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## **SUSTAINABLE AGE FRIENDLY TOURISM DEVELOPMENT ASSESSING INFRASTRUCTURE AND ELDERLY MOBILITY IN PENANG, MALAYSIA**

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### **Abstract:**

Penang's population is changing, with an increase in the elderly. This study examines the with a focus on the consequences for mobility and infrastructure. The objectives are to identify the infrastructural needs of elderly tourists, assess the effectiveness of current policies, and propose enhancements to foster an inclusive tourism environment. Employing a qualitative methodology, the research involved in-depth interviews with 15 stakeholders, including government officials, urban planners, tourism operators, and elderly community representatives. Data were analyzed thematically to extract key insights related to accessibility, transportation, and service provision for elderly tourists. The results show that although Penang has taken a number of steps, including the Age Friendly City project and the incorporation of universal design principles in public infrastructure, difficulties still exist. Elderly visitors' mobility and general experience are hampered by problems like poor pedestrian walkways, few public transportation options, and inadequate signage. To properly serve the senior population, tourist staff members also require specialized training. This study complements on sustainable tourism development by offering stakeholders and policymakers evidence-based suggestions. It emphasizes how crucial inclusive planning is to improving senior citizens quality of life and establishing Penang as a top age-friendly travel destination.

### **Keywords:**

Elderly, Age-Friendly, Tourism Development, Infrastructure, Mobility

## Introduction

Malaysia is experiencing a demographic shift, with individuals aged 60 and above projected to constitute 15% of the population by 2030 (Department of Statistics Malaysia). Penang is experiencing a significant demographic change, with the elderly population steadily increasing. As of 2020, 14.9% of Penang's population was aged 60 and above, and projections indicate this will rise to 26.2% by 2040, making it the state with the highest proportion of elderly residents in Malaysia (Malaysia Healthy Ageing Society, 2023). This demographic change presents both opportunities and challenges, particularly in the realm of tourism, where the need for age-friendly infrastructure and services is becoming increasingly critical.

There are still gaps in areas like transportation, walking infrastructure, and public amenities even though Penang has started a number of initiatives to improve accessibility for the elderly, such as the creation of age-friendly parks and the implementation of universal design principles in public housing (Penang Institute, 2022). Elderly inhabitants frequently experience mobility problems, have trouble obtaining services, and have limited access to age-friendly public transportation and infrastructure, according to studies (Institute for Democracy and Economic Affairs, 2024). These issues have an impact on senior citizens' quality of life as well as their engagement in tourism-related activities, which may enhance their well-being and social inclusion (Yusoh et al., 2023).

With an emphasis on identifying gaps and assessing the efficacy of present regulations, this research attempts to evaluate the infrastructure and mobility needs of senior visitors in Penang. The goals are to determine the infrastructure requirements of senior travelers, evaluate the efficacy of existing regulations, and suggest improvements to promote an inclusive travel environment. In order to ensure that Penang continues to be a welcome destination for all tourists, regardless of age, the findings are anticipated to offer policymakers and stakeholders useful insights in designing strategies that promote sustainable and age-friendly tourism (Rashid et al., 2022).

## Literature Review

There are five points will be discussed in Literature review covering the aspects listed below.

### *The Imperative of Age Friendly Tourism*

The percentage of elderly adults is rising quickly, causing a major shift in the global demographic view. According to estimate, 16% of the global population will be 65 or older by 2050, up from 9% in 2019 (World Health Organization @ WHO, 2020). The need for age-friendly tourism development is highlighted by this demographic change which ensure that travel experiences are sustainable, inclusive, and accessible for senior citizens.

Age-friendly travel not only meets the needs of older travelers but also helps the broader goals of sustainable development by promoting social engagement, economic expansion, and cultural preservation. Elderly friendly infrastructure and mobility solutions must be developed in order to provide an inclusive tourism environment.

### *Infrastructure: Foundations of Age Friendly Tourism*

Age friendly tourism infrastructure is given priority in developed nations in order to build environments that satisfy the needs of senior tourists. For example, a "Good Practices for

Senior Tourism" catalogue created by the European Union's Tourage project provides recommendations for accessible lodging, transportation, and senior-specific recreational activities (European Union, 2019). Comparably, accessible public transit, senior discounts, and lodgings created with senior travellers in mind are all part of Canada's dedication to age-friendly tourism (Times of India, 2024).

