sites located in Bukit Tengah, particularly in Kampung Kuala Juru, Kampung Sekolah, and Kampung Sungai Semilang, were assessed using the simple weighted score method. The weighted score method is one of the traditional methods for assessing the potential of tourism sites. Assessing the potential of tourism resources before investigating local interests allows for a well-informed, strategic, and sustainable approach to tourism development. It helps in maximising benefits, minimising risks, and fostering community involvement in the process. On the other hand, to identify the community's willingness to engage in tourism development, 100 quantitative questionnaire surveys were distributed to the local community in the study area. On top of that, an interview session was carried out to gather in-depth information on the locals' interest in participating in tourism development as well as to understand the hindrances to tourism development in the study area. Interviews were held with the key tourism players in the study area to gain more insights and elaboration from the questionnaires answered by the locals. The selected interviewees are the state assemblyman for Bukit Tengah, the district councilor, village representatives, local entrepreneurs, and the community, who are knowledgeable and eligible to represent

the local community in providing opinions.

3.2. Instrument

The dimensions and indicators for assessing the potential of tourism resources were developed based on selected literature reviews from Nasa and Hassan [41] and validated by academicians. Three instruments have been used in this research. The assessment form has been used to assess the potential of tourism resources and the indicators and criteria for assessment of the resources' potential. It was developed primarily based on related literature reviews from other similar studies and has been validated by academics and practitioners. The weighted score (W) in the formula is validated by academics, while the rating score (R) is examined in the field. The result of the assessment enables a better understanding of the status of the resources for the local authorities or investors in the future. **Table 1** shows the indicators that have been used to assess the potential of tourism resources in this research.

Table 1. Indicators for assessment of tourism resources potential [34].

Aspects	Dimensions	Indicators	Weighting score
1) Cultural site	Cultural value	1) The uniqueness of the way of life, wisdom, and knowledge	3
		2) Continuation of traditional cultures	3
		3) Cultural beauty	3
		4) Continuation of the way of life, wisdom, and knowledge	2
		5) A searchable historical culture	2
		6) Local commitment	2
		7) Strengthened to maintain cultural identity	3
		8) Cultural conservation groups network	2
	Physical potential and activity	9) Accessibility: Ease of access	3
		10) Accessibility: Access route signs	3
		11) Safety and security: The frequency of the dangers of natural disasters in the past year	2
		12) Safety and security: The frequency of the dangers of external factors such as crime, epidemics, etc.	2
		13) Diversity of tourism activities	3
2) Natural site	Natural value	1) Attractive and unique elements	3
		2) Richness of vegetation and naturalness of the ecosystem	3
		3) Opportunity for wildlife sightings	2
		4) Landscape quality and aesthetics	2
		5) Appropriateness of tourism activities related to the site characteristics and resources	2
		6) Diversity of tourism activities	3
		7) Micro-climate condition	1
		8) Accessibility	3
		9) Self-reliance	2
		10) Opportunity for the challenging and exciting experiences	2

Table 1. (Continued).

Aspects	Dimensions	Indicators	Weighting score
3) Gastronomy	Attractiveness	1) Attractive and uniqueness elements	2
		2) Taste of the food	3
		3) Quality of food	3
		4) Price range	2
		5) Using local ingredients	1
		6) Menu (picture, price, language, presentation)	3
		7) Presentation of food	2
		8) Availability of toilet, signage	3
	Evaluation of customer service and facilities	9) Cleanliness of the premise	3
		10) Good customer service and hospitality	3
		11) Provide parking area	2

The second instrument used in this research is the questionnaire survey. The questionnaire survey is designed with a five-point Likert scale for the questions investigating the motivation and willingness of the community to participate in tourism development. The Likert scale ranges from 1 (strongly disagree) to 5 (strongly agree), and 3 is a neutral point. The five-point Likert scale is deemed to be the most suitable for this study, as it is highlighted by Chyung et al. [42] that it achieves the shortest reaction time from the respondents. Not to mention, this scale minimises the respondents' tendency toward bias. These surveys were distributed to the respondents using Google Forms. Using Google Forms for surveys in this study offers advantages in terms of accessibility, cost-effectiveness, user-friendliness, real-time data collection, customization, and data analysis. These benefits contribute to the effectiveness of the survey process and the quality of the collected data.

The last instrument used in this research is the interview question. The researcher conducted interview sessions among the chosen samples that could provide valuable information to the study by understanding their opinions or experiences. The language used in the interview is Malay, as 99% of the locals in Kuala Juru, Kampung Sekolah, and Kampung Sungai Semilang are Malays.

