Journal of Infrastructure, Policy and Development 2024, 8(8), 6370.
https://doi.org/10.24294/jipd.v8i8.6370

Article

The effect of natural environment, tourism infrastructure, perceived social benefit, and perceived barriers on residents' attitude towards agrotourism in Seremban, Malaysia

Wong Chee Hoo[1], Alex Ng Hou Hong[1], Sudhakar Madhavedi[2,3,*], Ree Chan Ho[4], Kwang Sing Ngui[5], Manoch Prompayo[6]

[1] Faculty of Business and Communications, INTI International University, Nilai 71800, Malaysia
[2] Kshatriya College of Engineering Armoor, Jawaharlal Nehru Technological University Hyderabad, Hyderabad 500085, India
[3] INTI International University, Nilai 71800, Malaysia
[4] School of Management & Marketing, Taylor's University, Subang Jaya 47500, Malaysia
[5] Faculty of Business, Design and Arts, Swinburne University of Technology, Sarawak Campus, Kuching 93350, Malaysia
[6] School of Management, Shinawatra University, Bang Toei, Sam Khok 12160, Thailand
*** Corresponding author:** Sudhakar Madhavedi, reachfirst@gmail.com

CITATION

Hoo WC, Hong ANH, Madhavedi S, et al. (2024). The effect of natural environment, tourism infrastructure, perceived social benefit, and perceived barriers on residents' attitude towards agrotourism in Seremban, Malaysia. Journal of Infrastructure, Policy and Development. 8(8): 6370. https://doi.org/10.24294/jipd.v8i8.6370

ARTICLE INFO

Received: 13 May 2024
Accepted: 3 June 2024
Available online: 28 August 2024

Abstract: The rising trend of tourists selecting agrotourism as a tourist destination has become an intriguing study issue. Seremban is a well-known tourist attraction that is popular among visitors. As a result, Seremban has been selected as the study site. However, river pollution may have an influence on Seremban's natural environment and agrotourism potential. Furthermore, inadequate infrastructure, such as unauthorized parking, exacerbated the inhabitants' problems. A growing number of young people leave Seremban to pursue employment or further education in other cities, with no desire to work as farmers. The labor scarcity has also made it difficult for farmers to grow their farms. Consequently, the study aims to examine how factors such as the natural environment, tourist infrastructure, perceived social advantages, and perceived barriers influence the attitudes of Seremban residents towards agrotourism, with a focus on its potential for driving economic growth. This study adopts quantitative research methods, employing descriptive and causal research designs. Primary data collection is conducted through questionnaires, supplemented by secondary data. Non-probability quota sampling is utilized due to the absence of a specific sampling frame, with a sample size of 385 respondents determined using G*Power software. Constructs are developed based on previous research, and the questionnaire comprises Likert-scale items to gauge attitudes and perceptions. A pilot study assesses the instrument's reliability. Data analysis is performed using SPSS software, encompassing multiple linear regression and Pearson correlation analyses in addition to descriptive statistics. The findings provide valuable insights into the factors driving residents' perceptions of agrotourism in Seremban, emphasizing the importance of the natural environment, tourism infrastructure, perceived social benefits, and perceived barriers in shaping attitudes. Additionally, the study highlights the resilience of residents' positive attitudes toward agrotourism, despite potential challenges and barriers identified. Overall, these results offer implications for policymakers and stakeholders involved in tourism development in the region.

Keywords: agriculture; natural environment; tourism infrastructure; perceived social benefits; perceived barriers; attitude; agrotourism

1. Introduction

During the 1970s, the agricultural industry played a pivotal role in Malaysia's economy, contributing around 37% to the country's overall economic output.

Consequently, Malaysia has been recognized for its significant prospects in the field of Agrotourism. Agrotourism in Malaysia is experiencing a growing trend, as seen by its increasing popularity in recent years (Julius, 2022). Agrotourism, also referred to as farm tourism, encompasses the engagement of visitors in agricultural pursuits or the immersion in rural lifestyles. This particular endeavor offers an exceptional prospect for tourists to establish a connection with the natural environment, acquire knowledge pertaining to agriculture, and immerse themselves in the local cultural milieu. The underlying principle of Agrotourism is the provision of engaging activities for tourists within agricultural settings. These activities may include fruit picking, participation in irrigation and fertilization processes, and consumption of organic farm products, involvement in produce or handicraft production, as well as opportunities for enhanced understanding of agricultural practices.

According to Demirezen (2020), Malaysia assumes a significant position in its national growth as a prominent exporter of agricultural products, encompassing key commodities such as natural rubber, pineapple, and cocoa. According to Munan (2001), tourism has emerged as the third most significant source of foreign exchange earnings in Malaysia. It is essential to acknowledge the role played by the agriculture sector in enhancing the tourist business (Mazlan and Juraimi, 2014). The direct contribution of tourism to GDP in Malaysia from 2013 to 2022 (in billions of ringgits) is presented in **Figure 1**.

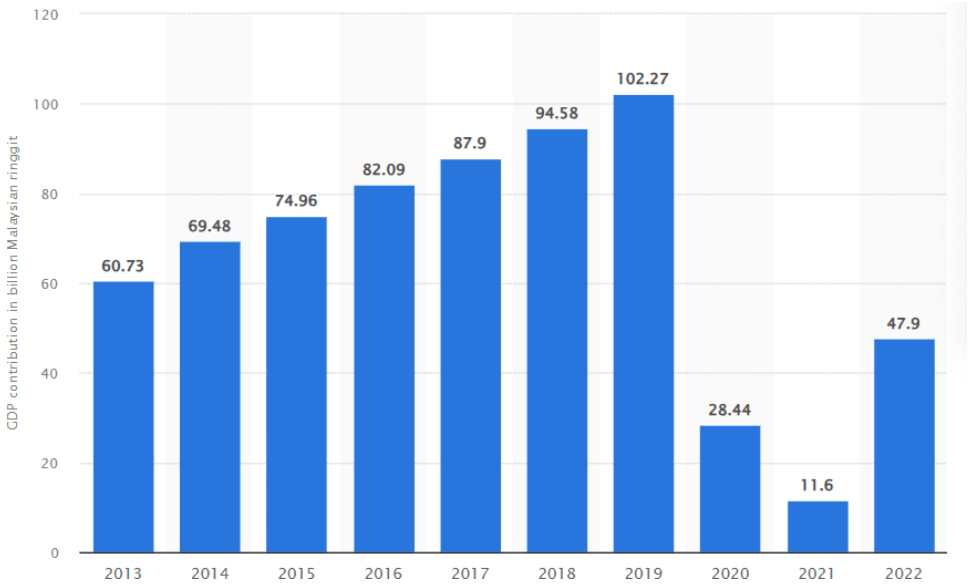

Figure 1. Malaysia: GDP direct contribution tourism 2022 (Statista, 2023).

According to the data presented in **Figure 1**, there is a discernible upward trend in the contribution of tourism to Malaysia's Gross Domestic Product (GDP) for the period spanning from 2013 to 2022. The tourist sector in Malaysia experienced significant challenges in 2020 as a result of the Covid-19 epidemic. However, with the gradual relaxation of worldwide epidemic control measures, the tourism industry in Malaysia has shown a revival in 2022. Furthermore, the Malaysian government, as stated in the 9th Malaysia Plan spanning from 2006 to 2010, expressed its intention to foster the growth of agrotourism and implement a strategy to enhance tourist activities. Additionally, substantial investments were allocated towards the improvement of

tourism facilities and the promotion of attractions to boost their visibility (Lee and Chew, 2017).

Seremban, Malaysia is a town located in the state of Negeri Sembilan. It is recognized as agrotourism hub, offering visitors a favorable environment characterized by an average temperature of around 29 degrees Celsius. This climatic condition renders Seremban an attractive location for travelers seeking leisurely vacations. There exist several categories of farms and orchards that cater to tourists seeking immersive experiences, such as pineapple plantations and ostrich farms located in Seremban. According to the World Population Review (2023), the population of Seremban presently exceeds half a million, exhibiting a notable growth rate of 42% for the period spanning from 1993 to 2023. According to projections, the population of Seremban is expected to reach 0.568 million by the year 2030. With the increase in population, the allocation of resources towards agrotourism will serve as a catalyst for increased local resident engagement in the development of Seremban. Consequently, this will enhance the appeal of Seremban as an agrotourism destination, drawing a larger influx of visitors. Consequently, the overall growth of agrotourism in Seremban will be bolstered.

1.1. Problem statement

Despite the acknowledgment and growth of agrotourism in Seremban, there is a need for improvement in order to achieve enhanced outcomes. The agrotourism industry in Seremban encounters obstacles arising from insufficient infrastructure and marketing endeavors, impeding its capacity to flourish as a prominent tourist attraction. The substandard road infrastructure leading to agrotourism destinations, insufficiency of contemporary amenities and minimal internet presence together contribute to a subpar visitor experience. During typical Malaysian holidays, the traffic flow to and from Seremban has significant congestion, resulting in a considerable delay in completing the 60-kilometer route, which can take up to 2 hours. In comparison to the traffic volume seen in 2019, there was a twofold rise in traffic volume.

According to Lim (2022), this situation poses challenges for visitors who are travelling during the peak season, since it necessitates the allocation of their constrained time towards the voyage. The issue at hand poses a significant challenge for both the inhabitants of the area and anyone visiting the locality. Seremban is confronted with the issue of unauthorized parking, whereby certain vehicles are unlawfully parked, obstructing the access points to the main road leading to Seremban Jalan Kiara, resulting in traffic congestion. This predicament has persisted for nearly two decades and has not witnessed any significant amelioration, despite numerous grievances raised by the local populace (Lim, 2022). Furthermore, the tourist business in Seremban, as well as the entire country, has the challenge of labor scarcity. One primary factor contributing to this issue is the absence of sufficient financial incentives to recruit both domestic and international skilled labor.

