

THE NEED FOR HALAL CERTIFICATION OF MEDICAL DEVICES: A CASE STUDY OF THAILAND

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ABSTRACT

This study aims to examine whether there is a need for medical devices used for Muslim patients to be Halal certified. This study comprehends the concepts and ideas of Halal medical devices based on the present information that is available in documents, articles, websites and online databases. This study reveals that in the case of Thailand, there is a need for medical devices to be Halal certified particularly due to three main reasons: 1) there is a significant increase in the World Muslim population; 2) the number of Muslim tourists that come to Thailand for medical services have been increasing notably as Thailand is one Muslim-Friendly tourist destinations; and 3) there will be a business opportunity for the industrial players in Thailand to export more of non-food products like medical devices with Halal certification as the country has successfully been exporting a lot of Halal foods and Thailand's Halal certification has been recognized by many Muslim countries.

Keywords: *Halal Certification, Medical Devices, Muslim Patients, Medical Tourism, Business Opportunities, and Thailand*

1. Introduction

The increase of the World's Muslim population has made the Halal concept gain popularity; and Halal certification become more crucial to institutions, organizations, and business sectors. In 2022, the Muslim population was about 1.9 billion people, approximately 24% of the world population (7.7 billion people); and it is expected that it will increase to more than 2 billion people by 2030 (Pew Research Center, n.d.). The increase in the Muslim population has benefited many Halal sectors in Thailand, including Halal tourism. When it comes to tourism, Thailand has been promoting Halal tourism since 2015, especially under the concept of "Thailand Muslim-Friendly Destination" (Panyathanakhu, 2021). This included Halal medical tourism. Long waiting lists for medical services in other countries, as well as rising costs of healthcare and medications in many developed countries such as the United States of America (USA), Canada, Singapore, Japan, United Kingdom (UK) and many European countries, have essentially driven many individuals, including Muslims patients, to seek medical treatments from other countries around the world, particularly with low-cost healthcare and hospitals. Thailand is one of the countries in Southeast Asia that has benefited from this trend as the country provides medical services at affordable cost, quality treatment, a high standard of healthcare system, top-notch facilities, and incredible hospitality. Eiamnakhon (2015) revealed that although Thailand is not a Muslim country, the country has been able to create value added to Muslim-medical tourism. Consequently, Thailand has become one of the most popular medical tourist destinations in ASEAN, especially for those who were from Gulf Cooperation Council (GCC) countries. According to DinarStandard 2020 as cited in Panyathanakhu (2021), Saudi Arabia spent on travelling abroad the most among five the Muslim countries, about USD 22,000 million in 2020; followed by UAE (USD 17,000 million), Qatar (USD 15,000 million), Kuwait (USD 12,000 million), and Indonesia (USD 11,000 million). Landreville (2016) found that Muslim consumers from the Middle East had positive perceptions towards the quality of healthcare and hospitals in Thailand.

According to Global Muslim Travel Index (GMTI) (2022), Thailand was ranked third non-organization Islamic country (OIC), after Singapore and Taiwan, as Muslim-Friendly travel destinations (GMTI, 2022). This could be one of the vital reasons why Muslim medical tourists chose Thailand for their medical services. Table 1 shows that, in 2019, Thailand received 172,265 medical tourists from many countries around the globe. Among six Muslim countries, the country received UAE the most, accounting for 6,215 people; followed by Kuwait (4,463), Malaysia (3,902), Bangladesh (3,789), Indonesia (2,255), and Saudi Arabia (725). To ensure the satisfaction of Muslim patients, especially from the Middle East, many hospitals in Thailand prepare Halal meals, Arabic translators and service desks, prayer rooms, and Qiblat (prayer direction). Eiamnakha (2015) revealed that most of the top hospitals in Thailand offer 5-star hotels that provide immaculate private rooms with full facilities, including Halal foods, access to prayer rooms, male-female zones, tour guides for Islamic travellers and many more. This included Bumrungrad International Hospital which was listed as the world's best hospital in 2022; and ranked as the first best hospital in Thailand, followed by Siriraj Piyamaharajkarun Hospital, Bangkok Hospital, Ramathibodi Hospital, Samitivej Sukhumvit Hospital, Thonburi Hospital, King Chulalongkorn Memorial Hospital, Phra Ram 9 Hospital, Bangpakok 9 International Hospital, and MedPark Hospital. Most Muslim Arab patients came to the hospitals in Thailand for various medications such as stroke, diabetes, cancer (i.e., lung, liver, stomach, colon, breast, bond, etc.) and so on.