3.3. Data analysis

In evaluating the potential tourism resources, the simple weighting score method was employed by using the indicators for assessment of tourism resource potential in **Table 1**. The calculation of the formula shown in Equation (1) and the tourism resources' potential level can be calculated from the formula shown in Equation (2) [41].

$$TRP = \Sigma(W_i \times R_i) / \Sigma W_i \quad (1)$$

while TRP = Tourism resource potential; W_{1-i} = Weighted score of the indicator from 1 to i ; R_{1-i} = Rated score of the indicator from 1 to i .

$$\begin{aligned} \text{The width of the class interval} &= \frac{\text{Max score} - \text{Min score}}{\text{Number of intervals}} \\ &= \frac{3 - 1}{3} \end{aligned} \quad (2)$$

2.34 – 3.00 = high potential

1.67 – 2.33 = moderate potential

1.00 – 1.66 = low potential

On the other hand, to identify the community's demographic background and their willingness to engage in tourism development, descriptive analysis was used, where the aim was to summarise the sample. To describe the data set, measures of central tendency and measures of variability or dispersion were used. Measures of central tendency include the mean, median, and mode. On the other hand, the qualitative data collected underwent transcription without the author's judgements and thoughts. Codes are used to categorise key phrases under similar themes. Thus, the data collected through the narratives of the interviewees is able to provide a more detailed description of the studied problems.

4. Results

4.1. Tourism resource potential

The examination of the weighted score method table (**Table 2**) leads to the conclusion that the potential tourism sites exhibit concentration within three villages of Bukit Tengah, namely Kampung Kuala Juru (KKJ), Kampung Sungai Semilang (KSS), and Kampung Sekolah Juru (KSJ). In the aspect of cultural products, Masjid Bagan Nyiur, Masjid Jamek Kampung Sekolah Juru, and Masjid Jamek Kuala Juru emerge with the highest weighted scores of 2.28, indicating a moderate potential level. Additionally, Bukit Juru attains the highest weighted score of 2.52 among the natural sites, signifying a high level of potential. Lastly, the gastronomic aspect is notably represented by Jamu Selera Restaurant with a weighted score of 2.41 has the highest potential.

As per information obtained from the Michelin website, the distance between Bukit Tengah and the city centre of George Town is approximately 23 km, with a driving route that takes around 21 min [43]. The relative proximity of these locations to the city centre accentuates Bukit Tengah as an appealing alternative for tourists seeking a serene natural environment aside from the bustling city. This journey to an urban area provides an opportunity for tourists to immerse themselves in an authentic local lifestyle experience.

Table 2. The results of the tourism resource potential in Kampung Kuala Juru, Kampung Sungai Semilang and Kampung Sekolah Juru.

Aspects	Potential tourism sites	Location	Weighted score	Level of potential
(A) Cultural products	1) Traditional Stilted House	KSS	1.4375	Low
	2) Kuala Juru Jetty	KKJ	2.3750	Moderate
	3) Masjid Bagan Nyiur	KKJ	2.2813	Moderate
	4) Masjid Jamek Kampung Sekolah Juru	KSJ	2.2813	Moderate
	5) Masjid Jamek Kuala Juru	KKJ	2.2813	Moderate
	6) Mak Cik Su Bahulu	KKJ	1.4688	Low

Table 2. (Continued).

Aspects	Potential tourism sites	Location	Weighted score	Level of potential
	7) Pn. Rashilah Belacan	KKJ	1.5625	Low
	8) Dried Fish	KSS	2.0313	Moderate
	9) Cockles	KKJ	2.2188	Moderate
	10) Symbiosis Aquaculture	KSS	2.0000	Moderate
(B) Natural sites	1) Sawah Padi	KKJ	2.0435	Moderate
	2) Sungai Juru	KKJ	1.6957	Moderate
	3) Bukit Juru	KKJ	2.5217	High
	4) Sungai Semilang	KSS	1.5652	Low
	5) Animal Farm	KSS	1.8696	Moderate
	6) Sungai Semilang Mangroves	KSS	1.9130	Moderate
(C) Gastronomy	1) Jamu Selera Restaurant	KKJ	2.4074	High
	2) Kedai Makan Zulaila	KKJ	2.1481	Moderate
	3) Warung Pak Su	KKJ	1.7407	Moderate
	4) Roti Canai Sungai Semilang Juru	KSS	2.0370	Moderate
	5) Along's Kitchen: Everyday Nasi Kenduri	KSJ	2.0741	Moderate

Note: Kampung Kuala Juru (KKJ), Kampung Sungai Semilang (KSS), and Kampung Sekolah Juru (KSJ).