The agrotourism sector, in particular, needs a significant influx of foreign laborers to sustain the functioning of agricultural establishments. The scarcity of labor has resulted in several farmers relinquishing their agricultural operations; therefore,

cause a sense of despair over the next prospects. In addition, this phenomenon also results in the depletion of the indigenous workforce (Jaunis et al., 2022). It is worth noting that the distinctive climate of the country can give rise to many natural calamities, including landslides triggered by intense precipitation. These occurrences pose a significant threat to the long-term viability of agrotourism, therefore endangering the well-being of both local inhabitants and visiting tourists. In summary, the issues present in Seremban have the potential to impact the perspective of its inhabitants regarding the advancement of agrotourism.

1.2. Significance of study

The study aims to highlight Seremban's potential as a prime agrotourism destination, leveraging its favorable climate and picturesque landscapes. With a strong focus on agriculture, including plantations, farms, and agricultural product sales, Seremban is poised to transition into a thriving agrotourism hub. This transition holds the promise of attracting a significant influx of tourists, thereby elevating Seremban's status in the agrotourism sector. However, the attitudes of local residents are pivotal in shaping decision-making processes in this regard.

Agrotourism intertwines tourism with agricultural activities, offering potential revenue boosts to the tourism industry. Leveraging agrotourism as an economic driver presents a valuable opportunity for Malaysia's economic growth. Enhancing tourism infrastructure and preserving the natural environment are crucial steps the government can take to attract tourists to Seremban. Additionally, addressing social benefits and mitigating potential barriers are imperative for Seremban to establish itself as a premier agrotourism destination. The success of these efforts heavily relies on the attitudes of residents, which significantly influence the trajectory of agrotourism development.

The alignment of interests between residents and tourists directly impacts the overall impact on the country. Recognizing the benefits associated with agrotourism, the government is actively involved in strategizing for its expansion and sustainability. Therefore, the current study is undertaken.

1.3. Research objectives

The study's primary objective is to understand factors influencing residents' attitudes toward agrotourism in Seremban, focusing on the natural environment, tourism infrastructure, perceived social benefits, and barriers. It seeks to explore how these factors shape residents' perceptions and willingness to embrace agrotourism as a potential driver of economic growth in the region. The following sub-objectives supports to achieve primary objective.

1) To study the relationship between the natural environment and the attitude of Seremban residents towards agrotourism.
2) To analyse the relationship between tourism infrastructure and Seremban residents' attitudes toward agrotourism.
3) To understand the relationship between perceived social benefits and Seremban residents' attitudes toward agrotourism.
4) To examine the relationship between perceived barriers and Seremban residents'

attitudes toward agrotourism.

2. Review of literature

Definition of agrotourism: Many academics interpret agrotourism in different ways. The majority of them see it as a fusion of ecotourism and farming, bringing together the harmony of nature and travel. Agrotourism, as defined by various authors, encompasses a diverse array of experiences blending agricultural and tourism elements. Eshun (2014) characterizes it as a form of tourism intertwining recreational and agricultural pursuits, often centered on farm environments and natural settings. Busby and Rendle (2000) emphasize the collaborative aspect, where visitors actively engage with farmers in various farm-related activities, fostering a hands-on experience. Kiper (2011) elaborates on the breadth of activities involved, including immersing oneself in farm culture, observing farming techniques, enjoying scenic landscapes, and participating in farm tasks. Iakovidou (1997) broadens the scope to include rural tourism activities occurring within both primary and secondary economic sectors, underscoring the multifaceted nature of agrotourism. Bernado et al. (2004) highlight the business dimension, illustrating how working farms serve as revenue-generating entities while simultaneously providing entertainment for guests. Similarly, Nawawi et al. (2020) spotlight the role of small-scale farmer cooperatives in managing agrotourism activities, particularly in non-urban areas, thus contributing to the development of the agro-based tourism sector. Finally, The Ministry of Tourism and Culture Malaysia (2018) emphasizes the provision of diverse agricultural experiences to guests, indicating the global relevance and growing recognition of agrotourism as a significant tourism segment.

Tourism and modern rurality are interconnected concepts that have gained increasing attention in recent years. Farm-based tourism, in particular, has emerged as an effective means of addressing the socio-economic challenges faced by rural areas and the agricultural sector. Various studies have highlighted the benefits of promoting rural tourism, such as increasing local participation in creating and managing tourism products and facilitating infrastructural development (Flanigan et al., 2014). The findings show that, first, the overall spatial distribution of rural tourism characteristic villages in Henan Province is characterised by aggregation and unbalanced distribution, and the overall spatial distribution density demonstrates the aggregation characteristics of "four cores and one belt". Second, rural tourist characteristic villages may be separated into four categories: agricultural industry, rural culture, and highlighted villages and cities (Du et al., 2024). Despite its logical constraints, the findings of this case study suggest that developing local tourism-limiting policies in rural areas seems to be particularly possible (Ruiz-Ballesteros and González-Portillo, 2024). The findings of Magri-Harsich et al. (2024) demonstrate the cultural and economic importance of dairy production, the knowledge of farmers gained via the area's agrotechnical school, and the possibilities for the Argentine rural to engage in food tourism through cheese. Maziliauske's (2024) research adds to the literature on sustainable rural destination development and the role of tourist SMEs, as well as broadens our knowledge of software and the advantages of collaboration. Liu et al. (2024) study gave hotel managers useful information about how to use technology to

make their businesses more efficient and keep customers coming back. It also stresses how important it is to use green strategies and be environmentally friendly.

2.1. Review of the relevant conceptual model

There have been several previous studies done on the growth of agrotourism in Seremban. Kunasekaran et al. (2011) conducted a study to identify the variables that will affect farmers' perceptions of agrotourism. These earlier studies indicated that fewer scholars had talked about how the people of Seremban felt about agrotourism. Nonetheless, Andereck and Mcgehee's (2008) study found that examining locals' attitudes toward tourism is one of the most methodical ways to examine the industry. Residents play a significant role in the tourist business since they contribute to the destination's image and are perceived as being kind; therefore, it's critical to consider locals' attitudes in order to maximize the potential of tourism. Residents' opinions on the effects that tourism brings are typically correlated with their attitudes toward tourism.

According to Echtner and Ritchie (2003) in the tourist sector, locals play a significant role as they contribute to the destination's image and are often seen as friendly. Therefore, it's critical to consider locals' attitudes in order to maximize the potential for tourism. Locals' attitudes about tourism can influence how visitors see the location, whether they are favorable or unfavorable (Gallarza et al., 2002).

2.2. Review of relevant theories

The framework as a whole finds support in two relevant theories: the Model for Assessing Tourism Offer (MATO) and Social Exchange Theory (SET). The primary objective of SET is to minimize costs while maximizing benefits. The amalgamation of anthropogenic and natural potential to explore agrotourism forms the basis of the Model for Assessing Tourism Offers. These two theories are elucidated and discussed as follows.

2.2.1. Social Exchange Theory (SET)

The primary theory underlying the agrotourism framework throughout the whole research is Social Exchange Theory (SET) has been utilized in various studies (Ap, 1992; Getz, 1994; Perdue et al., 1995) to explore locals' attitudes toward tourism. SET, as described by Ap (1992), focuses on understanding exchanges between individuals, emphasizing maximizing benefits and minimizing costs. Kang and Lee (2018) proposed that locals would view tourism expansion favorably if they perceived social benefits, thus encouraging growth. Conversely, those finding the exchange cumbersome may oppose tourist expansion (Zadel et al., 2014).

Research suggests individuals experiencing both benefits and costs may perceive tourism growth differently), valuing positive outcomes and devaluing declines (Hasani et al., 2016). Harill (2004) notes SET as foundational for understanding locals' views on tourism growth, with individuals more willing to engage if benefits outweigh drawbacks (Choi and Murray, 2010). In nutshell, SET underpins this study's examination of Seremban residents' attitudes toward agrotourism, determining the link between their attitudes and independent variables such as natural environment (NE), tourism infrastructure (TI), perceived social benefits (PSB), and perceived

barriers (PB).

2.2.2. Model for assessing tourism offer (MATO)

Albu developed a tourism assessment model focusing on natural and anthropogenic potential. The model evaluates factors like climate, flora, fauna, scenery, pollution for natural potential, and socio-cultural potential (Albu and Cimpean, 2017). These factors combine to form tourist potential, but visitor amenities and tourism potential must also be considered for a comprehensive assessment of the tourism offer.

In 2016, Albu and Cimpean (2017) expanded the model to include additional factors such as evaluations, recommendations, and a political-legal framework, enhancing the evaluation of the tourism offer. This methodology reduces the risk of ineffective investments and allows for a more thorough assessment of participation potential in the tourism sector (Albu and Cimpean, 2017). This concept's justification may offer insights into how locals perceive agrotourism in relation to environmental factors and tourism infrastructure.

Social Exchange Theory (SET) is the most often used the theory to explain resident effect perception. In the realm of tourism, SET proposes that indicated support for tourist development be interpreted as a desire to engage in an exchange, and citizens choose exchanges after weighing the advantages and costs. On the other hand, MOTA model stated that the general environment of tourist destinations (political-legal environment, social-cultural environment, and economic-technical environment), as well as evaluations and suggestions, forecast a destination's image as a tourism offer.

2.3. Dependent variable: Attitude

Attitude, as conceptualized by Allport (1933), is a mental state that shapes people's reactions and responses to various circumstances and objects. It is influenced by individuals' emotions, beliefs, and experiences (Chave, 1928), and can be evaluated as favorable or unfavorable (McLeod, 2009). Angostinos and Walker (1995) suggest that attitude is sometimes exhibited through observable behavior. Bogardus (1931) posits that attitudes can be either supportive or antagonistic toward a particular feature, affecting how it is perceived. This current study on investigating agrotourism in Seremban sheds light on citizens' attitudes, portraying agrotourism as a beneficial, pleasant, enjoyable, wise, intriguing, valuable, actively supported, and desirable concept.