On the other hand, emerging nations frequently struggle with little resources and fast urbanization, which can make it difficult to build infrastructure that is age friendly. Nonetheless, some countries are making progress. For instance, Iran is testing senior tourism programs in provinces including Tehran, Isfahan, and Gilan with the goal of increasing the number of age-friendly travel options available across the country (Travel & Tour World, 2025).

The Penang Island City Council (MBPP) is spearheading initiatives in Malaysia to make Penang an age friendly city by 2025. Public transportation upgrades, improved sidewalks, and the use of universal design principles in public areas are examples of initiatives (Buletin Mutiara, 2024). These changes demonstrate the tourism industry's dedication to meeting the requirements of senior citizens.

### ***Mobility: Ensuring Accessible Travel for Seniors***

An essential component of age friendly travel is mobility, which includes accessible, convenient, and safe modes of transportation for senior citizens. Cities in developed areas, such as Chester, UK, have been praised for their wheelchair accessible public areas, taxis, and buses (The Guardian, 2017). These cities place a high priority on inclusive architecture, making it easier for senior citizens to move about urban areas.

Developing nations frequently struggle to provide elders with sufficient transportation options. However, some are moving forward. For example, Penang's MBPP is investigating new routes, introducing taxis, and improving bus services to promote mobility for senior citizens (Buletin Mutiara, 2024).

### ***Sustainable Age Friendly Tourism: Balancing Development and Preservation***

According to Yusoh et al. (2023), sustainable tourism aims to strike a balance between the needs of tourists and the conservation of cultural and environmental resources. This idea is incorporated into tourism planning in industrialized nations, with an emphasis on fostering cultural heritage and reducing ecological footprints. The World Economic Forum emphasizes that because of their sophisticated infrastructure and resources, high-income economies are in a good position to create sustainable tourism (World Economic Forum, 2024).

Sustainable tourism initiatives in underdeveloped nations may be hampered by issues like overtourism and environmental damage. In order to alleviate traffic congestion and encourage sustainable transportation options, Penang's MBPP intends to develop the Laluan Mutiara Light Rail Transit (LRT) project (Penang2030, 2024).

### ***Research Gaps and Contextual Relevance***

Age friendly tourist infrastructure has advanced significantly in affluent nations, but little research has been done on developing countries, especially in Southeast Asia. This disparity is particularly evident in Malaysia, where there are little studies on the unique requirements and

preferences of senior travelers. Moreover, the literature currently in publication frequently ignores the incorporation of sustainable practices in the development of age friendly tourism.

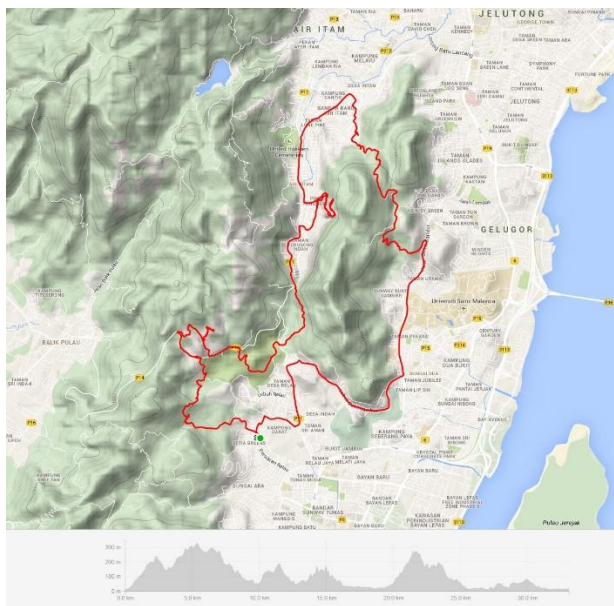
By analysing the mobility and infrastructure requirements of senior visitors in Penang, Malaysia, and evaluating the efficacy of present regulations, this study seeks to close these gaps. Penang will become a model for age friendly travel destinations in the area attributable to the findings, which will give stakeholders and policymakers important information for creating strategies that support inclusive and sustainable tourism.

### Research Methodology

The infrastructure and mobility requirements of senior citizens in Taman Tun Sardon, Penang, are investigated in this study area, using a qualitative research design. Qualitative approaches are very useful for capturing people's complex experiences and perspectives, particularly when it comes to comprehending how their daily lives and interactions with tourism infrastructure are influenced by environmental conditions.