The findings from the study reveal that there are a few factors contributing to the potential of rural tourism development in Bukit Tengah, such as (i) Natural attractions: Bukit Tengah is blessed with lush green landscapes, rolling hills, and scenic views, making it an ideal destination for nature lovers. The area can offer activities such as hiking trails, nature walks, bird watching, and eco-tours. Preserving and promoting the natural beauty of the region will be key to attracting tourists. (ii) Cultural heritage: Bukit Tengah has a rich cultural heritage that can be showcased to tourists. The local communities have their own traditions, arts, crafts, and culinary specialties that can be shared through cultural events, workshops, and guided tours. By preserving and promoting their cultural identity, the local communities can actively participate in tourism development and benefit economically. (iii) Agrotourism: The region's fertile lands provide opportunities for agrotourism. Visitors can engage in activities such as fruit picking, vegetable farming, or learning traditional farming techniques. Establishing farms, orchards, and agricultural cooperatives that allow tourists to participate in these activities can create immersive experiences and generate income for the local community. (iv) Community-based tourism: Engaging the local community in tourism initiatives is essential for sustainable development. Community-based tourism projects can be established to involve residents in guiding tours, hosting visitors in homestays, or showcasing local arts and crafts. This approach not only benefits the community economically but also promotes cultural exchange and understanding. (v) Proximity to urban centers: Bukit Tengah's strategic location near urban centers like George Town and Butterworth provides convenient access for tourists. It can attract day-trippers, weekend visitors, and even tourists seeking a rural escape while staying within reach of urban amenities. Good transportation links,

signage, and promotional efforts can encourage tourists to explore the area.

4.2. Community's demographic background

Table 3 reveals a distribution of 45 male respondents and 55 female respondents out of the total 100 participants. The majority falls between the age range of 45 and 54, and they are all of the Malay ethnicity. In terms of occupational distribution, a predominant portion of the respondents are either unemployed or engage in employment within the factory industry. Aside from that, fishing constitutes a significant segment of the local population's livelihood. When categorising respondents according to the income classification by the Malaysian household income structure, there are three primary groups. These groups are identified as B40, representing the lowest income group; M40, denoting the average income segment; and T20, signifying the highest income group. It is noteworthy that each of these main groups further divides into more specific subgroups. The income range varies from B1 (less than RM 2499) to B4 (RM 3970–RM 4849) [44].

Remarkably, a substantial 81% of the respondents from the three villages fall within the B1 income range, implying they are within the poverty level. The median income for the B1 group is reported at RM 1929 [45]. In parallel, studying the Ngargoyoso sub-district in Indonesia through qualitative research revealed a noteworthy 33% increment in the local economy after they participated in the tourism industry [46]. Given the estimation derived from the Indonesian case study, it is anticipated that the respondents may achieve a monthly income of RM 2565.57. This upward adjustment would elevate them to the B2 category, falling within the range of RM 2500 to RM 3169 [45].

Table 3. Community's demography background.

Demographic profile		Frequency	Percent (%)	Mode class
Gender	Male	45	45	Female
	Female	55	55	
Age group	18–24 years old	19	19	45–54 years old
	25–34 years old	20	20	
	35–44 years old	20	20	
	45–54 years old	22	22	
	55–64 years old	15	15	
	5 years old and above	4	4	
Race	Malay	100	100	Malay
	Student	12	12	Factory worker and unemployed
Occupation	Fisherman	20	20	
	Factory Worker	22	22	
	Civil Servant	7	7	
	Self-employed	7	7	
	Unemployed	22	22	
	Retired	7	7	
	Others	3	3	
Average monthly income	Less than RM 2500	81	81	Less than RM 2500
	RM 2500–RM 3169	4	4	
	RM 3170–RM 3696	2	2	
	RM 3970–RM 4849	2	2	
	Others	11	11	

4.3. Community's willingness to participate in tourism development

Table 4 outlines the responses from the survey regarding the willingness of individuals to participate in tourism development in their community. A majority of respondents express a positive willingness to participate in tourism development. The most common response across all statements is “agree” (53%), followed closely by “strongly agree” (18%). This suggests a generally positive attitude towards tourism development. The second and third statements specifically address the willingness to contribute to tourism decision-making and provide assistance or resources. The high percentages of “agree” and “strongly agree” responses (53% and 18%, respectively) indicate a positive inclination towards active involvement in decision-making processes and resource provision. Statements regarding initiating contact with tourism officials, meeting with officials to discuss tourism issues, and willingness to do what is asked by the tourism office or officials indicate a community that is not only willing to participate but also takes initiative. In short, the combined percentages of “agree” and “strongly agree” range from 65% to 94% in this survey, suggesting a proactive community approach and that they are willing to participate in tourism development.