Numerous studies have explored people's attitudes toward specific subjects, with a particular focus on locals' perceptions of agrotourism (Ribeiro et al., 2017). According to Marzuki (2012), agrotourism can exert dual impacts on ecological and social dimensions, with both positive and negative ramification, while Adeleke (2015) suggests that residents' attitudes determine their support or opposition to agrotourism. Previous research highlights that the success of agrotourism hinges on how much locals value tourist initiatives (Ribeiro et al., 2017), emphasizing the importance of regularly evaluating local attitudes and opinions to foster agrotourism development.

Perdue et al. (1987) contend that the optimal realization of tourism benefits occurs when there is a symbiotic relationship between local residents and visitors,

fostering mutual advantages for both parties. In instances where locals perceive agrotourism activities as advantageous, they actively support and engage with visitors. Locals' acceptance of agrotourism is contingent upon their belief that interacting with visitors will benefit those (Ribeiro et al., 2017). Positive impacts such as enhanced self-worth and community connection, as well as negative effects like pollution and inadequate infrastructure, influence locals' attitudes toward agrotourism, reflecting the complexities of their daily lives (Zadel et al., 2014).

2.4. Description of variables

2.4.1. Natural environment

The present study included aspects such as ecological, political, economic, and socio-cultural spheres, resulting in a broad definition of the environment (Mansor et al., 2015). However, this study specifically focuses on the natural environment, encompassing elements such as topography, landscape, weather, climate, water resources, flora and fauna, and other natural environmental features (Pedreira and Fidalgo, 2017). Tourists often prefer resting spots that offer components of the natural environment, with agrotourism attracting those who favor quieter, more natural settings (Barkauska et al., 2015; Viglia and Abrate, 2017). The climate of Seremban, identified as one of the factors promoting agrotourism, plays a crucial role in attracting tourists, particularly to sites vulnerable to climatic changes (Dinca et al., 2014; Kunasekaran et al., 2012).

Weather and temperature are often considered by tourist destinations to make a positive first impression, as they allow visitors to engage in outdoor activities, a feature frequently used to promote agrotourism (Pedreira and Fidalgo, 2017; Soboll and Schmude, 2011). Seremban's tourist attractions include natural features such as forests, rivers, waterfalls, and flora and fauna, with high-quality water resources essential for sustaining ecosystems and agricultural activities (Danish and Wang, 2018; Pedreira and Fidalgo, 2017; Pricik and Kotrla, 2014). Environmental cleanliness is another crucial factor influencing tourists' perceptions of a destination's quality, with both locals and agrotourism operators relying on the cleanliness of the environment for their daily activities (Ryglova et al., 2017). The cleanliness, scenic beauty, flora and fauna, and climate of the Seremban environment are thus essential components for promoting agrotourism in the region.

2.4.2. Tourism infrastructure

Tourism infrastructure, as defined by Inskeep 1991 refers to physical components specifically designed and constructed to cater to tourists' needs. It encompasses fundamental structures, facilities, and service organizations essential for the functioning of society and economics (Panasiuk, 2007). In the context of tourism, infrastructure includes regional tourism items with structures, facilities, and necessary equipment for travel-related activities (Musa and Thirumoorthi, 2016). The growth and success of a destination's tourism sector are intimately intertwined with the quality and adequacy of its tourism infrastructure (Nunkoo and Ramkissoon, 2011). Examples of tourism infrastructure cited by them include parking spaces and road networks, which facilitate travel for both visitors and locals. Basic infrastructure provided by the government, such as power and water supply, enables residents to establish businesses

and create employment opportunities (Anuar et al., 2013). De Lucia et al. (2021) investigates the impact of information and communication technology (ICT) on residents' attitudes towards tourism as a driver of development in the European Union. Findings suggest that digital technology usage and tourism offerings significantly influence favorable attitudes towards tourism as a catalyst for regional development. Gavurova et al. (2021) examines the relationships between infrastructure innovations and tourism spending in developed countries. The study highlights the significant influence of information and communication technology (ICT) advancements on tourist spending, emphasizing the economic importance of tourism-related spending and innovations. Chin (2022) studies the influence of destination appeal and tourism infrastructure on rural tourism destination competitiveness and revisit intention in Bario Kelabit Highland. Findings suggest that destination resources and accessibility quality significantly impact competitiveness and revisit intention in rural tourism destinations.

Panasiuk (2007) categorized tourism-related infrastructure into various aspects, all serving the purpose of allowing visitors to utilize and enjoy their stay at the destination. This includes food and beverage infrastructure, such as restaurants located within tourist areas, and accommodation infrastructure, encompassing hotels, apartments, lodges, hostels, and camping facilities (Panasiuk, 2007). The lodging infrastructure has been shown to significantly impact tourism, influencing travelers' intentions to visit and enhancing their overall experience (Dwyer and Kim, 2003; Nam et al., 2011). In Seremban, various types of farms, including vegetable and fruit farms like pineapple farms, offer leisure activities for tourists to engage in (Pineapple). These elements constitute the basic tourism infrastructure available in Seremban and will be included in the questionnaire to measure tourists' perceptions of tourism infrastructure in the area.

2.4.3. Perceived social benefits

This study explores how agrotourism businesses offer employment opportunities, social interactions, and cultural exchanges for locals in Seremban (Mansor et al., 2015). Agrotourism provides job opportunities for locals, serving as a strategy for farm succession and raising the standard of living for families involved in agriculture. The employment opportunities created by agrotourism not only benefit locals but also meet the ongoing demands of tourists visiting Seremban (Pedreira and Fidalgo, 2017). Lepp (2007) and Marzuki (2012) examine the perspectives of local residents regarding the economic impacts of tourism development in Phuket. Marzuki finds that residents' support for tourism growth depends on perceived benefits, while Lepp suggests that improvements in the agricultural market may foster more favorable attitudes towards tourism development.

Moreover, agrotourism fosters social connections and cultural exchanges, enhancing the quality of life for locals (Barbieri and Mshenga, 2008). Social engagement and the opportunity to interact with visitors are perceived as significant benefits of agrotourism, surpassing economic gains. Locals have the chance to socialize with tourists, learn from them, and share their experiences and cultures, contributing to a rich exchange of knowledge and skills (Mazlan and Juraimi, 2014; Tiraieyariand Hamzah, 2012). Andereck and Nyaupane (2011) delve into residents'

perceptions of tourism and quality of life, emphasizing the role of social advantages in shaping attitudes toward tourism development. Their study indicates that locals who perceive social benefits are more likely to favor tourism development, underscoring the importance of considering social dynamics in tourism planning and management.

Agrotourism also promotes education and awareness about rural culture, providing locals with new information and skills while stimulating agricultural activity in the area. Educating visitors about agrotourism can motivate businesses to support the industry by providing necessary goods and services (Tiraieyari and Hamzah, 2012). Ultimately, the effectiveness of agrotourism largely depends on the ability of owners or hosts to effectively plan, organize, coordinate, and manage their businesses (Bwana et al., 2015).

Paresh and Milind (2012) in their study highlighted how agrotourism facilitated the development of entrepreneurial skills and career advancement opportunities for locals (Tiraieyari and Hamzah, 2012). Locals were able to acquire management and entrepreneurial skills, empowering them to grow their businesses sustainably. Additionally, locals believed that agrotourism played a role in preserving rural areas and natural environments. Agrotourism operators offered environmentally friendly activities and educated visitors about agricultural production and conservation issues, enhancing public awareness of environmental preservation (Barbieri, 2013; Zhang, 2016). Residents of Seremban perceived agrotourism as a means to access employment opportunities, educate the public about agriculture, interact with tourists, develop entrepreneurial skills, and contribute to the preservation of the natural environment and local cultural practices. This perception was evaluated as part of the research's measurement of perceived social benefits (Deepthi and Davy, 2017).

2.4.4. Perceived barriers

According to Crawford and Godbey (1987), barriers refer to any factors hindering the establishment or expansion of tourist involvement, often leading to non-participation. These barriers can take various forms, including intrapersonal, interpersonal, and structural barriers. This study specifically focuses on structural barriers related to factors such as time, money, human capital, and opportunity availability (Gilbert and Hudson, 2005). Understanding how deeply rooted structural barriers impact locals' attitudes or perceptions of agrotourism development are crucial for comprehending these factors.

Radović (2020) highlights the significance of financial resources and support for locals in establishing agrotourism ventures. Adequate financial resources, including funds and investment, are necessary for the development of ideal agrotourism destinations (Choong et al., 2018). However, the lack of government support can hinder infrastructure development and the growth of local businesses, leading locals to perceive the development negatively and feel deprived of its benefits (Paimin et al., 2014). Furthermore, a significant labor force is required to operate agricultural operations as larger businesses. Shortages in manpower can demotivate locals and reduce their willingness to engage in agricultural activities (Mao et al., 2014).

Kunasekaran et al. (2011) point out that temporary licenses represent a significant hurdle for residents in their study in Malaysia. Farmers operate their businesses under temporary permits and lack ownership of the land, leading to concerns about the

temporary nature of their access to the property (Choong et al., 2018). This uncertainty hampers their willingness to invest in expanding their businesses. Additionally poor marketing and promotion skills are perceived as a significant barrier to agrotourism development (Jarabkova et al., 2016). Micro, small, and medium enterprises often struggle to implement effective marketing strategies, and the absence of marketing efforts from tourist boards further exacerbates the issue (Dogra and Gupta, 2012). Residents may lack the necessary marketing skills and understanding to run successful businesses, highlighting the importance of acquiring these skills for effective participation in tourism development (Vyas et al., 2014).