### Study Area: Taman Tun Sardon, Penang

Taman Tun Sardon is a residential area in Gelugor, which is part of George Town, Penang. It was built in the 1980s and consists of 22 affordable five story walk up apartments intended for residents with lower incomes. Kampung Kastam to the north and Brown Garden to the south, along with Jalan Hilir Pemancar, form the boundaries of the region.



**Figure 1: Location and Housing of Taman Tun Sardon in Penang**

Source: Mapping from Google Maps

Purposive sampling was used to choose participants, focusing on those 60 years of age and older who had lived in Taman Tun Sardon and the adjacent areas for at least five years. This requirement guarantees that participants have a great deal of familiarity with the area transportation and infrastructure. Community centers and local groups were used to recruit a total of fifteen participants, eight of whom were female and seven of whom were male.

### ***Data Collection and Data Analysis***

Semi structured face to face interviews in Bahasa Malaysia were used to gather data for this study so that participants could clearly and easily share their ideas and experiences. With the participants informed consent, each 60 to 90 minute interview. The interview guide was created to investigate a number of important topics pertinent to the studys goals, such as individual experiences with the community infrastructure, such as sidewalks, public transportation, and tourist amenities; difficulties getting around and accessing necessary services; opinions about how age friendly the area is; and recommendations for improving assistance for senior travelers. Field notes were obtained during the interviews in addition to write the clues and contextual information that could improve the process of interpreting the data.

To make analysis easier, the field notes of the interviews were verbatim transcribed and then translated into English. To method find trends and emerging themes in the qualitative data, a thematic analysis methodology was used. In order to fully comprehend the content, the transcripts were read several times during the first familiarization phase of the analytical process. The coding of noteworthy quotes and text passages that were pertinent to the study is goals came next. After classifying the generated codes, underlying themes were found. In order to make sure the themes appropriately and logically reflected the viewpoints and experiences of the participants as recorded in the data, they were lastly examined and improved.

To enhance the credibility of the findings, peer debriefing sessions were conducted with fellow researchers, and member checking was performed by sharing summaries of the findings with participants for validation.

Ethical approval was obtained, ensuring adherence to ethical standards in research involving human participants. Participants were informed about the study's purpose, their rights, and the voluntary nature of their participation. Confidentiality was maintained by anonymizing personal identifiers in transcripts and reports.

### **Analysis and Discussion**

#### ***The Relationship Between Demographic Factors and Travel Status Among the Elderly***

The study involved 15 elderly participants from Taman Tun Sardon and its surrounding areas. The demographic characteristics are summarized in Table 1 below:

**Table 1: Respondent demographics Demographic Variable**

<b>Demographic Variable</b>	<b>Category</b>	<b>Number of Respondents</b>	<b>Percentage (%)</b>
<b>Gender</b>	Male	8	53.3
	Female	7	46.7
<b>Age Group</b>	60–64 years	4	26.7
	65–69 years	5	33.3
	70–74 years	3	20.0
	75 years and above	3	20.0
<b>Ethnicity</b>	Malay	6	40.0
	Chinese	5	33.3



Demographic Variable	Category	Number of Respondents	Percentage (%)
<b>Marital Status</b>	Indian	4	26.7
	Married	10	66.7
	Widowed	3	20.0
	Divorced	2	13.3
<b>Education Level</b>	No formal education	2	13.3
	Primary education	5	33.3
	Secondary education	6	40.0
	Tertiary education	2	13.3
<b>Duration of Residence</b>	Less than 10 years	3	20.0
	10–19 years	6	40.0
	20 years and above	6	40.0
<b>Travel Status</b>	Active travelers	9	60.0
	Non-travelers	6	40.0

Source: Field data

The percentage of people in Malaysia who are 60 years of age or older is continuously rising, indicating a substantial demographic shift. The Department of Statistics Malaysia projects that by 2030, 15% of the population would be elderly. This shift emphasizes how crucial it is to comprehend how older persons travel, especially in cities like Taman Tun Sardon, in order to guide service delivery and policy.

Malaysia is experiencing a significant demographic shift, with the proportion of individuals aged 60 and above increasing steadily. According to the Department of Statistics Malaysia, the elderly population is projected to constitute 15% of the total population by 2030. This transition underscores the importance of understanding the travel behaviors of older adults, particularly in urban areas like Taman Tun Sardon, to inform policy and service provision.

A study of fifteen senior citizens (60 years of age and older) from Taman Tun Sardon and the surrounding area found a variety of demographic traits. Of the respondents, 40% did not travel, while 60% were frequent travelers who traveled domestically at least once a year. Certain demographic characteristics are linked to travel habits, according to analysis.

