



## Determinants of Medical Tourism Services in Enhancing Human Resource Development in Thai Hospitals

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### Abstract

The Thai government has emphasized the development of services within the medical tourism sector. This study aimed to examine the design of medical tourism services in hospitals with a focus on enhancing human resource development in this field. A mixed-methods approach was employed, including interviews with 15 specialists and executives, and a survey of 250 respondents. The findings identified 21 underlying variables, which were categorized into three main factors: tourism services, medical services, and support services. Notably, the analysis highlighted that the most critical variables were related to Support, Tourism, and Medical services (STM). The study suggests that the design of tourism services should be carefully tailored to meet the specific needs of medical tourists. In conclusion, aligning medical tourism service design with human resource development strategies can contribute to the sustainable growth of Thailand's medical tourism industry.

**Keywords:** Medical Tourism, Tourist needs, Service designs

**How to cite this article:** Johansson L, Andersson E, Lindgren S, Olsson K. Determinants of Medical Tourism Services in Enhancing Human Resource Development in Thai Hospitals. Asian J Indiv Organ Behav. 2022;2:204-12. <https://doi.org/10.51847/XPpP1VHfWW>

**Received:** 12 September 2022; **Revised:** 02 December 2022; **Accepted:** 05 December 2022

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### Introduction

Medical tourism has gained increasing attention in both academic research and the expansion of the medical industry. It refers to a form of healthcare tourism where individuals travel to medical facilities abroad for treatment or rehabilitation. Such treatments encompass a variety of procedures, including cardiovascular surgery, radiation therapy, organ transplantation, infertility treatments and IVF, cosmetic and plastic surgery, dialysis, as well as dental and eye care [1]. Individuals seeking to combine medical care with leisure activities often show a strong preference for medical tourism. The benefits of medical tourism include access to high-quality and reliable healthcare services, prompt treatment without long waiting times, availability of advanced medical technologies and skilled professionals, opportunities to travel internationally, and more affordable costs [2]. It is widely recognized as a promising avenue for healthcare advancement and an emerging field for investment [3].

Medical tourism services in hospitals are considered a vital component of the tourism sector, with the potential to positively impact a nation's economic growth and stability. Many developing countries, including Thailand, have prioritized the expansion of this sector as it represents a significant source of national income. Strategies have been actively developed to enhance service offerings, reflecting both private sector investments in hotels and hospitals to attract foreign patients, and improvements by associated businesses to promote medical tourism. This focus responds to high-income tourists' preferences



for high-quality and satisfactory healthcare services. Between 2017 and 2020, the medical tourism market in Thailand experienced consistent growth [4].

Aligned with the Thai government's policy to position Thailand as a global medical hub, the medical industry is expected to play a critical role in economic recovery and growth, particularly within the hospital sector. Hospitals stand to benefit from the high-potential medical tourism market [5]. Effective service design, encompassing medical, tourism, and support components, is crucial for enhancing service delivery and reinforcing Thailand's position as a leading medical destination in Asia. However, current hospital services often prioritize medical procedures while giving limited attention to tourism and support activities, resulting in unmet needs for medical tourists. Consequently, it is essential to focus on developing comprehensive service designs that identify the necessary competencies for human resource development. This approach ensures the sustainability of hospital operations and strengthens the long-term growth of Thailand's medical tourism sector. Based on this context, the present study aims to examine hospital medical tourism service design to meet tourist needs while supporting human resource competency development.

## Literature Review

Medical tourism involves patients traveling across countries to receive healthcare services while combining the experience with leisure or vacation activities [6]. A vacationing patient is defined as someone who primarily seeks medical treatment abroad but also engages in recreational activities, particularly during the recovery period following surgery or specific medical procedures [2].

The medical tourism service supply chain comprises multiple stakeholders, each with specific roles and responsibilities:

Patient: The patient initiates the request for treatment, completes necessary documentation, provides informed consent, submits relevant medical tests and reports, adheres to prescribed treatment plans, and fulfills financial obligations.