2.5. Proposed conceptual framework

The conceptual framework proposed in **Figure 2** delineates the elements that shape communities' attitudes toward agrotourism.

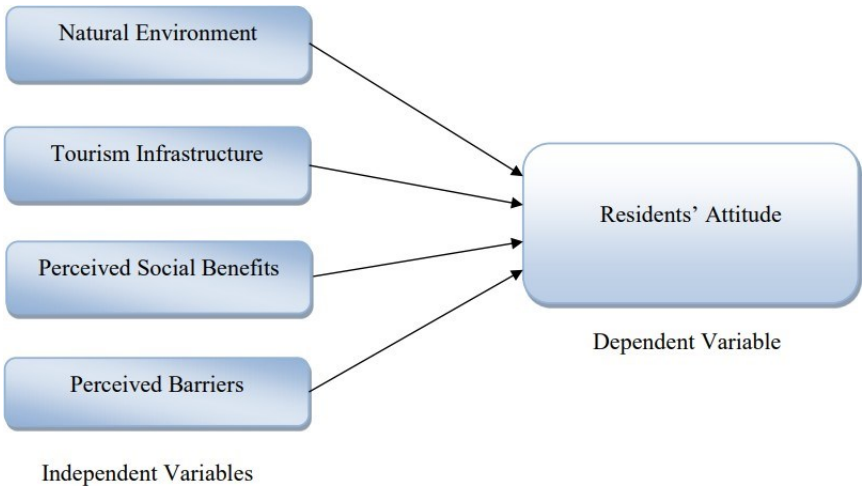

Figure 2. Proposed conceptual framework.

The study focuses on how the Model for Assessing Tourism Offer impacts the development of tourism destinations like Seremban. It highlights residents' favorable attitudes towards Seremban's natural attractions, such as its climate and wildlife (Panasuik, 2007). Additionally, it emphasizes the importance of tourism infrastructure, including amenities and services, in enhancing the overall tourist experience. The research aims to assess whether Seremban's current tourism infrastructure meets the needs of both visitors and residents, and if improvements are necessary to further boost tourism in the region.

The Social Exchange Theory suggests that favorable attitudes arise when benefits outweigh costs. Agrotourism in Seremban offers social benefits such as cultural exchange and increased employment opportunities, which enhance residents' well-being (Mansor et al., 2015; Nunkoo and Ramkissoon, 2011). However, barriers like personnel shortages may hinder agrotourism's growth. Research aims to assess community perceptions of these benefits and barriers, crucial for understanding attitudes towards agrotourism in Seremban (Avineshwaran, 2017).

2.6. Hypothesis development

The following are the hypotheses of the study emerged from the intensive review

of literature pertaining to agrotourism.

1) There is a significant relationship between the natural environment (NE) and residents' attitudes (RA) towards agrotourism in Seremban.
2) There is a significant relationship between tourism infrastructure (TI) and residents' attitudes (RA) towards agrotourism in Seremban.
3) There is a significant relationship between perceived social benefits (PSB) and residents' attitudes (RA) towards agrotourism in Seremban.
4) There is a significant relationship between perceived barriers (PB) and residents' attitudes (RA) towards agrotourism in Seremban.

3. Research methodology

The research methodology and guidelines for conducting the study will be outlined in this section. This section will cover research tools, measurement constructs, and data analysis to identify significant relationships between variables.

3.1. Research design

This study employs quantitative research to identify factors influencing Seremban residents' attitudes towards agrotourism. Utilizing descriptive research, it evaluates variable relationships for better theoretical understanding. Causal research investigates the cause-and-effect relationship between residents' attitudes (dependent variable) and independent variables like natural environment, tourism infrastructure, social benefits, and barriers (Kothari, 2009).

3.2. Data collection

Primary data, collected directly from respondents by the thorough questionnaires, a common tool in social science research. Structured questions in the questionnaire will gather primary data relevant to the study objectives. Secondary data, sourced from published sources such as science direct and sage, will complement primary data and aid in constructing arguments for the proposed framework (Johnston, 2014). The study aimed to identify factors influencing Seremban residents' attitudes towards agrotourism, making them the target demographic. Target population refers to the subset needed for data collection (Draugalis and Plaza, 2009). Residents will be surveyed about their perspectives on agrotourism's potential and development in Seremban, as they would be directly affected by its implementation. Data were collected starting from March until May 2024.

3.3. Sampling

A sampling frame refers to a collection of samples drawn from various sources (Turner, 2003). However, focusing on Seremban locals as the population for the study may present challenges due to its wide-ranging nature. As a result, this study is lacking a specific sampling frame. As this study focuses on exploring factors influencing locals' attitudes toward agrotourism in Seremban, Negeri Sembilan, the sampling location will be Seremban itself. Sampling elements are the cases or units of analysis within a population, are influenced by the choice of frame (Hitzig, 2004). As the sample frame and contact list of target respondents couldn't be obtained, probability

sampling is not feasible. Instead, non-probability sampling will be employed to investigate real-life phenomena. Given specific criteria guiding sample selection, quota sampling is preferred (Kothari, 2009; Taherdoost, 2016).

Cunningham and Gardner (2007) emphasized the importance of estimating an optimal sample size at the start of data collection, ensuring adequacy for desired findings. In this study, the G*Power tool is utilized to determine the sample size, taking into account parameters such as effect size (f^2), α (alpha), power value ($1 - \beta$), and the total number of predictors. The subsequent section outlines the results of the sample size calculations conducted using the SPSS v29 software. **Table 1** represents the method of sample size determination in the current study.

Table 1. Determining the research sample size.

Input	Parameter amount
Effect size f^2	0.15
Alpha (α) error probability	0.05
Power ($1 - \beta$ error probability)	0.80
Total number of predictors	4.00
Total sample size (n)	385

3.4. Development of constructs

The questionnaire was developed by adapting and modifying one from other researchers. The original form of the questionnaire and the number of questions that were modified and used in this study are displayed in the table below. The degree of measurement at which a variable is graded is known as the scale of measurement (Sekaran and Bougie, 2016). **Table 2** listing the constructs used in the current study along with their sources:

Table 2. Sources of research construct.

Construct	Adopted from	No. of question
Natural environment	Mohammad et al. (2017)	1
Tourism infrastructure	Sonchaem et al. (2017)	1
Perceived social benefit	Tew and Barbieri (2012)	2
Perceived barrier	Kunasekaran et al. (2011)	1
Residents' attitude	Moghavvemi et al. (2017)	5

3.5. Research tool & questionnaire

This study employs self-administered survey questions designed for respondents to independently complete, whether through online platforms or on paper. Each question adheres to a standardized format to ensure impartiality in responses, with fixed-alternative questions structured as multiple-choice options, including determinant-choice and simple dichotomy questions. The questionnaire consists of two sections: Section-A collects basic demographic information through ten straightforward questions covering various aspects such as gender, age, race, religion, marital status, income level, education, duration of residency, residential status, and

connections to tourism-related employment or business.

In contrast, section-B focuses on the four independent factors—natural environment (NE), tourist infrastructure (TI), perceived social benefits (PSB), and perceived barriers (PB)—pertaining to attitudes and support for agrotourism. Using a 5-point scale (Likert's scale) varying from strongly disagree (1) to strongly agree (5), Section-B aims to gauge respondents' perceptions of these factors and their correlation with residents' attitudes (RA) toward agrotourism in Seremban.

3.6. Pilot study & reliability

Before conducting the final study, a pilot study as shown by **Table 3** was conducted with a limited sample to assess internal consistency, reliability, and research potential. In this study, 40 residents of Seremban participated, considered adequate for accurate results. The pilot test results revealed reliability levels categorized as follows: good reliability (0.70–0.80), fair reliability (0.60–0.70), and very good reliability (0.80–0.95). Scales with alpha values below 0.60 are considered to have low reliability (Kothari, 2009). The findings indicate that variable-related questions in the questionnaire demonstrate reliability for data collection. The attitude variable exhibits good reliability, with several alpha values indicating very good and fair reliability for other variables.

Table 3. Cronbach's alpha coefficient for pilot test.

Variables	Cronbach's alpha	Range	Strength of association
Natural environment (NE)	0.690	<0.7	Fair
Tourism infrastructure (TI)	0.651	<0.7	Fair
Perceived social benefits (PSB)	0.834	>0.8	Very good
Perceived barriers (PB)	0.843	>0.8	Very good
Residents Attitude (RA)	0.749	>0.7	Good

Source: Developed by authors.

4. Data analysis & results

In this section, SPSS v29 is utilized to analyze the data. **Table 4** has been utilized to display all the results. Descriptive analysis will be employed in section A to assess the demographic profile. Additionally, scale measurement will be used to evaluate the reliability of instrument. The outcomes of the correlation and Multiple Regression analysis also presented in this section.

4.1. Descriptive analysis

Table 4 offers a summary of the descriptive analysis of demographic data. It forms the foundation for quantitative data analysis. Moreover, descriptive analysis simply presents the reality or what the data indicates. Through our questionnaire, the research has collected personal information from respondents, including their gender, marital status, level of education, race, religion, age group, monthly income, occupation, duration of residency, and employment in the tourist industry.

Table 4. Descriptive analysis of demographic variables.