Table 1. Numbers of International Medical Tourist Arrivals to Thailand by Muslim countries during 2018 – 2020

Unit: Person

Country	2018	2019	2020
Total	95,251	172,265	31,708
United Arab Emirates	2,847	6,215	428
Kuwait	1,702	4,463	900
Malaysia	2,286	3,902	534
Bangladesh	1,653	3,789	642
Indonesia	531	2,255	270
Saudi Arabia	290	725	138

- Note:
1. In 2020, there was an epidemic of COVID-19 in Thailand, as a result, the number of tourists is much lower than normal.
 2. In the 2nd and 3rd quarters of 2020, Thailand closed the country. Therefore, no foreign tourists travelling to Thailand during that period
 3. Where currently COVID-19 epidemic is still not the end.

Source: Office of the Permanent Secretary for Ministry of Tourism and Sports, Ministry of Tourism and Sports

Thailand has realized the potential contribution of Muslim medical tourists to its Halal tourism sector; and eventually economy. The Thai government and many top international hospitals in Thailand, such as Bamrungrad International Hospital, Siriraj Piyamaharajkarun Hospital, and Bangkok Hospital attempt, have attempted their best to provide Halal meals, and hotels with prayer rooms and Qiblat (prayer direction). That was to ensure the confidence and satisfaction of Muslim medical tourists who come to Thailand for medical services. However, the focus on Halal certification should not be limited to foods and beverages, but it must be extended to non-foods and services such as medicine, personal care, and also medical devices. Studies have shown that foods, non-foods and services must be Halal certified (Mohd Shariff and Abd Lah, (2014); Latiff and Omar, 2019; and Alfarajat,

2022). However, there are still gaps in the literature on whether medical devices must be Halal certified. Therefore, this study aims to identify whether medical devices in the case of Thailand need to be Halal certified. This study uses information that is available in documents, articles, websites and online databases in comprehending the concepts and ideas of Halal medical devices.

2. Materials and methods

This study employs a qualitative approach through document analysis based on present information available in journal articles, websites and online databases in comprehending the concepts and ideas of Halal medical devices. This study aims to provide key insight and recommendations to policymakers and key players in Thailand's medical tourism industry regarding business opportunities and challenges for Halal medical devices.

2.1 Halal Certification

Halal certification could be referred to as an official recognition given to assure that goods and services, especially foods, comply with Shariah Laws; hence they are safe and permissible for Muslims to use or consume (Aziz and Chok, 2012). Islam has set the requirements clearly that certain animals are prohibited to consume as mentioned in the Holy Al-Qur'an:

“Only He has forbidden to you the dead animals, and (the) blood, and flesh, (of) swine, and what has been dedicated [with it] to other than Allah. So, whoever (is) forced by necessity without (being) disobedient and not transgressor, then no sin on him. Indeed, Allah (is) Oft-Forgiving, Most Merciful.” (al-Quran, 2:173)