Compared to seniors 70 years of age and older, younger seniors (ages 60 to 69) were more likely to travel. This pattern is consistent with research by Saidatulakmal et al. (2019), who found that younger older people are typically more mobile and active. Compared to female respondents, male respondents showed a greater inclination to travel. According to Musa and Sim (2010), who pointed out that elderly women frequently face higher travel restrictions due to caregiving responsibilities and security concerns, this discrepancy may be attributable to traditional gender roles and safety concerns.

Married people were more likely to travel, maybe as a result of their husband support and company. The importance of spouse assistance in helping older individuals travel was highlighted by Ang et al. (2020). Higher educated respondents were more likely to travel.

According to Kamaruddin (2008), education improves awareness and planning skills, which encourages older adults with higher levels of education to travel more. Long term residents (those who had lived there for more than ten years) were more likely to travel, possibly as a result of closer ties to the community and more awareness of travel options. According to Mohd et al. (2019), community involvement has a good impact on older individuals mobility and well being.

Respondents who did not travel mentioned a number of challenges, such as health problems, lack of companionship, and financial limitations. These obstacles are in line with those found in more comprehensive research, such as the National Health and Morbidity Survey 2018, which stated that health and financial difficulties are the main reasons why older people don't travel.

A number of specific ideas are put forth to encourage older people to travel more. First and foremost, the establishment of community based healthcare support services is crucial, especially those targeted at treating chronic diseases, allowing older individuals to travel in a safer and more certain manner. Second, financial incentives like senior citizen discounts or subsidized travel packages can lower financial barriers and promote more engagement in tourism-related activities. Thirdly, the organisation of social programs particularly group travel initiatives can provide companionship and reduce the sense of isolation often experienced by elderly individuals during travel. Lastly, education and awareness efforts, including workshops and informational sessions, should be conducted to equip seniors with the knowledge and skills necessary for effective travel planning and to inform them of available opportunities.

The travel habits of the elderly in Taman Tun Sardon are significantly influenced by demographic considerations. Designing and executing focused interventions that not only encourage active aging but also improve older individuals' general quality of life requires an understanding of these dynamics.

### **Infrastructural Needs of Elderly Tourists**

#### ***Accessibility of Pedestrian Pathways***

A significant concern raised by 9 out of 15 respondents pertained to the accessibility of pedestrian pathways in tourist areas. They highlighted issues such as uneven surfaces, lack of ramps, and inadequate signage, which hindered safe and comfortable mobility. For instance, Respondent 1, aged 68, shared:

*"I enjoy walking around tourist spots, but sometimes the sidewalks are uneven and lack ramps for wheelchairs. It makes it difficult for me to move safely."*

This sentiment underscores the need for improved pedestrian infrastructure to accommodate the mobility requirements of elderly tourists.

#### ***Availability of Public Amenities***

Ten respondents expressed dissatisfaction with the limited availability of public amenities such as age-friendly toilets, resting areas, and clear signage in tourist locations. The absence of these facilities adversely affected their comfort and convenience during visits. Respondent 2, aged 72, remarked:

*"I often feel tired while walking around, but it's hard to find a place to sit and rest. Also, public toilets are sometimes not suitable for people our age."*

This feedback indicates a pressing need for the provision of adequate and accessible public amenities to enhance the tourism experience for the elderly.

### ***User Friendly Public Transportation***

Elderly travelers demands were not sufficiently met by public transportation options, according to a number of respondents. They found it difficult to use these services because of things like the lack of ramps and wheelchair specific areas. This is consistent with the Penang Island City Council's continuous endeavors to integrate universal and age-friendly design features into all infrastructure developments, including transportation networks.

### ***Safety And Cleanliness***

The respondents also frequently expressed concerns about cleanliness and safety in tourism destinations. To guarantee a comfortable and safe experience, they underlined the significance of clean facilities and well lit surroundings. Studies showing that cleanliness and safety are essential characteristics for senior-friendly locations lend credence to this viewpoint.

### ***Recommendations for Infrastructure Enhancement***

A number of suggestions are made in light of the study is conclusions to deal with the infrastructure issues that Penang senior tourists encounter. First and foremost, to promote safe and accessible movement for senior citizens, pedestrian infrastructure should be enhanced by the methodical construction and upkeep of level sidewalks, barrier free ramps, and conspicuous signs. Additionally, age friendly amenities like assistive equipped restrooms, sufficient rest places, and easily navigable informational displays should be added to public spaces at popular tourist destinations.

