

A Conceptual Framework For Sustaining Penang's Medical Tourism Growth

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Abstract: Medical tourism has become an increasingly important component of Malaysia's healthcare and economic landscape, with Penang standing out as a leading destination in this sector. This paper explores the main drivers behind Penang's success, including its advanced healthcare facilities, cost-effectiveness, and strategic location. The analysis reveals Penang's strong competitive positioning, as it attracts almost half of Malaysia's medical tourists and contributes significantly to the state's revenue. Nevertheless, the sector faces mounting challenges such as rising competition in the region, shifting patient expectations, and the impacts of the post-pandemic environment. Addressing these issues will require sustained efforts in infrastructure upgrades, innovative marketing, and regulatory enhancements. This conceptual paper introduces a framework that links state development performance, private healthcare services, and infrastructure investment to support the continued growth of Penang's medical tourism. It emphasizes the importance of collaboration between public and private stakeholders to ensure Penang remains globally competitive in this evolving industry.

Keywords: *Medical Tourism, Penang, Conceptual Framework, Integrating State Development Performance, Private Healthcare Services, Infrastructure Development*

1. Introduction

Medical tourism involves individuals traveling to foreign countries to obtain medical treatments, often seeking higher-quality care, specialized services, or more affordable options than those available in their home countries. Between 2020 and 2024, Malaysia has made significant strides in establishing itself as a premier destination for medical tourism. In 2023, the country recorded over one million health tourist arrivals, marking a 15% increase from 2022. This growth contributed to a revenue of RM2.25 billion in 2023, with projections to reach RM2.4 billion by the end of 2024, and is expected to grow by up to 20% in 2025. (MIDA, 2024). The Malaysia Healthcare Travel Industry Blueprint 2021–2025 has been instrumental in this progress, aiming to provide a cohesive end-to-end experience for health tourists. Key components of the blueprint include medical services, teleconsultation, access to information, insurance, accommodation, and immigration, all designed to enhance the Malaysian healthcare brand (MIDA, 2024).

The medical tourism industry in Malaysia is booming and has been highlighted as a major catalyst for economic development. Medical tourism in Malaysia has experienced significant growth between 2020 and 2025, driven by factors such as affordability related to cost savings, which means the treatment bills are still cheaper and hospitals and staff who are skilled in health services compared with other countries in the Asia region (Thoo et al. 2020). Malaysia has made notable strides in medical tourism. In 2023, the industry generated over RM2.25 billion in revenue, indicating a strong upward trajectory. The Malaysian Healthcare Travel Council (MHTC) reported that the country welcomed over half a million medical tourists in the first half of 2024, contributing significantly to the overall revenue.

Malaysia has strengthened its reputation as a medical tourism hub due to its high-quality healthcare services, cost competitiveness, modern infrastructure, and favorable geographic positioning. The country provides an extensive array of medical procedures, such as cardiology, fertility treatments, oncology, orthopaedics, and cosmetic surgery, drawing international patients who seek affordable yet top-tier healthcare (Business Today, 2024). Ongoing government initiatives focused on healthcare innovation, infrastructure upgrades, advanced technology, and workforce training have further reinforced Malaysia's role as a leading destination for global healthcare collaborations and investment opportunities (MIDA, 2024).

Penang, despite being Malaysia's second smallest state by land mass, has demonstrated remarkable economic performance in recent years. In 2023, the state's GDP reached approximately RM128.593 billion (US\$28.016 billion), with a growth rate of 3.3%. Notably, Penang's GDP per capita stood at RM72,586 (US\$15,814), surpassing the World Bank's high-income threshold and ranking highest among Malaysian states.

State development performance

Penang is currently the top destination choice for medical tourists coming to Malaysia. With about 50% of all medical tourists going there for treatment. Penang has become the priority for medical tourists because of value for money, well-developed infrastructure and health care ecosystem, direct flight connection and tourist destination (Alvarez & Marsal, 2024). According to Wai (2025), Penang will enhance promotion of its medical tourism to several countries such as South Korea, Japan, Taiwan, Hong Kong and China. Overall, Malaysia's strategic initiatives and collaborative efforts between the public and private sectors have positioned the country as a leading destination for medical tourism, with aspirations to become the top global healthcare destination by 2025.