Gender	**Frequency**	**Percentage**
Male	211	55
Female	174	45
Age	**Frequency**	**Percentage**
Below 20 years	38	10
20–30 years old	212	55
30–40 years old	74	19
40–50 years old	38	10
50–60 years old	17	4
60–70 years old	4	1
70 years above	2	1
Religion	**Frequency**	**Percentage**
Islam	62	16
Hinduism	44	12
Buddhism	193	50
Christian	82	21
Others	4	1
Race	**Frequency**	**Percentage**
Malay	58	15
Chinese	253	66
Indian	57	15
Other	17	4
Marital status	**Frequency**	**Percentage**
Single	268	69
Married	114	30
Others	3	1
Education level	**Frequency**	**Percentage**
Primary school	8	2
Secondary school	33	9
College or diploma level	105	27
Undergraduate level	214	56
Postgraduate level	23	6
Other	2	0
Monthly income	**Frequency**	**Percentage**
Less than RM 1000	149	39
RM 1000–RM 3000	89	23
RM 3000–RM 5000	79	20
RM 5000–RM 8000	50	13
RM 8000 and above	18	5

Table 4. (*Continued*).

Length of residency	**Frequency**	**Percentage**
Less than 5 years	132	34
5–10 years	39	10
11–20 years	94	25
21–30 years	89	23
30 years and above	30	8
Occupation	**Frequency**	**Percentage**
Government servant	12	3
Hired/employed	95	25
Student	201	52
Farmer	7	2
Pensioner	6	1
Own business	50	13
Unemployed currently	14	4
Work related to tourism	**Frequency**	**Percentage**
Yes	77	20
No	308	80

4.2. Reliability analysis

In this segment, we conduct a reliability assessment on a sample of 385 respondents to evaluate the coherence and association among the array of items utilizing Cronbach's alpha. The examination encompasses independent variables (natural environment, tourism infrastructure, perceived social benefits, and perceived barriers) and the dependent variable (residents' attitude), as defined in section 3.6. Cronbach's alpha is utilized as the conventional technique for gauging reliability. A summary of the reliability test outcomes is presented in **Table 5** below.

Table 5. Final reliability test.

Sl. No	**Dimensions**	**Number of items**	**Value of Cronbach's α**
1	Natural environment (NE)	6	0.784
2	Tourism infrastructure (TI)	7	0.697
3	Perceived social benefits (PSB)	6	0.706
4	Perceived barriers (PB)	8	0.646
5	Residents' Attitude (RA)	8	0.697

Observing the Alpha reference range values, it's apparent that perceived social benefits (0.706) and the natural environment fall within the Cronbach's alpha range indicative of good reliability. Conversely, the remaining independent variables, tourism infrastructure (0.697) and perceived barriers (0.646), as well as the dependent variable attitude (0.697), are categorized as having fair reliability. As depicted in **Table 5**, all variables scrutinized, comprising both independent and dependent ones, were deemed reliable.

4.3. Pearson's correlation

The examination of correlations involving independent variables such as natural environment (NE), tourism infrastructure (TI), perceived social benefits (PSB), perceived barriers (PB), and the dependent variable residents' attitude (RA) was conducted through Pearson correlation for the independent variables. **Table 6** presenting the coefficients of Pearson correlation to establish whether there is any significant relationship between independent variables and the dependent variable.

Table 6. Coefficients of correlation.

Correlations						
		Residents attitude (RA)	**Natural environment (NE)**	**Tourism infra-structure (TI)**	**Perceived social benefit (PSB)**	**Perceived barriers (PB)**
Residents attitude (RA)	Pearson correlation	1				
	Sig. (2-tailed)					
	N	384				
Natural environment (NE)	Pearson correlation	0.651**	1			
	Sig. (2-tailed)	<0.001				
	N	384	385			
Tourism infrastructure (TI)	Pearson correlation	0.660**	0.626**	1		
	Sig. (2-tailed)	<0.001	<0.001			
	N	384	384	384		
Perceived social benefit (PSB)	Pearson correlation	0.703**	0.534**	0.533**	1	
	Sig. (2-tailed)	<0.001	<0.001	<0.001		
	N	384	384	384	384	
Perceived barriers (PB)	Pearson correlation	0.505**	0.319**	0.282**	0.465**	1
	Sig. (2-tailed)	<0.001	<0.001	<0.001	<0.001	
	N	384	384	384	384	384

**: Correlation is significant at 0.01 level (2-tailed).

Residents' attitude (RA) has a strong positive correlation with:

- Natural environment (NE) ($r = 0.651$, $p < 0.001$).
- Tourism infrastructure (TI) ($r = 0.660$, $p < 0.001$).
- Perceived social benefit (PSB) ($r = 0.703$, $p < 0.001$).
- Perceived barriers (PB) ($r = 0.505$, $p < 0.001$).

All correlations are statistically significant at the $p < 0.001$ level, indicating a strong relationship between all independent variable (NE, TI, PSB, and PB) with dependent variable, residents' attitudes (RA).

4.4. Multiple regression analysis

Table 7 illustrates the findings of multiple regression analysis, which examines the relationship between multiple independent variables and a single dependent variable, as indicated by the coefficient of determination (R-square or R^2). The model summary reveals important aspects of the regression model's performance. An (R^2) value of 0.672 suggests a strong relationship between the independent variables viz., natural environment (NE), tourism infrastructure (TI), perceived social benefit (PSB),

and perceived barriers (PB) and the dependent variable (RA) is residents' attitude, indicating that approximately 67.2% of the variability in RA can be explained by these predictors. The adjusted (R^2) value, accounting for the number of predictors, further confirms the model's explanatory power with a value of 0.668. The standard error of the estimate, approximately 0.322, signifies the typical deviation of observed values from the regression line. A lower standard error implies that the model's predictions closely align with actual values, indicating a better fit. The Durbin-Watson statistic, at 1.934, suggests no significant autocorrelation in the residuals, crucial for meeting the assumption of independent errors in regression analysis.

Table 7. Multiple regression model.

Model summary[b]					
Model	***R***	***R*-square**	**Adjusted *R* square**	**Std. error of the estimate**	**Durbin-Watson**
1	0.820[a]	0.672	0.668	0.32197	1.934

a: Predictors: (Constant), NE, TI, PSB, PB.
b: Dependent variable: RA.

As per the ANOVA **Table 8**, the model's overall significance is evident. The regression model demonstrates a highly significant relationship with the dependent variable, as indicated by the *F*-statistic of 194.012 and the associated *p*-value of less than 0.001. This suggests that at least one of the predictor variables (NE, TI, PSB, and PB) significantly contributes to the variation observed in the dependent variable (RA).

Table 8. Analysis of variance (ANOVA).

ANOVA[a]						
Model		**Sum of squares**	**Df**	**Mean square**	***F***	**Sig.**
1	Regression	80.450	4	20.113	194.012	<0.001[b]
	Residual	39.289	379	0.104		
	Total	119.740	383			

a: Dependent variable: RA
b: Predictors: (Constant), NE, TI, PSB, PB.

Analyzing the coefficients presented in **Table 9** sheds light on the individual contributions of each predictor variable. All four predictors exhibit statistically significant coefficients ($p < 0.001$), implying that each have a meaningful impact on the dependent variable. The standardized coefficients (Beta) provide insights into the relative importance of each predictor variable after adjusting for differences in their scales. Additionally, collinearity statistics such as tolerance and variance inflation factor (VIF) are provided to assess multi-collinearity among the predictors, ensuring the robustness of the regression model. The multi-collinearity is a concern when predictor variables in a regression model are highly correlated with each other. To assess multicollinearity, it is essential to examine collinearity statistics such as tolerance and VIF.

Table 9. Coefficients of regression equation.

Coefficients[a]								
Model		**Unstandardized coefficients**		**Standardized coefficients**	***T***	**Sig.**	**Collinearity statistics**	
		B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
1	(Constant)	0.211	0.125	-	1.681	0.094	-	-
	NE	0.187	0.032	0.234	5.887	< 0.001	0.549	1.823
	TI	0.255	0.036	0.277	7.014	< 0.001	0.553	1.807
	PSB	0.291	0.033	0.339	8.701	< 0.001	0.569	1.758
	PB	0.202	0.035	0.194	5.818	< 0.001	0.777	1.288

a: Dependent variable: RA.

In the provided coefficients table, the tolerance value measures the proportion of variance in a predictor variable that is not explained by the other predictors in the model. It ranges from 0 to 1, with lower values indicating higher collinearity. In this model, the tolerance values range from 0.549 to 0.777. The VIF quantifies how much the variance of an estimated regression coefficient is increased due to multicollinearity. It is the reciprocal of the tolerance, so higher VIF values indicate higher collinearity. In this model, the VIF values range from approximately 1.288 to 1.823. Based on these values, it appears that there is no severe multicollinearity present in the model. Generally, tolerance values above 0.1 and VIF values below 10 are considered acceptable, indicating that the predictors are not highly correlated with each other.

In conclusion, all predictors (NE, TI, PSB, and PB) demonstrate statistically significant coefficients ($p < 0.001$), indicating that they have a meaningful impact on residents' attitudes (RA) towards the agrotourism in Seremban. This suggests that each of these factors plays a role in understanding the local receptiveness to agrotourism in Seremban.

4.5. Results of hypotheses testing

This study conducted an extensive investigation into the factors influencing residents' attitudes toward agrotourism in Seremban, focusing on exploring various factors such as the natural environment, tourism infrastructure, perceived social benefits, potential barriers to agrotourism, and overall attitudes toward agrotourism development in the Seremban area. The hypotheses testing results, presented in **Table 10** reveal that all four factors—natural environment (NE), tourism infrastructure (TI), perceived social benefit (PSB), and perceived barriers (PB)—demonstrate statistically significant coefficients ($p < 0.001$), indicating a meaningful effect or relationship on residents' attitudes toward agrotourism in Seremban. This study underscores the critical importance of these factors in shaping public opinions and attitudes toward agrotourism initiatives in the region.

These results are further supported by Pearson correlation co-efficient reflecting that residents' attitudes (RA) are significantly correlated with the all assessed independent variables. The presence of strong positive correlations across all four sets of independent and dependent variables enhances the positivity of the results.