- Assistance Company: Provides comprehensive support, including evaluating applications, offering medical guidance, requesting and analyzing tests, translating reports into the host country's language, advising on costs and treatment processes, recommending healthcare providers, scheduling pre-operative assessments, handling payments, providing medical escorts, maintaining 24/7 communication, and coordinating with other service providers [2, 7].
- Medical Service Provider: Conducts pre-operative medical assessments, obtains patient consent, administers treatment, issues medical reports, prescriptions, and fit-to-fly certificates, and prepares insurance-related documentation [7, 8].
- Transportation Services Provider: Offers transportation for medical tourists, including airport transfers and ambulance services when needed [9].
- Accommodation Provider: Arranges lodging for medical tourists for specified durations [7].
- Flight Service Provider: Manages flight bookings and handles related billing [10].
- Translation Service Provider: Provides multilingual translators at the destination.
- Tourism Activity Provider: Offers customized or package tours for medical tourists, including guides and escorts.
- Visa Service Provider: Facilitates the entire visa application process.
- Insurance Service Provider: Manages insurance claims and payment procedures [11].

Some studies categorize stakeholders involved in medical tourism into two main groups [12]:

### *Group 1: Core activities*

#### 1. Tourism Activities:

- Transportation Services: Facilitate the movement of tourists between origin and destination safely, comfortably, and affordably [13].
- Travel Agencies: Handle bookings, accommodations, and sales of travel packages, often earning fees or commissions [14].
- Restaurants: Provide meals tailored to dietary restrictions or medical requirements [15].
- International Airlines: Manage air travel for medical tourists, coordinating requests for special services [16].
- Tourist Attractions: Offer recreational activities to enhance the travel experience [17].
- Tour Operators: Develop tour packages, manage logistics, and promote tourism products through various marketing channels [18].
- Hotels and Hospitality: Manage accommodations and provide high-quality guest services [15, 18].

#### 2. Medical Activities:

- Medical Transportation: Includes emergency and non-emergency transport [19].
- Hospitals and Clinics: Manage patient care and coordinate with other medical facilities [12].
- Dental Treatments: Ensure proper dental care for medical tourists [20].
- General Medicine: Manage general medical treatments for patients [21].

- Thai Medicine: Provides traditional Thai medical practices, including herbal therapies and massages, based on local cultural beliefs [22].
- Cosmetic Surgery: Offers procedures to enhance physical appearance, such as rhinoplasty, double eyelid surgery, facial contouring, breast augmentation, and laser treatments [23, 24].

### Group 2: Supporting and related industries

- Insurance Services: Coordinate with insurers for patient care, hospital admissions, and repatriation [12, 23].
- Legal Services: Address legal matters related to treatment, documentation, and patient rights [25].
- Banking Services: Provide financial support for medical tourists [26].
- Medical Device Suppliers: Supply necessary medical equipment [26].
- Spa Operators: Deliver integrated Thai wellness services, such as herbal therapies and massages, aligned with customer needs [27]
- Food Suppliers: Provide meals that meet dietary and medical requirements [28].
- Translators: Offer language interpretation for medical and tourism-related communications [29].

Research in medical tourism has primarily focused on service design, examining different types of medical tourists and methods of service delivery, with an emphasis on medical and tourism activities rather than travel support. There remains limited exploration of the specific needs of various patient groups, particularly regarding service expectations, communication preferences, and post-treatment care. Future studies should investigate these unique needs, especially concerning human resource management. Based on the conceptual framework by Alberti *et al.* [12], a comprehensive research framework can be proposed that integrates tourism activities, medical activities, and hospital human resource development, providing a holistic approach to medical tourism service delivery.

## Research Methodology

Phase 1: Following an extensive literature review, a set of semi-structured interview questions was developed to explore the experiences of individuals managing medical tourism operations, with an emphasis on three core areas: tourism activities, medical activities, and supporting activities (TMS). Participants were selected through purposive sampling and were required to have hands-on experience in overseeing medical tourism services within private hospitals in Thailand. A total of 15 experts were interviewed, including hospital administrators, executives from tourism organizations, and academic professionals. The interview data were analyzed using content analysis techniques to reduce researcher bias. The results identified three main categories—tourism, medical, and supporting activities—which subsequently informed the design of the structured questionnaire for the second phase of data collection.