Table 4. Community's willingness to participate in tourism development.

Community's willingness to participate in tourism development		Frequency	Percent	Mode class
I am willing to participate in tourism development in my community	Strongly disagree	4	4.0	Agree
	Disagree	5	5.0	
	Neutral	20	20.0	
	Agree	53	53.0	
	Strongly agree	18	18.0	
I am willing to contribute to tourism decision-making in my community.	Strongly disagree	4	4.0	Agree
	Disagree	5	5.0	
	Neutral	20	20.0	
	Agree	53	53.0	
	Strongly agree	18	18.0	
I will provide assistance/sources for tourism development.	Strongly disagree	5	5.0	Agree
	Disagree	4	4.0	
	Neutral	17	17.0	
	Agree	53	53.0	
	Strongly agree	21	21.0	
I will initiate contact with tourism officials whenever necessary.	Strongly disagree	5	5.0	Agree
	Disagree	5	5.0	
	Neutral	26	26.0	
	Agree	45	45.0	
	Strongly agree	19	19.0	
I will meet with officials to discuss tourism issues.	Strongly disagree	5	5	Agree
	Disagree	6	6	
	Neutral	21	21	
	Agree	48	48	
	Strongly agree	20	20	

Table 4. (Continued).

Community's willingness to participate in tourism development		Frequency	Percent	Mode class
I will do what is asked by the tourism office/officials for tourism development in my community	Strongly disagree	4	4	Agree
	Disagree	2	2	
	Neutral	19	19	
	Agree	50	50	
	Strongly agree	25	25	

4.4. Stakeholders' perspective on rural tourism

The stakeholders and key informants (Table 5) interviewed for the study on rural tourism development in Bukit Tengah provided insights into potential areas for tourism development and emphasised the importance of community participation. They identified potential rural tourism development areas such as eco-tourism in Kuala Juru, focusing on river activities, bird-watching, mangrove forests, and hiking up to Juru Hill. Stakeholders stressed the significance of community involvement in tourism planning, stating that locals can serve as the best tour guides, preserving the area's uniqueness and enhancing its promotion. The involvement of the community is seen as crucial in preparing them for interactions with tourists and promoting local tourism products.

Table 5. Selected stakeholders and key informants of the research.

Respondents	Position/identification
Stakeholders	State Assemblyman
	MBSP Councilor
	Village Development and Security Committee—Chairman of Kampung Sungai Semilang
	Village Development and Security Committee—Chairman of Kampung Sekolah
Key Informants	Village Development and Security Committee—Secretary of Kampung Kuala Juru
	Village Development and Security Committee—Committee Member of Kampung Kuala Juru
	Prawn Paste Entrepreneur
	Bahulu Entrepreneur
	Fishmonger

However, challenges exist in the current perception of the local community. Key informants have expressed concerns about immediate livelihood overshadowing the long-term benefits of tourism development. The study revealed obstacles such as pollution in Sungai Juru, the main river, and the need for upgrades in infrastructure. Additionally, the reluctance of the local community to open their areas for development poses a challenge. To address these issues and promote the study area as a tourist destination, stakeholders suggested restarting a tourism committee involving government agencies, stakeholders, village community management councils, and academicians. They also proposed a project called the “Eye of Juru” to attract visitors to Kuala Juru. Moreover, the stakeholders recommended comprehensive planning, proper project management, and smaller, manageable steps to support local businesses

through social media promotion. In summary, the stakeholders recognise the tourism potential in Bukit Tengah, emphasising the need for community engagement, addressing environmental concerns, and implementing strategic planning to ensure sustainable tourism development.

5. Discussion and conclusion

5.1. Theoretical implications

The study contributes to the theoretical framework of sustainable rural tourism development by demonstrating how rural tourism can be a viable strategy for fostering economic opportunities in the B40 communities while maintaining environmental and social sustainability. Besides, theoretical advancements can be made in the assessment of potential tourism products through systematic scoring and the emphasis on local support through interviews, which could align with the principles of sustainable tourism. On top of that, research in rural tourism development may contribute to the development and refinement of community-based tourism theories. Understanding how local communities engage with and benefit from tourism can enhance existing theoretical frameworks related to community empowerment, participation, and sustainable development [13,47].