Table 10. Results of hypotheses testing.

Hypothesis	Statement	Regression coefficients (*P*-value)	Pearson coefficients	Significant
H1	There is a significant relationship between the natural environment (NE) and residents' attitudes (RA) towards agrotourism in Seremban.	<0.001	0.651	Yes
H2	There is a significant relationship between tourism infrastructure (TI) and residents' attitudes (RA) towards agrotourism in Seremban.	<0.001	0.660	Yes
H3	There is a significant relationship between perceived social benefits (PSB) and residents' attitudes (RA) towards agrotourism in Seremban.	<0.001	0.703	Yes
H4	There is a significant relationship between perceived barriers (PB) and residents' attitudes (RA) towards agrotourism in Seremban.	<0.001	0.505	Yes

These results are consistent with the extensive research carried out by Huong and Lee (2017), which emphasizes the crucial role played by the natural environment, tourism infrastructure, and perceived social benefits in influencing residents' attitudes towards the advancement of agrotourism. The natural environment emerges as a valuable asset, with residents acknowledging its capacity to enhance the appeal and potential of agrotourism ventures. This perspective resonates with the conclusions drawn by Huong and Lee (2017), Mansor et al. (2015), Sharp and Adua (2009), who similarly discovered a positive association between the natural environment and residents' attitudes. Supported by the Model of Assessing Tourism Offer by Albu and Cimpean (2017) and the Social Exchange Theory proposed by Ap (1992), these results underscore the critical role played by both the natural environment and perceived social benefits in forecasting residents' attitudes towards agrotourism in Seremban.

Furthermore, perceived social benefits, encompassing aspects such as employment opportunities and social interactions, emerge as significant determinants influencing residents' attitudes. This assertion finds support in research conducted by Andereak and Nyaupane (2011), Munhurrum and Naidoo (2011), Muresan et al. (2016) and Sanchez et al. (2011). According to the Social Exchange Theory, residents tend to develop more positive attitudes towards agrotourism when they perceive a higher ratio of benefits to costs arising from tourism activities.

The study also unveils a noteworthy correlation between tourism infrastructure and residents' attitudes, aligning with prior investigations by Abdollahzadeh and Sharifzadeh (2014) and Muresan et al. (2016) suggest that well-developed tourism infrastructure plays a constructive role in shaping residents' attitudes towards agrotourism destinations. In contrast to concerns raised by Liu and Var (1986) regarding the negative implication of inadequate infrastructure, our study reveals that robust infrastructure, including adequate parking and dining facilities even during peak tourist seasons, fosters positive attitudes among residents towards agrotourism. Additionally, the study highlights that perceived barrier, such as reluctance to invest in agrotourism and challenges associated with operating under temporary occupation license (TOL) status, do not significantly dampen residents' attitudes. This implies that despite potential barriers, residents maintain largely positive attitudes towards agrotourism, showcasing resilience or minimal influence of perceived barriers on their perceptions. This specific finding is disagreeing with the study of Choong et al. (2018).

5. Conclusions

As agrotourism popularity continues to rise, attracting both domestic and international tourists, this research aimed to identify the factors influencing residents' attitudes towards agrotourism, particularly in the context of Seremban. The study proposes a framework where the natural environment, tourism infrastructure, perceived social benefits, and perceived barriers are considered as independent variables, with residents' attitudes towards agrotourism being the dependent variable. Seremban was chosen as the study location due to its rich natural resources and growing popularity as a tourist destination, making it an ideal setting for examining agrotourism.

Residents of Seremban are the focal population of this study, as their attitudes are crucial in shaping the development and success of agrotourism. A positive attitude among residents towards agrotourism can lead to greater understanding and support for these initiatives. The findings, derived from multiple linear regression analysis of collected questionnaire data, reveal that the natural environment, tourism infrastructure, perceived social benefit, and perceived barriers significantly impact residents' attitudes.

The results, generated from multiple linear regression analysis of gathered questionnaire data, show that the natural environment and perceived social advantages have no substantial influence on people' sentiments. The other two factors, tourist infrastructure and perceived obstacles, do not have a substantial impact on opinions. This implies that in Seremban, inhabitants' opinions of the natural environment and the social advantages of agrotourism are not important in molding their attitudes, but perceptions of tourism infrastructure and constraints have no substantial impact on their attitudes towards agrotourism.

This study offers useful insights for policymakers and tourism stakeholders in Seremban, assisting them in determining which areas are most important in securing citizens' support and cooperation for agrotourism growth. The paper also makes suggestions for future research to overcome its shortcomings and build on its results, especially in terms of investigating less significant factors and widening the scope of agrotourism research in Seremban and related places.

5.1. Theoretical implications

While there exists a substantial body of literature on agrotourism, there is a noticeable scarcity of academic research specifically focusing on residents' attitudes within this field. Addressing this gap, the current study integrates four variables derived from relevant theories and models to examine their correlation with residents' attitudes towards agrotourism. These variables include the natural environment, tourism infrastructure, perceived social benefits, and perceived barriers, drawing insights from the Models for Assessing Tourism Offer and the Social Exchange Theory (SET). Historically, no studies have simultaneously utilized the Model for Assessing Tourism Offer Theory and Social Exchange Theory to investigate the factors influencing residents' attitudes towards agrotourism. The study also adds the importance to the area of tourism and modern reality.

5.2. Managerial implications

Regarding managerial implications, the study provides valuable insights for stakeholders involved in agrotourism development. Firstly, there is a crucial need to invest in conserving and enhancing the natural environment within agrotourism destinations. This entails implementing conservation efforts, promoting ecotourism initiatives, and ensuring responsible land management practices to leverage the inherent attractiveness of these destinations. Moreover, stakeholders should prioritize initiatives that foster positive social interactions and community engagement within agrotourism locales. This could include creating employment opportunities, promoting cultural exchange programs, and supporting community-based tourism endeavors to enhance local well-being and residents' perceptions of agrotourism. Additionally, Tourism infrastructure development plays a significant role in influencing residents' attitudes towards agrotourism. Policymakers and developers should invest in enhancing tourism infrastructure facilities such as road networks, accommodations, and amenities to improve visitor experiences and contribute to the sustainability of agrotourism destinations.

Addressing perceived barriers to agrotourism development is also crucial. While the study suggests that perceived barriers have minimal impacts on residents' attitudes, stakeholders should identify and mitigate existing challenges hindering agrotourism progress, including regulatory hurdles and community resistance. Lastly, fostering effective collaboration and engagement among stakeholders is essential for the successful development of agrotourism destinations. By working together, stakeholders can identify common objectives, address concerns, and develop sustainable strategies that benefit both residents and visitors while preserving the cultural and environmental integrity of agrotourism locales.

5.3. Limitation of the study

This study focuses primarily on Seremban, given its significant involvement in the agricultural sector and its potential as an agrotourism destination. Seremban's unique cultural landscape and agricultural richness attract both domestic and international tourists, making it an emerging agrotourism hub in Malaysia. While the study's focus on Seremban offers valuable insights into residents' attitudes towards agrotourism in this specific context, there is an opportunity to broaden the scope of the research to encompass the entire country.

Data collection in this study employed quantitative methods for their ease of data collection and analysis. However, integrating qualitative methods or incorporating open-ended questions in future research could offer richer insights into residents' feedback and perspectives on agrotourism. Qualitative approaches could provide nuanced understandings of residents' attitudes, motivations, and concerns regarding agrotourism development, complementing the quantitative findings with qualitative depth.

5.4. Recommendations for future research

This study suggests several areas for future researchers to explore. Firstly, the components of natural environment and tourism infrastructure, perceived social

benefit and perceived barriers as developed by Albu and Cimpean (2017) for assessing tourism offerings, should be examined in relation to residents' attitudes towards agrotourism. Additionally, the perceived social benefits and barriers, based on the Social Exchange Theory (SET), should be further analyzed for their impact on residents' attitudes, as noted by Zadel et al. (2014).

Furthermore, future studies ought to extend their focus to encompass a variety of agrotourism settings beyond just mountainous regions. This expansion could involve exploring plains areas such as the Sabah Agriculture Park, Tropical Fruit Farm of Melaka, and Mardi Station, among others, thereby broadening the research context to encompass the entirety of Malaysia. Additionally, while the current study primarily examined residents' attitudes, it is recommended that future research consider these attitudes as a mediating factor and shift the primary focus towards assessing support for agrotourism. Future researchers are also advised to employ both quantitative and qualitative methods in data collection. This dual approach will enrich the research findings by gathering a broader spectrum of information and diverse opinions from respondents. Consequently, data obtained through qualitative methods could provide deeper insights and strengthen the overall results and discussions in the study.

Author contributions: Conceptualization, WCH and ANHH; methodology, WCH, KSN and ANHH; software, WCH, SM and KSN; validation, WCH, SM and MP; formal analysis, SM and ANHH; investigation, WCH and ANHH; resources, WCH and SM; data curation, ANHH; writing—original draft preparation, WCH and ANHH; writing—review and editing, SM and RCH; visualization, WCH, MP and SM; supervision, ANHH and RCH; funding acquisition, WCH and SM. All authors have read and agreed to the published version of the manuscript.

Conflict of interest: The authors declare no conflict of interest.

References

Abdollahzadeh, G., & Sharifzadeh, A. (2014). Rural residents' perceptions toward tourism development: A study from Iran. International Journal of Tourism Research, 16(2), 126–136. https://doi.org/10.1002/jtr.1906

Adeleke, B. O. (2015). Assessment of residents' attitude towards ecotourism in KwaZulu-Natal protected areas. International Journal of Culture, Tourism and Hospitality Research, 9(3), 316–328. https://doi.org/10.1108/ijcthr-12-2014-0102

Albu, R. G., & Cimpean, R. (2017). Opinions on the main elements to be considered in tourism potential assessment models. Bulletin of the Transilvania University of Brasov. Series V: Economic Sciences, 69–78.