Phase 2: Insights from Phase 1 guided the creation of a questionnaire aimed at assessing international tourists' demand for hospital-based medical tourism services. Responses were measured on a 5-point Likert scale: 1 = "least important," 2 = "slightly important," 3 = "moderately important," 4 = "very important," and 5 = "most important." The questionnaire was validated with a pilot sample of 30 international participants, and reliability testing yielded a Cronbach's alpha of 0.934, surpassing the 0.7 benchmark, indicating strong internal consistency [30]. Based on the rule that the sample size should be at least five times the number of variables, 250 participants were selected to correspond to the 30 variables across the three factors [31]. Questionnaires were distributed to foreign patients who had direct contact with private hospitals and were willing to participate. Factor analysis was conducted, retaining items with loadings above 0.5, and each factor included a minimum of three items to define hospital service performance and the delivery of medical tourism services [32].

The study tested the following hypothesis:

H1: Tourists' perceptions of hospital services are shaped by factors related to medical tourism activities.

For the quantitative phase, Bangkok was chosen as the study location because it is a preferred destination for medical tourism, offering advanced healthcare facilities, high-quality standards, attentive services, and experienced medical staff. The study sample of 250 international tourists included individuals aged 20–30, 31–40 (largest group), and over 61. Female participants represented 63.6%, while males accounted for 36.4%. A majority of 54% had direct interactions with hospitals without using intermediaries, and 38% were employed by private sector organizations (**Table 1**).

**Table 1.** Specifications

Category	Sub-category	Frequency	Percentage (%)
1. Gender	Male	91	36.4
	Female	159	63.6
	<b>Total</b>	<b>250</b>	<b>100</b>
2. Age Group	20 – 30 years	40	16.0
	31 – 40 years	97	38.8
	41 – 60 years	80	32.0

	61 years and above	33	13.2
	<b>Total</b>	<b>250</b>	<b>100</b>
3. Occupation	Entrepreneur / Business Owner	46	18.4
	State Enterprise Employee	68	27.2
	Private Organization Employee	97	38.8
	Self-Employed	39	15.6
	<b>Total</b>	<b>250</b>	<b>100</b>
4. Type of Medical Tourist	Direct contact with hospitals	135	54.0
	Contact hospitals through agents	77	30.8
	Referred by insurance companies or employers	38	15.2
	<b>Total</b>	<b>250</b>	<b>100</b>

## Research Results

In line with the research objectives and hypotheses, factor analysis was employed, specifically principal component analysis (PCA) with varimax rotation, to extract three distinct factors from the set of studied variables (**Table 1**). These factors represent different dimensions of the research variables aimed at understanding tourists' preferences. The analysis produced the following factors, which are detailed in

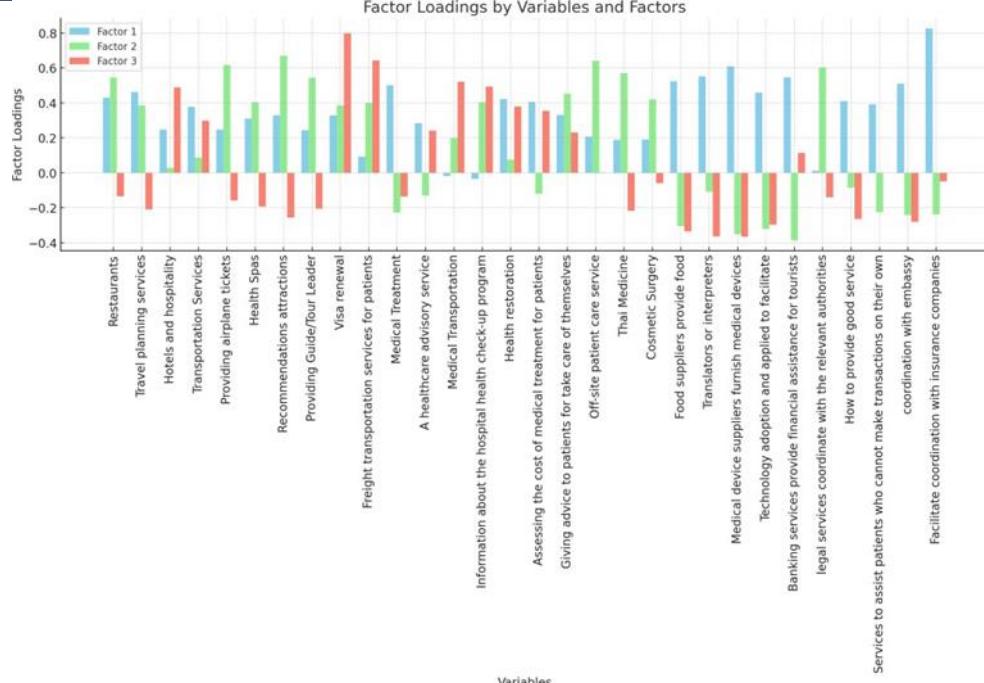
**Table 2.** Using the principal component extraction method