Based on the above verse (Ayat), it is obvious that Muslims are prohibited to consume non-Halal products, particularly swine. Therefore, Halal certification can be considered one of the major tools which help to determine whether the product is Halal or not (Karima and Darwanto, 2021). According to Jabatan Kemajuan Islam Malaysia (JAKIM), there is a wide range of products and services that need to be Halal certified, including food and beverage, food premises and hotel kitchens, consumer goods, cosmetic and personal care, abattoir, pharmaceutical and logistic (Latiff and Omar, 2019). Mohd Shariff and Abd Lah (2014) revealed Halal certification was needed for newly formulated choco-health products as the products containing marine collagen and mirifica which were at risk of non-Halal contamination. However, the procedures for Halal certifications needed to be simplified so that it would be easier for small entrepreneurs in Malaysia to request Halal certification (Mohd Shariff and Abd Lah, 2014). Similarly, Alfarajat (2022) also found that Halal certification for the Halal menu in the Korean Health Care Institutions (KHCI) was necessary, particularly, to attract Muslim medical tourists. That was because many healthcare institutions in Korea did not understand the needs of Muslim patients as the food offered by the KHCI was not fully perceived as Halal. Whilst, Karima and Darwanto (2021) indicated that Halal certification had a significant and positive influence on Muslim's purchase intention of imported food products in the city of Semarang (the fifth largest metropolitan city in Indonesia). This shows the importance of Halal certification in importing products into Muslim countries. On the other point of view, it also demonstrates that Halal certification of any exporting country can be used as a marketing tool in promoting its export, including Thailand – a country which has been exporting a lot of Halal products.

2.2 Medical Devices

World Health Organization (WHO) defines medical devices as “instruments, apparatus, implement, machine, appliance, implant, reagent for in vitro use, software, material or other similar or related article, intended by the manufacturer to be used, alone or in combination for a medical purpose”. However, medical devices in this study refer to any medical devices containing any parts of animals or Animal Derived Materials (ADMs) (Latiff and Omar, 2019; and United States Food and Drug Administration (USFDA), 2019), especially those which are inserted into the body. This is because the ADMs include any substance derived from the body of any animal, including fat, flesh, blood, milk and eggs. The products containing the parts of animals or ADMs may carry a risk of transmitting infectious diseases when the products were not properly collected, stored and manufactured (USFDA, 2019). Whilst, Islam prohibits the use of products that are made from Haram (forbidden) or unclean materials, particularly porcine (or pigs). Zhang (2020) indicated that porcine tissue was well established in the production of certain medical devices, for example, hernia repair, breast reconstruction and so on. This is in line with what has been revealed by Lembaga Pengkajian Pangan Obat-obatan dan Kosmetika Majelis Ulama Indonesia (LPPOM MUI) that almost every product has a critical point of prohibition. Therefore, there is always a chance for the product to have non-Halal status. Even though final products might not contain non-Halal ingredients, the production process might find pig-derived materials in the products. According to the LPPOM MUI, therefore, medical devices must have Halal certification in which the assessment and verification process must be done according to Halal certification standards. This is to ensure that the products are not contaminated with porcine DNA.

One of the outstanding examples of Thailand's medical device that was Halal certified is the colostomy bags for colon cancer patients. This innovative colostomy bag has been awarded by Thailand Innovation Awards (TIA) as the best national innovation in 2020. It was basically developed and innovated by a group of researchers from the Faculty of Medicine, Prince of Songkhla University (PSU) led by Asst. Prof. Dr Worravit Wanichsuwan with the aim to lower the cost of using colostomy bags in Thailand and also reduce the import. The cost of imported colostomy bags was relatively high; it was about 200-500 baht per set. One of the significant materials that have been used in upgrading these colostomy bags was the protein in natural rubber latex – as Thailand is the most natural rubber producer in the world – instead of using a polymer which might contain the ADMs. Hence, it might reduce the risk of non-Halal contamination as the protein in natural rubber is plant base material.