Allport, G. W. (1933). Attitudes. In: Handbook of Social Psychology. Winchester, MA, Clark university Press.

Andereck, K., & Mcgehee, N. G. (2008). The attitudes of community residents towards tourism. In: Tourism, Recreation and Sustainability: Linking Culture and the Environment, 2nd ed. CABI Publishing. pp. 236–259.

Andereck, K. L., & Nyaupane, G. P. (2011). Exploring the nature of tourism and quality of life perceptions among residents. Journal of Travel research, 50(3), 248–260. https://doi.org/10.1177/0047287510362918

Ap, J. (1992). Development of a tourism impact scale in the host resident context. In: Proceedings of the 1992 NRPA Leisure Research Symposium held in conjunction with the 1992 National Congress for Recreation and Parks; 15–18 October 1992; Cincinnati, Ohio.

Augoustinos, M., & Walker, I. (1995). Social Cognition: An Integrated Introduction. London: Sage.

Barbieri, C. (2013). Assessing the sustainability of Agri-tourism in the US: a comparison between Agri-tourism and other farm entrepreneurial ventures. Journal of Sustainable Tourism, 21(2), 252–270. https://doi.org/10.1080/09669582.2012.685174

Barbieri, C., & Mshenga, P. M. (2008). The role of the firm and owner characteristics on the performance of Agri-tourism farms. Sociologia Ruralis, 48(2), 166–183. https://doi.org/10.1111/j.1467-9523.2008.00450.x

Barkauska, V., Barkauskiene, K., & Jasinskas, E. (2015). Analysis of macroenvironmental factors influencing the development of rural tourism: Lithuanian case. Social and Behavioral Sciences, 213, 167–172. https://doi.org/10.1016/j.sbspro.2015.11.421

Bernado, D., Valentin, L., & Leatherman, J. (2004). Agri-tourism: if we build it, will they come? Available online: http://atoz.ebsco.com.ez.sun.ac.za/customization/tab/653?tabID=6264 (accessed on 14 March 2024).

Bogardus, E. S. (1931). Fundamentals of social psychology, 2nd ed. New York: Century.

Busby, G., & Rendle, S. (2000). The transition from tourism in farms to farm tourism. Tourism Management, 21, 635–642.

Bwana, M. A., Olima, W. H. A., Andika, D., et al. (2015). Agri-tourism: Potential socio-economic impacts in Kisumu County. IOSR Journal of Humanities and Social Science, 20(3), 78–88.

Chave, E. J. (1928). A new type of scale for measuring attitude. Religious Education, 23, 364–369.

Chin, C. H. (2022). Empirical research on the competitiveness of rural tourism destinations: A practical plan for rural tourism industry post-COVID-19. Consumer behavior in tourism and hospitality, 17(2), 211–231. https://doi.org/10.1108/cbth-07-2021-0169

Choi, H. C., & Murray, I. (2010). Resident attitude toward sustainable community tourism. Journal of Sustainable Tourism, 18(4), 575–594. https://doi.org/10.1080/09669580903524852

Choong, H. X., Goh, K. L., Koo, S. L., et al. (2018). Factors affecting residents' attitude towards agrotourism: A case study in Cameron Highlands [PhD thesis]. UTAR.

Chuang, S. T. (2010). Rural tourism: Perspectives from Social Exchange Theory. Social Behaviour and Personality, 38(10), 1313–1322. https://doi.org/10.2224/sbp.2010.38.10.1313

Cook, K., Molm, L. D., & Yamagishi, T. (1993). Exchange relations and exchange networks: recent development. In: Berger, J., & Zelditch, M. (editors). Theoretical Research Program. CA: Stanford University Press.

Crawford, D. W., & Godbey, G. (1987). Reconceptualizing barriers to family leisure. Leisure sciences, 9(2), 119–127. https://doi.org/10.1080/01490408709512151

Cunningham, J., & Gardner, E. M. (2007). Power, effect and sample size using GPower: practical issues for researchers and members of research ethics committees. Evidence-Based Midwifery, 5(4), 132–136.

Danish, & Wang, Z. (2018). Dynamic relationship between tourism, economic growth, and environmental quality. Journal of Sustainable Tourism, 26(11), 1928–1943. https://doi.org/10.1080/09669582.2018.1526293

De Lucia, C., Pazienza, P., & Balena, P. (2021). How does ICT influence residents' attitudes towards tourism as a driver of development? A generalised ordered logistic regression analysis: ICT for tourism as driver of development in lagging behind regions. International Journal of Tourism Research, 23(6), 1126–1150. https://doi.org/10.1002/jtr.2473

Deepthi, P. V., & Davy, J. (2017). Farmers' perception towards development of Agri-tourism in Kerala. International Journal of Agriculture, 128, 446–454.

Demirezen, B. (2020). Agro Tourism in Turkey. International Journal of Health Management and Tourism, 5(1), 64–75. https://doi.org/10.31201/ijhmt.696185

Dogra, R., & Gupta, A. (2012). Barriers to community participation in tourism development: empirical evidence from a rural destination. South Asian Journal of Tourism and Heritage, 5(1), 129–141.

Draugalis, J. R., & Plaza, C. M. (2009). Best practices for survey research reports revisited: implications of target population, probability sampling, and response rate. American Journal of Pharmaceutical Education, 73(8), 142. https://doi.org/10.5688/aj7308142

Du, J., Zhao, B., & Feng, Y. (2024). Spatial distribution and influencing factors of rural tourism: A case study of Henan Province. Heliyon, 10(7), e29039. https://doi.org/10.1016/j.heliyon.2024.e29039

Dwyer, L., & Kim, C. (2003). Destination competitiveness: determinants and indicators. Current issues in tourism, 6(5),369–414. https://doi.org/10.1080/13683500308667962

Echtner, C. M., & Ritchie, J. R. B. (2003). The Meaning and Measurement of Destination Image. Journal of Tourism Studies, 14(1), 37–48.

Flanigan, S., Blackstock, K., & Hunter, C. (2014). Agritourism from the perspective of providers and visitors: a typology-based study. Tourism Management, 40, 394–405. https://doi.org/10.1016/j.tourman.2013.07.004

Eshun, G. (2014). The nexus of Agrotourism and Marketing: A case study of poultry farms in Kumasi Metropolis, Ghana. African Journal of Hospitality, Tourism and Leisure, 3(2), 1–12.

Flannelly, K. J., & Jankowski, K. R. B. (2014). Research designs and making causal inferences from healthcare studies. Journal of Health Care Chaplaincy, 20, 25–38. https://doi.org/10.1080/08854726.2014.871909

Gallarza, M. G., Saura, I. G., & Garcia, H. C. (2002). Destination image: Towards a conceptual framework. Annals of Tourism Research, 29(1), 56–78.

Gavurova, B., Belas, J., Valášková, K., et al. (2021). Relations between infrastructure innovations and tourism spending in developed countries: A macroeconomic perspective. Technological and Economic Development of Economy,27(5), 1072–1094. https://doi.org/10.3846/tede.2021.15361

Getz, D. (1994). Impacts of tourism on residents' leisure: concepts, and a longitudinal case study of Spey Valley, Scotland. Journal of Tourism Studies, 4(2), 33–44.

Gilbert, D., & Hudson, S. (2005). Small tourism accommodation distribution patterns in Canada. In: Proceedings of the ICEB 2005 Proceedings; Hong Kong, SAR China.

Harill, R. (2004). Residents' attitudes toward tourism development: A literature review with implications for tourism planning. Journal of Planning Literature, 18(3), 251–266. https://doi.org/10.1177/0885412203260306

Hasani, A., Moghavvemi, S., & Hamzah, A. (2016). The impact of emotional solidarity on residents' attitude and tourism development. PloS one, 11(6), e0157624. https://doi.org/10.1371/journal.pone.0157624

Hitzig, N. B. (2004). Elements of sampling: The population, the frame, and the sampling unit. The CPA Journal, 30–33.

Huong, P. M., & Lee, J. H. (2017). Finding important factors affecting local residents' support for tourism development in Ba Be National Park, Vietnam. Forest Science and Technology, 13(3), 126–132. https://doi.org/10.1080/21580103.2017.1354337

Iakovidou, O. (2019). Adapting new technologies of exposure and promotion for agrotourism enterprises with comparative evaluations. Asian Journal of Agriculture and Rural Development, 9(2), 274–283. https://doi.org/10.18488/journal.1005/2019.9.2/1005.2.274.283

Inskeep, E. (1991). Tourism planning: An integrated and sustainable development approach. New York: Van Nostrand Reinhold.

Jaunis, O., Mojiol, A. R., & Kodoh, J. (2022). Agrotourism in Malaysia: A Review on Concept, Development, Challenges and Benefits. Transactions on science and technology, 9(2), 77–85.

Johnston, M. P. (2014). Secondary data analysis: A method of which the time has come. Qualitative and Quantitative Methods in Libraries, 3, 619–626.

Jorabkova, J., Majstrikova, L., &Kozolka, T. (2016). Financial Supporting Tools of Rural Tourism Development in Nitra Self-Governing Region. The Journal of Mendel University in Brno, 8(2), 123–134. https://doi.org/10.1515/euco-2016-0010

Kang, S. K., & Lee, J. (2018). Support of marijuana tourism in Colorado: A residents' perspective using social exchange theory. Journal of Destination Marketing & Management, 9, 310–319. https://doi.org/10.1016/j.jdmm.2018.03.003

Kiper, T. (2011). Land sure planning regarding sustainable development through Agri-tourism: Sarkoy example. Journal of Agricultural Biotechnology and Sustainable Development, 3(8), 171–181.