However, increasing competition from other regional destinations, evolving patient preferences, and the need for continuous investment in infrastructure, technology, and marketing strategies pose a challenge for Penang State to sustain itself as one of the destinations of medical tourism. Furthermore, the post-pandemic landscape has reshaped global travel patterns and healthcare demands, necessitating a reevaluation of Penang's positioning in the medical tourism sector (Yap et al., 2021). Addressing these issues is crucial to ensure that Penang maintains its competitive edge and contributes significantly to the state's economic development. The increasing influx of medical tourists can strain existing infrastructure, including healthcare facilities, transportation, and accommodation. Ensuring that infrastructure development keeps pace with demand is crucial to maintain service quality and patient satisfaction and the biggest allocation of for financial to set up and developing related to medical tourism. Regulatory and policy challenges that relate to navigating visa entry and extension requirements for patients and their caregivers, as well as enhancing flight connectivity, are essential to improve Penang's attractiveness as a medical tourism destination. Addressing these structural issues is vital for sustained growth. Addressing these challenges through strategic planning, investment in infrastructure, regulatory reforms, and sustainable development practices is essential for Penang to maintain and enhance its position as a premier medical tourism destination in 2025 and beyond.

2. Literature Review

State development performance

State development performance refers to the evaluation of a state's economic growth, infrastructure development, social progress, and overall improvement in the quality of life for its residents over a specific period. Key indicators often include Gross Domestic Product (GDP) growth, revenue collection, investment inflows, and advancements in public services. State development performance refers to the effectiveness with which a state achieves economic growth, social progress, and improved living standards for its residents.

Several factors contribute to this performance, such as political stability, government effectiveness, innovation and learning, resource management, economic policies and planning, investment in infrastructure and social protection and inclusivity. According to Malaysiakini, 2022 mentioned that political stability is a main factor that contributes to the state's development performance. An elaborate, stable political environment fosters investor confidence and enables consistent policy implementation, which are crucial for economic growth. Studies have shown that increased political stability correlates with higher economic growth rates. This is also supported by government effectiveness, which focuses more on efficient governance, characterized by effective public services and sound policy formulation, significantly impacts economic performance. An increase in government effectiveness has been linked to substantial economic growth.

The next factor that contributes to the state of development performance is innovation and learning. Investments in innovation and continuous learning enhance the capabilities of local authorities, leading to improved performance (Siti Mardinah et al, 2021). It's also supported by resource management, which describes the availability and efficient utilization of resources, including infrastructure, human capital, and natural resources, that are fundamental to state development. Proper management of these resources supports sustainable growth and development (Siti Mardinah et al, 2021).

For instance, Penang has significantly advanced its medical tourism sector between 2020 and 2025 through strategic innovations and collaborative efforts, such as Meditech City Development in Bandar Cassia Batu Kawan in 2023 provided world world-class medical tourism destination, featuring specialist hospitals, rehabilitation centers, and educational institutions. The development is expected to generate approximately 12,000 jobs over a decade, enhancing Penang's status as a leading healthcare destination (Sinar Daily, 2023).

Economic policies and planning will also be a factor in state development performance, including strategic economic planning, such as the implementation of industrial master plans, which guide states toward sustainable development. For example, Malaysia's New Industrial Master Plan 2023 (NIMP 2030) focuses on strategic investment and workforce development to transform the country into a high-income, developed nation by 2030 (The Star, 2023). The last factor is investment in infrastructure: Developing infrastructure, including transportation, communication, and utilities, facilitates economic activities and attracts investments. States like Johor, Sarawak, and Penang have demonstrated that substantial infrastructure investments contribute significantly to economic growth (The Star, 2024). For conclusion, state the development performance of Penang based on the technological and tourism industry, especially in medical services, which will enhance and growth of the economy of Penang in Malaysia.

Medical tourism has significant implications for state development performance, impacting economic growth that generate medical tourism generates substantial revenue for states through patient spending on healthcare services, accommodation, transportation, and tourism activities. This influx of capital can stimulate local economies, create jobs, and boost related industries such as hospitality and retail (Connell, 2013).

Private healthcare services

Private healthcare services refer to medical and health-related services provided by organizations, institutions, or individuals that operate independently of government funding or public healthcare systems. These services are typically funded through direct payments by patients, private health insurance, or employer-sponsored healthcare plans. They may include a range of services such as diagnostics, treatment, surgery, preventive care, and rehabilitation, often emphasizing personalized care, shorter wait times, and access to advanced medical technologies. Penang, Malaysia, has experienced significant growth in its private healthcare sector between 2020 and 2025, solidifying its status as a leading hub for medical tourism in the region (WHO. 2024).