Service Item	Factor 1	Factor 2	Factor 3
Coordination with insurance companies	.825	-.239	-.050
Medical device suppliers providing equipment	.608	-.352	-.366
Translators or interpreters	.552	-.108	-.364
Banking and financial assistance services for tourists	.545	-.386	.112
Food suppliers delivering meals	.524	-.306	-.337
Coordination with embassies	.510	-.242	-.282
Medical treatment services	.500	-.229	-.136
Adoption of technology to support medical tourism	.458	-.322	-.297
Restaurants	.430	.546	-.134
Health restoration and rehabilitation services	.421	.075	.380
Training on delivering excellent service	.410	-.087	-.264
Cost estimation of medical treatment for patients	.405	-.121	.354
Assistance for patients unable to handle transactions independently	.391	-.226	-.001
Transportation services (general)	.377	.086	.297
Advising patients on self-care	.330	.452	.230
Recommendations of tourist attractions	.328	.669	-.257
Visa extension/renewal services	.328	.385	.798
Health spas and wellness facilities	.310	.404	-.194
Healthcare advisory and consultation services	.284	-.130	.240
Hotels and accommodation services	.247	.028	.488
Providing airplane tickets	.246	.616	-.160
Providing tour guides / tour leaders	.242	.544	-.206
Cosmetic surgery services	.190	.420	-.059
Thai traditional medicine services	.188	.571	-.219
Off-site patient care and follow-up services	.206	.642	.001
Patient freight and medical cargo transport	.092	.400	.644
Legal services and coordination with authorities	.012	.602	-.140
Medical transportation (ambulance/transfer)	-.020	.199	.522
Information on hospital health check-up packages	-.036	.403	.492
Travel planning and itinerary services	.462	.385	-.210
<b>Eigenvalue</b>	<b>6.100</b>	<b>2.185</b>	<b>1.372</b>
<b>Percentage of Variance Explained</b>	<b>35.985%</b>	<b>12.888%</b>	<b>8.096%</b>

The three extracted factors account for 56.97% of the total variance. Each factor can be interpreted within its contextual framework, and the factor structure is clearly illustrated in the pattern matrix (**Table 1**). The reliability of these factors is further supported by the Cronbach's alpha values. The factor analysis revealed three distinct factors: support activity, tourism activity, and medical activity. The internal consistency for each factor, as measured by Cronbach's alpha, is as follows:

- Support activity: Cronbach's alpha = 0.773
- Tourism activity: Cronbach's alpha = 0.943
- Medical activity: Cronbach's alpha = 0.859

These results indicate that the factors are both statistically robust and reliable for assessing the various dimensions of medical tourism services.