5.2. Practical and social implications

Rural tourism development in Kampung Kuala Juru, Kampung Sungai Semilang, and Kampung Sekolah Juru, which is located in Bukit Tengah, Seberang Prai, Penang, holds promise as a strategic avenue for economic upliftment of the B40 communities, ensuring simultaneous commitment to environmental and social sustainability. Key strategies include active community involvement and empowerment through training programs, enabling locals to contribute as skilled tour guides, artisans, and service providers to ensure the development of rural tourism [48]. The emphasis on the preservation of local culture and heritage in tourism activities aims to maintain the community's identity by showcasing traditions, arts, crafts, and culinary experiences for visitors. To ensure the success of the proposed rural tourism development, effective marketing strategies are needed. Leveraging digital platforms for marketing and promotion can enhance the visibility of the proposed rural tourism products in the study area and enable the destination to connect with a diverse audience, driving interest and visitation. Research by Xiang et al. [49] explores the role of digital platforms in tourism marketing and destination promotion.

Environmental sustainability is prioritised through eco-friendly tourism practices, encompassing responsible waste management and the promotion of sustainable activities like bird-watching and nature walks. Infrastructure development, essential for a potential tourist influx, is approached thoughtfully to prevent negative impacts on the environment and community life [50]. Diversification of economic activities beyond tourism, such as small-scale agriculture and handicrafts, ensures a robust and varied income for the community [51,52].

Support for B40 entrepreneurs includes initiatives like micro-financing, training, and market linkages, extending to marketing their products and services to tourists.

Balancing tourism growth involves careful planning, monitoring, and implementing measures [53] like visitor quotas and promoting off-peak tourism to mitigate negative environmental and social impacts. Incorporating educational and cultural experiences attracts responsible travelers, fostering mutual understanding between tourists and the local community.

Lastly, collaboration among government, local authorities, NGOs, and the private sector is deemed crucial for a holistic and successful approach to rural tourism development, aiming for long-term benefits for the community and the broader tourism industry. Government support and initiatives are crucial for the development of rural tourism. Policies promoting rural tourism can be influenced by studies such as those by Jamal and Robinson [54], which highlight the role of government in shaping tourism development.

5.3. Limitations and suggestions for future research

While the study offers valuable insights into leveraging rural tourism development for economic well-being and sustainability in B40 communities, there are several potential challenges that require attention in developing rural tourism in the study area. These challenges include infrastructural constraints and the motivation of the locals. Notably, the main entrance to access the study area is under development; there are concerns regarding cleanliness and a lack of tourism facilities.

On top of that, there are some limitations that underscore the need for caution in generalising findings and emphasise areas for improvement in future research endeavours. Those limitations include generalisability, where the findings may be specific to the context of Bukit Tengah and may not be fully generalizable to other rural areas or communities with different socio-economic, cultural, and environmental characteristics. Secondly, there is the systematic weighted scoring of tourism products, which involves subjectivity in assigning weights. Different evaluators may have varied perspectives, leading to potential biases in the assessment. Other than that, the study may not have engaged with all relevant stakeholders in the tourism development process. A more extensive stakeholder engagement could provide a more comprehensive understanding of potential challenges and opportunities. Future researchers can extend the research to include a comparative analysis of rural tourism potential in different regions. Comparing diverse contexts would contribute to a more robust understanding of the factors influencing success in rural tourism development.

5.4. Conclusion

In conclusion, the research on the untapped tourism potential of three villages in Bukit Tengah, Penang, Malaysia, employed a comprehensive mixed-methods approach to assess tourism products and explore community participation in rural tourism development. Guided by the Sustainable Development Theory, the study emphasised a holistic approach integrating economic, social, and environmental dimensions to ensure long-term benefits for the local B40 communities. Uncovering latent potential, contingent on local support and collaboration with stakeholders, the research highlighted the importance of community involvement in decision-making processes and the capacity of rural tourism to generate income, promoting economic

growth, environmental sustainability, and community well-being. Aligned with the state government's goal and Sustainable Development Goals 8 and 11, the study contributes to regional development and the broader agenda of sustainable development. The research not only identifies untapped potential but also offers actionable insights for policymakers, communities, and stakeholders, emphasising the transformative impact of sustainable rural tourism on economic opportunities, cultural preservation, and environmental well-being.

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