In Malaysia, the Private Healthcare Facilities and Services Act 1998 (Act 586) describes a private hospital as any facility—excluding government hospitals or institutions—designated for the admission, accommodation, treatment, and care of individuals needing medical or dental services that require hospitalization (Malaysia, 1998). As of 2024, Penang is home to 19 private hospitals, offering a wide range of specialist services. This concentration of private healthcare facilities has been instrumental in attracting medical tourists, particularly from neighboring countries. Penang accounted for 45% of Malaysia's medical tourism revenue in the first half of 2024, contributing approximately RM517.5 million (USD 114 million) to the national total of RM1.15 billion. The most popular private hospital in Penang is listed below:

Table 1: List of private hospitals in Penang

No	Hospital Name	Establish	Total Beds	Contact
1.	Island Hospital	1996	240	308, Macalister Road, 10450 Penang, Malaysia +6042288222
2.	Gleneagles Hospital *JCI Accreditation	1973	227	1, Jalan Pangkor, 10050 Penang, Malaysia +06043376111
3.	Pantai Hospital	1970	190	82 Jalan Tengah, Bayan Baru 11900 Bayan Lepas Penang, Malaysia, +6 04 643 3888
4.	Hope Children's Hospital	2000	20	25 B-D, Jalan Gottlieb 10350 Pulau Pinan, Malaysia, +6 04 228 6557
5.	KPJ Penang Specialist Hospital	1990	236	No 570, Jalan Perda Utama Bandar Perda 14000 Pulau Pinang Malaysia.

Source: <https://www.vaidam.com>

Loo (2021) reported that private healthcare services have significantly contributed to Penang's state development over the past five years, particularly through medical tourism, healthcare expenditure, and infrastructural investments. Penang has established itself as Malaysia's leading medical tourism hub. In 2019, the state attracted approximately 500,000 medical tourists, generating RM750 million in revenue, despite having only 18 private hospitals compared to Selangor's 54 and Kuala Lumpur's 44.

By 2024, Penang's share of Malaysia's medical tourism revenue increased to 45% in the first half of the year, contributing significantly to the national total of RM1.15 billion. This growth has had a substantial economic spillover effect, benefiting sectors such as tourism, transportation, accommodation, and dining (Info Tourism, 2024).

Infrastructure facilities

Infrastructure in private hospital facilities refers to the physical and organizational structures, systems, and resources necessary for delivering healthcare services effectively and efficiently within a private healthcare institution. This encompasses a wide range of components, including buildings and physical spaces, medical equipment, technology infrastructure, utilities and support systems, safety and accessibility features and the last component, human resources and administrative structures (Linda Luxon, 2015). According to Shayama Nagarajan (2018) that mentioned infrastructure facilities are a doctrine of following functions that are related to finance, functional planner, health planner, physical planner, engineer and entrepreneur who look at the vision and vision can be realized through the Need Assessment Survey or NAS.

Private hospital infrastructure in Penang has significantly contributed to the state's development, particularly in the healthcare and medical tourism sectors. Despite having only 18 private hospitals, Penang accounted for RM750 million in healthcare travel revenue from 500,000 patients in 2019, leading Malaysia in this sector (Loo, 2024).

This factor is significant towards state development performance by improving the available infrastructure to attract international patients. It can be done by states investing in healthcare infrastructure, leading to improved facilities, advanced technologies, and higher standards of care. This benefits not only medical tourists but also the local population (Heung et al, 2011).

Competitive Price

Affordability in private hospitals can vary widely depending on the country, region, hospital, and the type of medical service or treatment being provided. However, private hospitals tend to offer higher prices than public ones, mainly due to better amenities, shorter wait times, and access to specialized care. Here are some general factors that affect pricing, such as consultation fees, treatment costs, room charges, diagnostic tests, insurance and geographic variation. According to The Star, in 2024, the prices of private healthcare in Malaysia experienced a significant increase in private hospital fees in Malaysia. Essential services, including temperature checks and wound care, were often billed at premium rates, prompting some patients to turn to public hospitals for more affordable alternatives.