Enhancements to public transportation are also crucial, such as adding ramps and areas inside cars for mobility aids, as well as providing transportation staff with specialized training to better meet the needs of senior passengers. Last but not least, creating a safe and welcoming environment that promotes the comfort and welfare of senior tourists depends on upholding strict standards of cleanliness and making sure there is enough illumination in public and tourist places. In line with the state's strategic aims to assist its aging population, putting these suggestions into practice will help Penang develop an inclusive and age-friendly tourism environment.

### ***Current Policies and Proposed Enhancements for Inclusive Tourism in Penang***

The findings from the respondents indicate that while current policies have introduced several initiatives to facilitate the movement of the elderly, there is still room for improvement (Refer Table 2):



**Table 2: Opinion Current Policies**

Respondent	Age	Status	Opinion on Current Policies
Respondent 3 (Woman)	68	Retired Administrative Officer	Needs more elderly friendly parking spaces
Respondent 4 (Man)	72	Retired Teacher	Supports current policies, but more elderly friendly public transport is needed
Respondent 5 (Woman)	65	Small Business Owner	Needs campaigns to educate shopkeepers about elderly needs
Respondent 6 (Man)	70	Retired Military Personnel	Supports the current policies, but public transportation has to be more senior friendly.

Source: Field data

Based on Table 2, Respondent 3 suggested adding more elderly-friendly parking spaces, while Respondent 4 emphasized the need to enhance public transportation that caters to the elderly. Respondent 5 proposed conducting more campaigns to educate shopkeepers about the needs of the elderly. These recommendations are in line with research conducted by Penang Institute, which emphasizes the necessity of enhancing community awareness and transit accessibility in order to establish an inclusive tourism environment for senior citizens. By incorporating respondent dialogues like the above, the research analysis becomes more comprehensive and reflects the genuine perspectives of the elderly regarding current policies in developing age-friendly tourism.

### Analysis Based on Respondent Insights

The insights gathered from respondents reveal both commendable progress and persistent challenges in Penang's policy efforts to foster an inclusive tourism environment for elderly visitors. One of the key issues raised pertains to infrastructure enhancement. Respondent 3 expressed concern over the scarcity of elderly-friendly parking spaces, noting that the lack of convenient parking near major attractions can hinder mobility and overall visitor experience. This observation underscores the need for further infrastructural improvements and is aligned with the Penang Island City Council's (MBPP) ongoing initiatives to incorporate universal design features such as ramps and lifts into public infrastructure to better serve the ageing population.

Accessibility to public transportation also emerged as a central theme among participants. Both Respondent 4 and Respondent 5 highlighted the limited availability of elderly-friendly public transport options, suggesting that current services do not fully accommodate the mobility needs of older adults. For instance, the respondents recommended the introduction of buses equipped with wheelchair-accessible lifts and designated spaces. Their perspectives are consistent with the state's strategic direction to improve the inclusiveness and functionality of its transportation systems for senior citizens.

Additionally, community awareness and education were identified as crucial factors in promoting an age-friendly tourism ecosystem. Respondent 5, for example, advocated for targeted campaigns to educate local shopkeepers on the specific needs and preferences of elderly customers. This suggestion aligns with existing efforts by the Penang Women's Development Corporation (PWDC) to increase public awareness and foster a culture of inclusivity within local communities.

Collectively, these insights reflect the lived experiences of elderly individuals and offer valuable feedback that can inform ongoing and future policy enhancements aimed at establishing Penang as a truly age-friendly tourism destination.

### Conclusion

This study assessed the infrastructural and mobility needs of elderly tourists in Penang and evaluated the effectiveness of existing policies in promoting age-friendly tourism. The findings indicate that, while initiatives such as age-friendly infrastructure and community engagement programs have been implemented, significant challenges remain. These include limited accessibility, insufficient elderly-friendly public transportation, and low awareness among local businesses regarding the needs of older adults.

Based on these findings, key recommendations to enhance age-friendly tourism in Penang include infrastructure improvement; elderly-friendly public transportation and community awareness and education. The integrated implementation of these measures by local authorities, tourism stakeholders, and the community will improve the tourism experience for elderly visitors, support Penang's goal of becoming a fully inclusive and age-friendly destination, and enhance comfort and active participation of older adults in tourism. This study also provides valuable guidance for policy development and sustainable tourism planning that prioritizes the well-being and mobility of older adults.

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