**Figure 1.** Latent variable analysis and clustering

#### *Factor 1: Services related to support activity*

The investigation revealed that factor 1 consisted of nine latent factors, most of which pertained to hospitals' support activities designed to meet visitors' needs. The criteria encompassed services such as travel arrangements and medical care. Specifically, food suppliers provided necessary provisions; translators or interpreters facilitated communication; medical device suppliers ensured the availability of essential equipment; technology adoption and application improved operational efficiency; banking services offered financial assistance; and coordination with embassies and insurance companies helped ensure smooth processes and coverage. The Cronbach's alpha value of 0.773 for this factor indicates that it is both reliable and internally consistent. Overall, all latent variables under factor 1 are associated with addressing the requirements of medical tourists by supporting activities across these relevant industries.

#### *Factor 2: Services related to tourism activity*

The analysis revealed that factor 2 comprises eight underlying components, most of which are related to hospitals' tourism efforts designed to meet the needs of visitors. These components include services such as food provision by suppliers, communication support through translators or interpreters, supply of essential medical equipment, process optimization via technology adoption, financial assistance from banking services, coordination with embassies to ensure smooth procedures, and collaboration with insurance companies to guarantee coverage. With a Cronbach's alpha of 0.943, this factor demonstrates excellent reliability and strong internal consistency. Overall, the latent variables associated with factor 2 play a key role in addressing medical tourists' needs by supporting the activities highlighted in the study.

#### *Factor 3: Services related to medical activity*

The analysis indicated that factor 3 is mainly composed of four underlying components associated with hospitals' medical care services, specifically designed to address visitors' requirements. These components include visa renewal, freight transportation, medical transport, and information regarding the hospital's health check-up programs. With a Cronbach's alpha of 0.859, this factor exhibits high reliability and strong internal consistency. Collectively, the latent variables within factor 3 support the fulfillment of medical tourists' needs as outlined in the study.

The structure of factors derived from the survey on foreign visitors' needs also determines the values of the intercorrelation coefficients among the extracted factors, as presented in **Table 3**. The results indicate that the individual factors are significantly and positively correlated with each other, and they also show a strong positive correlation with the overall score. This suggests that when foreign visitors rate one factor highly, they tend to assign high ratings to the other factors as well. Consequently, the overall service needs of foreign visitors can be analyzed as a unified construct in the subsequent evaluation.

**Table 3.** Intercorrelation coefficients between the extracted factors

	Factor 1	Factor 2	Factor 3	Total (Composite)
Factor 1	1.000	0.628	0.406	0.780
Factor 2	0.628	1.000	0.783	0.938

Note: Factor 3-Medical Activity, Factor 2-Tourism Activity, Factor 1-Support Activity

The analysis was further supported by calculating the mean values for each factor and examining their statistical significance. The findings revealed significant differences in how the individual factors were evaluated in terms of service activities. Among them, the hospitals' support activity services emerged as the most highly rated factor, as presented in **Table 4**.

**Table 4.** Differences in average values

	Mean Rank	Friedman's Chi-Square	p-value
<b>Factor 1</b>	1.20		
<b>Factor 2</b>	2.15	291.123	.000
<b>Factor 3</b>	2.65		

Note: Factor 3-Medical Activity, Factor 2-Tourism Activity, Factor 1-Support Activity

## Conclusion

The results from factor analysis, Cronbach's alpha testing, intercorrelation assessment, and Friedman's test collectively demonstrate a clear and robust factor structure within hospitals' Medical Tourism Services. This provides strong evidence supporting the hypothesis that the provision of tourist-related services represents underlying latent factors tied to medical tourism operations.

In relation to prior research, Alberti *et al.* [12] explored the key variables shaping service design. They identified three principal categories—medical services, tourist-related activities, and supportive services—that together capture the full spectrum of individual service needs. Their study showed that these factors account for 56.97% of the total variation in the service requirements of international visitors to Thailand. The findings are summarized in **Table 5**.