2.3 Medical Tourism

Medical tourism was defined as “a particular form of patient mobility, where patients travel across borders or to overseas destinations to receive treatments including fertility, cosmetic, dental, transplantation and elective surgery” (Lunt et al., 2016; Alfarajat, 2022). It was also defined as a kind of travelling abroad in order to receive medication, dentistry and operation (or health) services. At a minimum, it should contain one-night accommodation (Sadremomtaz & Agharahimi, 2010; Bari et al., 2014). Ghanbari et al. (2014) also suggested that medical tourism was one of the crucial indices in measuring the tourism industry as the advancement of medical services, especially in terms of technical features, that would support economic and social development. That was because if the country could attract medical tourists, there would be potential for the country to promote other types of tourism such as religion sports, leisure and so on. This is in line with what has been suggested by Kangas (2010) as cited in Alfarajat (2022) that promoting medical tourism would also support other types of tourism such as leisure, business and so on.

Table 2 shows the length of stay, per capita spending and tourism receipts from international tourist arrivals to Thailand from 2018 to 2020. In 2019, the average length of stay in six Muslim countries was about 9.31 days per visit with which people from Kuwait staying the longest at about 13.05 days, followed by people from Saudi Arabia (12.83), UAE (11.14), Bangladesh (8.32), Indonesia (5.68) and Malaysia (4.81). Whilst, the average per capita spending of these six countries was USD 194.32 per day with which Kuwait spent the most, accounting for USD 224.16 per day, whereas Indonesia spends the least which was about 147.05 per day. With the length of stay and per capita spending, the average receipt of Thailand from international tourists of these six Muslim countries was about USD 829.28 million, with Malaysia the most (USD 3,460.8 million) and Saudi Arabia the least (USD 103.71 million). This could be because, in 2019, Thailand received tourists from Malaysia the most (accounted for 4,274,458 persons) and Saudi Arabia the least (36,783 persons).

Table 2. Length of Stay, Per Capita Spending and Tourism Receipts from International Tourist Arrivals to Thailand by Country of Residence: 2018 – 2020

Country	Item	2018	2019	2020	Unit
Total	Number of Arrivals	38,178,194	39,916,251	6,725,193	Persons
	Length of Stay	9.29	9.26	12.54	Days
	Per Capita Spending	5,289.72	5,172.29	3,738.38	Baht/Day
		163.72	166.58	119.44	US\$/Day
	Tourism Receipts	1,876,136.90	1,911,807.95	355,367.43	Mil. Baht
58,066.76		61,571.91	11,353.59	Mil. US\$	
Indonesia	Number of Arrivals	644,479	706,908	96,993	Persons
	Length of Stay	5.69	5.68	6.81	Days
	Per Capita Spending	4,736.38	4,566.01	3,875.30	Baht/Day
		146.59	147.05	123.81	US\$/Day
	Tourism Receipts	17,368.72	18,333.62	2,644.01	Mil. Baht
537.56		590.45	84.47	Mil. US\$	
Malaysia	Number of Arrivals	4,042,998	4,274,458	612,922	Persons
	Length of Stay	4.84	4.81	8.15	Days
	Per Capita Spending	5,341.64	5,226.50	3,017.45	Baht/Day
		165.32	168.33	96.40	US\$/Day
	Tourism Receipts	104,525.81	107,457.97	17,492.99	Mil. Baht
3,235.09		3,460.80	558.88	Mil. US\$	
Bangladesh	Number of Arrivals	125,809	139,622	22,913	Persons
	Length of Stay	8.20	8.32	10.91	Days
	Per Capita Spending	6,287.37	5,793.54	5,848.21	Baht/Day
		194.60	186.59	186.84	US\$/Day
	Tourism Receipts	6,486.27	6,730.08	1,698.14	Mil. Baht
200.75		216.75	54.25	Mil. US\$	
Kuwait	Number of Arrivals	77,365	84,504	11,149	Persons
	Length of Stay	13.14	13.05	19.16	Days
	Per Capita Spending	7,254.92	6,960.06	5,717.83	Baht/Day
		224.54	224.16	182.68	US\$/Day
	Tourism Receipts	7,375.19	7,675.40	1,909.63	Mil. Baht
228.26		247.19	61.01	Mil. US\$	
Saudi Arabia	Number of Arrivals	35,090	36,783	6,372	Persons
	Length of Stay	12.55	12.83	14.98	Days