Private hospitals in Malaysia have been striving to balance affordability with sustainability, implementing various measures to mitigate rising medical costs and their impact on patients. According to the Association of Private Hospitals Malaysia (APHM) Factbook 2024 (Alifah, 2024), which describes the private hospitals operate on profit margins of 10% to 15%. Despite an average annual increase of 4% in inpatient bills between 2020 and 2023, this is modest compared to the 12% annual rise in healthcare costs due to medical inflation. Hospitals have absorbed a significant portion of these costs through subsidies and operational efficiencies, thereby reducing the financial burden on patients.

3. Methodology

The conceptual framework for this study is structured around four key constructs that are hypothesized to influence the success and sustainability of medical tourism in Penang: state development performance, private healthcare services, infrastructure and accessibility, and competitive pricing. Each of these constructs is represented by multiple dimensions derived from existing literature and contextual relevance. State

development performance is assessed through indicators such as economic growth (e.g., GDP contribution, job creation, and foreign investment), government policies and incentives supporting the medical tourism sector, and the overall political stability and governance effectiveness that foster a conducive investment and healthcare environment. Private healthcare services are evaluated in terms of the expansion and competitiveness of private hospitals, service quality, affordability, adherence to international accreditation standards, and the presence of strategic partnerships with global healthcare providers. The infrastructure and accessibility construct considers the development of specialized medical hubs like Meditech City in Bandar Cassia, enhancements in transportation and international flight connectivity, as well as the availability of accommodation and tourism support facilities. Lastly, competitive pricing includes measures such as the affordability of medical costs, the value and cost-effectiveness of treatment packages, and the availability of insurance and financial support for international patients.

State Development Performance

- Economic growth indicators (GDP contribution, job creation, foreign investment)
- Government policies and incentives supporting medical tourism
- Political stability and governance effectiveness

Private Healthcare Services

- Expansion and competitiveness of private hospitals
- Service quality, affordability, and accreditation standards
- Strategic partnerships with global healthcare providers

Infrastructure and Accessibility

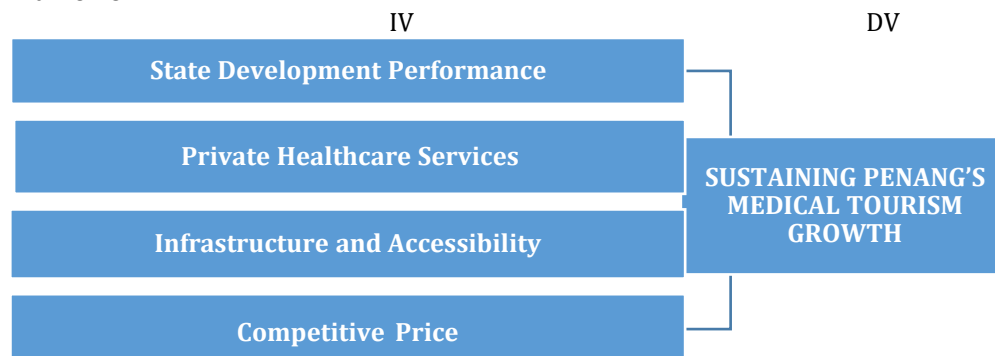
- Development of specialized medical hubs (e.g., Meditech City in Bandar Cassia)
- Transportation and flight connectivity enhancements
- Accommodation and tourism support facilities

Competitive Price

- Affordable medical cost
- Cost-effective medical treatment packages
- Insurance and financial support

This framework provides a multidimensional approach to analyzing the drivers of medical tourism performance and will serve as the basis for developing the survey instrument and testing the hypothesized relationships through quantitative analysis.

Conceptual Framework



4. Conclusion and Recommendations

The conclusion of medical tourism's impact on Penang's state development performance reveals several positive outcomes, contributing to the state's economic growth, infrastructure development, and global reputation. Economic growth dimension was significantly boosted Penang's economy by attracting foreign

patients, increasing revenue in sectors such as healthcare, hospitality, transportation, and retail. This influx of medical tourists enhances local businesses and creates job opportunities, thus improving the state's economic performance. Second, improved healthcare infrastructure related to the demand for high-quality medical services has led to the expansion and upgrading of healthcare facilities in Penang, making the state a medical hub in Southeast Asia. Hospitals and clinics are increasingly investing in advanced technologies and skilled professionals to meet international standards, thus improving overall healthcare services for both locals and tourists. Last, affordable prices offered are a challenge to the private hospital to maintain and sustain in a competitive market in Malaysia and Southeast Asia. However, sustained success will depend on strategic planning and addressing potential challenges in a way that supports both growth and sustainability.

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