**Table 5.** Medical tourism services required by tourists from hospitals

Latent Factor	Code	Item (Support Service)	Source/Reference
<b>Support Activity Services</b>			
	SS1	Travel planning services	Ganguli & Ebrahim [33]
	SS2	Medical treatment specialization coordination	Wongkit & Mckercher [34]
	SS3	Food suppliers providing meals and dietary services	Bagga <i>et al.</i> [35]
	SS4	Translators or interpreters	Ganguli & Ebrahim [33]
	SS5	Medical device/equipment suppliers	Williams & Balaz [36]
	SS6	Banking and financial assistance services for medical tourists	Kaushik & Rustagi [37]
	SS7	Coordination with embassies/consulates	Gómez Aguilar <i>et al.</i> [38]
	SS8	Facilitating coordination with insurance companies	Kaushik & Rustagi [37]
<b>Tourism Activity Services</b>			
	TS1	Restaurant and dining services	Zavras [39]
	TS2	Provision of airline tickets	Lunt [40]
	TS3	Recommendations for tourist attractions	Connell [3]
	TS4	Providing guides or tour leaders	Tsaur & Teng [41]
	TS5	Post-treatment self-care advice for patients	Murti <i>et al.</i> [42]
	TS6	Off-site/follow-up patient care services	Kim <i>et al.</i> [43]
	TS7	Traditional Thai medicine and wellness services	He [44]
	TS8	Legal services and coordination with relevant authorities	Wahed [25]
<b>Medical Activity Services</b>			
	MS1	Visa extension and renewal services	Turski <i>et al.</i> [11]
	MS2	Freight/cargo transportation services for patients and companions	Palang & Tippayawong [45]
	MS3	Dedicated medical transportation (e.g., ambulance, medical transfers)	Mason & Spencer [46]
	MS4	Information and arrangement of hospital health check-up programs	Jones <i>et al.</i> [47]

Globally, research into the factors influencing demand for medical tourism services among international visitors remains relatively underexplored. While studies by Bookman (2017), Connell [3], and Kim *et al.* [48] have focused extensively on economic and marketing communication aspects, these have primarily addressed the commercial side of medical tourism rather than visitor-centered service needs.

From the perspective of tourists, the Medical Tourism Service factor of hospitals plays a pivotal role in fulfilling the requirements of medical travelers. This area has the potential to reveal important insights that can enhance hospital activity management.

Insights from interviews indicate that foreign visitors to Thailand express interest in health spa treatments offered by hospitals. These services, guided by therapists and physicians, aim to optimize overall well-being. Recommended offerings include physical wellness massages, aquatic therapy, yoga for mental and physical health, baking for health, fitness programs, nutritional counseling, and dietary management. Additionally, herbal remedies and traditional Thai health massages—covering both body and foot therapies for wellness and aesthetic purposes—were suggested. Hospitals are also expected to facilitate travel logistics, including collaborating with airlines for ticket booking and access to in-flight medical services.

Moreover, statistical analysis demonstrates that international medical tourists in Thailand expect hospitals to provide robust supporting services. These include coordination with insurance companies, banking services, embassy liaison, procurement of tourist activities, and culturally tailored tourist services [49]. These findings align with Lunt [40], who identified insurance providers, medical tourism brokers, financial services, travel and accommodation businesses, and supplier awareness as key drivers of medical tourism. Hospitals frequently cater to specific cultural groups, exemplified by Bumrungrad Hospital offering tailored services to patients from the Middle East.

The study also highlights that hospitals in Thailand are increasingly emphasizing medical service development. Current focuses include cosmetic surgery, where hospitals demonstrate high standards and expertise, as well as services in infertility treatment through assisted reproductive technologies [50, 51]. Thailand's societal acceptance, including LGBTQ+ tolerance, enhances the inclusivity of medical tourism services [52]. Furthermore, services for companions of foreign patients are needed, such as programs that provide travel and leisure activities for escorts during the patients' stay.

In summary, the development of hospital services in Thailand emphasizes both medical advancement and supportive tourism activities. Understanding the perspectives of international medical tourists offers valuable guidance for designing and improving medical tourism services. Additionally, the development of human resources within hospitals is critical, as staff competence directly influences the success and quality of medical tourism services in Thailand.

**Acknowledgments:** This research was supported by The Science, Research and Innovation Promotion Funding (TSRI) (Grant no. FRB650070/0168). This research block grant was managed under Rajamangala University of Technology Thanyaburi (FRB2579204).

**Conflict of interest:** None

**Financial support:** None

**Ethics statement:** None

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