	Per Capita Spending	7,406.64	6,823.42	5,869.87	Baht/Day
		229.24	219.76	187.54	US\$/Day
	Tourism Receipts	3,261.73	3,220.15	637.85	Mil. Baht
		100.95	103.71	20.38	Mil. US\$
United Arab Emirates	Number of Arrivals	151,137	145,530	9,550	Persons
	Length of Stay	10.61	11.14	17.10	Days
	Per Capita Spending	7,109.62	6,832.67	5,173.08	Baht/Day
		220.04	220.05	165.27	US\$/Day
	Tourism Receipts	11,400.73	11,077.15	1,053.82	Mil. Baht
		352.85	356.75	33.67	Mil. US\$

- Note: 1. In 2020, there was an epidemic of COVID-19 in Thailand, as a result, the number of tourists is much lower than normal.
 2. In the 2nd and 3rd quarters of 2020, Thailand closed the country. Therefore, there are no foreign tourists travelling to Thailand during that period
 3. Where currently COVID-19 epidemic is still not the end.

Source: Office of the Permanent Secretary for Ministry of Tourism and Sports, Ministry of Tourism and Sports

3. Results and Discussion

The fast-growing Muslim population has made no doubt that Halal certification is necessary in this contemporary world, particularly in creating confidence for Muslim consumers and bringing value to modern businesses. Therefore, the application for Halal certification shall not limit only to food and beverage, but it must extend to non-foods and services, including medical devices which may be at risk of non-Halal animal contamination. As Thailand is one of the countries that receive a number of Muslim medical tourists, the country shall be one of the pioneers or first movers that promote the application of Halal certification for medical devices. This is not only to assure that medical devices themselves are Halal, but to ensure that Muslim medical tourists who come to Thailand for medications receive the full range of Halal services from food, hotels, and other services. Furthermore, Halal certification for medical devices can also be used as a marketing tool in attracting more Muslim medical tourists coming to many top hospitals in Thailand; hence promoting Thailand's Halal tourism industry as a whole. According to Latiff and Omar (2019), there has been a high demand for Halal certification on medical devices requested by the industry in Malaysia. This demonstrates that in order to remain competitive in the local and global market, Halal certification must be emphasized according to current needs. The colostomy bags developed by the Faculty of Medicine of PSU was a crucial example of medical devices with Halal certification as that development project aimed to assure that Muslim colon cancer patients, particularly in Southern Thailand, have Halal colostomy bags for their daily lives.

4. Conclusion

This study examines whether there is a need for medical devices used for Muslim patients in Thailand and from foreign countries to be Halal certified. After going through the present information available in the documents, articles, websites and online databases, the results show that it is necessary for medical devices in the case of Thailand to be Halal certified. This is due to the number of world Muslim population has increased notably; and many Muslim medical tourists from Muslim countries coming to Thailand for medical services

such as from Kuwait, Saudi Arabia, UAE, Qatar, Malaysia, Indonesia and Brunei. That was possibly due to Thailand being one of the Muslim-Friendly medical tourist destinations. Hence, medical devices with Halal certification could be an alternative for hospitals in Thailand in attracting more Muslim medical tourists coming to Thailand. Furthermore, Halal certification on medical devices could also be considered as a marketing tool in promoting the export of Thailand's medical devices to overseas markets as the country can use protein in natural rubber which is plant-based raw material in producing Halal medical devices as Thailand is the top natural rubber producers in the world. Moreover, Thailand has been successfully exporting various Halal products in past decades. Finally, it is recommended for future study to investigate: 1) whether medical personnel in Thailand have any intention to recommend Muslim medical tourists who come to Thailand for medical services to use Halal medical devices; and 2) whether Muslim medical tourists coming to Thailand for medication – as consumers – are willing to use or request for Halal medical devices. This is to understand the perceptions of Muslim medical tourists on Halal medical devices.

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