Kothari, C. R. (2009). Research methodology: Methods and techniques, 2nd ed. New Delhi: New Age International (P) Ltd.

Kunasekaran, P., Ramachandran, S., Yacob, M. R., & Shuib, A. (2011). Development of farmers' perception scale on agrotourism in Cameron Highlands, Malaysia. World Applied Sciences Journal, 12(10–18).

Lee, C., & Chew-Ging, L. (2017). The evolution of development planning in Malaysia. Journal of Southeast Asian Economies, 436–461. https://doi.org/10.1355/ae34-3b

Lepp, A. (2007). Residents' attitude towards tourism in Bigodi village, Uganda. Tourism Management, 28, 876–885. https://doi.org/10.1016/j.tourman.2006.03.004

Lim, T. Y., Leong, C. M., Lim, L. T. K., et al. (2023). Young adult tourists' intentions to visit rural community-based homestays. Young Consumers, 24(5), 540–557. https://doi.org/10.1108/yc-11-2022-1637

Liu, J. C., & Var, T. (1986). Resident attitude toward tourism impacts in Hawaii. Annals of Tourism Research, 13(2), 193–214.

Liu, X., Wider, W., Fauzi, M. A., et al. (2024). The evolution of smart hotels: A bibliometric review of the past, present and future trends. Heliyon, 10(4), e26472. https://doi.org/10.1016/j.heliyon.2024.e26472

Mansor, N., Rashid, M. K., Mohamad, Z., & Abdullah, Z. (2015). Agrotourism potential in Malaysia. International Academic Research Journal of Business and Technology, 1(2), 37–44.

Mao, N., Grunfeld, H., DeLacy, T., & Chandler, D. (2014). Agriculture and tourism linkage constraints in the Siem Reap-Angkor region of Cambodia. Tourism Geographies, 16(4), 669–686. https://doi.org/10.1080/14616688.2014.915878

Marzuki, A. (2012). Local residents' perceptions towards economic impacts of tourism development in Phuket. Tourism: An International Interdisciplinary Journal, 60(2), 199–212.

Mazlan, N., & Juraimi, A. S. (2014). Development and challenges of Agri-tourism in Malaysia. Journal of the International Society for Southeast Asian Agricultural Science, 20(1), 131–138.

McLeod, S. (2009). Attitude and Behavior. Available online: https://www.simplypsychology.org/attitude.html (accessed on 2 March 2018).

Ministry of Tourism, Arts and Culture Malaysia. (2018). Available online: http://www.motac.gov.my/en/ (accessed on 29 March 2018).

Moghavvemi, S., Woosnam, K. M., Paramanathan, T., et al. (2017). The effect of residents' personality, emotional solidarity, and community commitment on support for tourism development. Tourism Management, 63, 242–254. https://doi.org/10.1016/j.tourman.2017.06.021

Mohamad, Z., Ramli, N., Muslim, A. M., & Yii, S. H. (2017). Relationship between tourism attractiveness and marine park sustainability. International Review of Management and Marketing, 7(2), 218–220.

Munan, H. (2001). The Changing Face of Malaysian Crafts, Barbara Leigh. Kuala Lumpur, Oxford University Press, The Asia Collection, 2000, 124 p. Moussons. Recherche en sciences humaines sur l'Asie du Sud-Est, (4), 149–151

Munhurrun, P. R., & Naidoo, P. (2011). Residents' Attitude toward perceived tourism benefits. International Journal of Management and Marketing Research, 4(3), 45–56.

Muresan, I. C., Oroian, C. F., Harun, R., et al. (2016). Local residents' attitude toward sustainable rural tourism development. Sustainability, 8(1), 100. https://doi.org/10.3390/su8010100

Musa, G., & Thirumoorthi, T. (2016). Tourism in Malaysia. In: The Routledge handbook of tourism in Asia. Routledge. pp. 184–200.

Magri-Harsich, G., Fusté-Forné, F., Fernandes, C., & Vidal-Casellas, D. (2024). Artisanal food production in rural Argentina: Finding solace in cheese tourism? International Journal of Gastronomy and Food Science, 35, 100888. https://doi.org/10.1016/j.ijgfs.2024.100888

Maziliauske, E. (2024). Innovation for sustainability through co-creation by small and medium sized tourism enterprises (SMEs): Socio-cultural sustainability benefits to rural destinations. Tourism Management Perspectives, 50, 101201. https://doi.org/10.1016/j.tmp.2023.101201

Nam, J., Ekinci, Y., & Whyatt, G. (2011). Brand equity, brand loyalty and consumer satisfaction. Annals of Tourism Research, 38(3), 1009–1030. https://doi.org/10.1016/j.annals.2011.01.015

Nawawi, N. B., Syamsudin, S. B., & Andin, C. (2020). Community-Based Tourism Through Cooperatives in Sabah, Malaysia. In: Cooperatives and Social Innovation: Experiences from the Asia Pacific Region. Springer Singapore. pp. 63–77.

Nunkoo, R., & Ramkissoon, H. (2011). Developing a community support model for tourism. Annals of tourism research, 38(3), 964–988. https://doi.org/10.1016/j.annals.2011.01.017

Paimin, N. F., Modilih, S., Mogindol, S. H., et al. (2014). Community participation and barriers in rural tourism: A case study in Kiulu, Sabah. SHS Web of Conferences, 12, 01003. https://doi.org/10.1051/shsconf/20141201003

Panasiuk, A. (2007). Tourism infrastructure as a determinant of regional development. EkonomikaIrVadyba: AktualijiosIrPerspeektyvos, 1(8), 212–215.

Paresh, V. J., & Milind, B. B. (2012). Agro-tourism: A specialized rural tourism: Innovative product of rural market. International Journal of Business and Management Tomorrow, 2(1), 1–12.

Pedreira, B. C. C. G., & Fidalgo, E. C. C. (2017). Comparative study on the potential of Agri-tourism in two Brazilian municipalities. InvestigacionesGeograficas, 68, 133–149. https://doi.org/10.14198/ingeo2017.68.08

Perdue, R. R., Long, P. T., & Allen, L. (1987). Rural resident tourism perception and attitude. Annals of Tourism Research, 14(3), 420–429. https://doi.org/10.1016/0160-7383(87)90112-5

Radović, G. (2020). Underdevelopment of rural tourism in Serbia: Causes, consequences and possible directions of development. Ekonomika poljoprivrede, 67(4), 1337–1352. https://doi.org/10.5937/ekopolj2004337r

Ruiz-Ballesteros, E., & González-Portillo, A. (2024). Limiting rural tourism: Local agency and community-based tourism in Andalusia (Spain). Tourism Management, 104, 104938. https://doi.org/10.1016/j.tourman.2024.104938

Ribeiro, M. A., Pinto, P., Silva, J. A., & Woosnam, K. M. (2017). Residents' attitude and the adoption of pro-tourism behaviors: The case of developing island countries. Tourism Management, 61, 523–537. https://doi.org/10.1016/j.tourman.2017.03.004

Sanchez, A. V., Bueno, N. P., & Mejia, M. A. P. (2011). Explaining residents' attitude to tourism: Is a universal model possible? Annals of Tourism Research, 38(2), 460–480. https://doi.org/10.1016/j.annals.2010.10.004

Sekaran, U., & Bougie, R. (2016). Research methods for business: A skill building approach. John Wiley & Sons.

Sharp, J., & Adua, L. (2009). The social basis of agro-environmental concern: Physical versus social proximity. Rural Sociology, 74(1), 56–85. https://doi.org/10.1526/003601109787524061

Soboll, A., & Schmude, J. (2011). Simulating tourism water consumption under climate change conditions using agent-based modeling: the example of ski areas. Annals of the Association of American Geographers, 101(5), 1049–1066. https://doi.org/10.1080/00045608.2011.561126

Sonchaem, W., Phuditthanawong, W., Hutacharoen, R., & Hinjiranan, P. (2017). Influential factors on tourism potential of Buddhist temples: Case study of Buddhist temples in cultural conservation zone of Bangkok Metropolitan Administration (Rattanakosin and Thonburi). Kasetsart of Social Sciences, 1–6. https://doi.org/10.1016/j.kjss.2017.11.002

Taherdoost, H. (2016). Sampling methods in research methodology; How to choose a sampling technique for research. International Journal of Academic Research in Management, 5(2), 18–27.

Tiraieyari, N., & Hamzah, A. (2012). Agri-tourism: Potential opportunities for farmers and local communities in Malaysia. African Journal of Agricultural Research, 6(31), 4357–4361.

Turner, A. G. (2003). Sampling frames and master samples. United Nations Secretariat; unpublished manuscript.

Viglia, G., & Abrate, G. (2017). When distinction does not pay off—Investigating the determinants of European Agri-tourism prices. Journal of Business Research, 80, 45–52. https://doi.org/10.1016/j.jbusres.2017.07.004

Vyas, N., Kumari, B., &Sharma, P. (2014). Adventure Tourism in Bilaspur: A Framework for Assessment and Strategic Development. International Journal of Innovative Science and Research Technology, 9(3). https://doi.org/10.38124/ijisrt/IJISRT24MAR225

World Population Review. (2023). Available online: https://worldpopulationreview.com/world-cities/seremban-population (accessed on 2 April 2024).

Zadel, Z., Ivančić, I.& Ines Čevapović, I. (2014). Residents' attitudes towards tourism potential of small rural city of Požega. In: Proceedings of the 22nd Biennial International Congress Tourism & Hospitality Industry 2014; May 2014. pp. 174–188.

Zhang, Y., Zhang, J., Ye, Y., et al. (2016). Residents' Environmental Conservation Behaviors at Tourist Sites: Broadening the Norm Activation Framework by Adopting Environment Attachment. Sustainability, 8(6), 571. https://doi.org/10.3390/su8060571