

MEDICAL TOURISM MARKET AND ITS IMPACT ON ECONOMIC ACTIVITY AND EMPLOYMENT – EVIDENCE FROM SAUDI ARABIA

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ABSTRACT: *The purpose of this research paper is to examine the scope of medical tourism in Saudi Arabia along with the economic benefits. For this purpose, a focused research study is conducted to explore how Saudi Arabia’s population and foreigners respond to medical tourism and to analyze data from government publications and in-depth interviews with experts. The results suggest that massive reforms are required to utilize the opportunities of medical tourism in the country. Medical tourism is shown to have a positive and significant impact on economic growth and unemployment reduction.*

Keywords: Economic Tourism; Medical Tourism; Economic Activity; Employment

I. INTRODUCTION

Tourism is an industrial sector that includes conventional industries that contribute to meet the tourism demand [1]. Medical tourism, specifically, is defined as a process in which people who live in one country travel to another country to obtain medical, dental and surgical treatment that is comparable or superior to the care that they get in their own country of residence; these patients are making the journey to another country for affordability to have access higher-quality medical facilities.

This study examines medical tourism in Saudi Arabia and its impact on the economy. Tourism in Saudi Arabia is the second largest source of income after oil. The tourism industry generates approximately \$13.8 billion annually and is one of the largest sources of employment. It is predicted that Saudi Arabia will be generating \$63.7 billion by 2019 [2]. According to the World Health Organization, SAR 79.795 million is spent on 386 hospitals, 54,724 hospital beds and 55,000 physicians. Thus, it is evident that Saudi Arabia has tremendous healthcare infrastructure and has a potential to be utilized fully for medical tourism. By August 2013, Saudi Arabia had more than 40 Joint Commission International (JCI) accredited hospitals (Table 1). Accreditation develops more trust among foreign patients when they choose hospitals.

Table 1. Countries and Number of Hospitals with JCI accreditation in August, 2013.

Country	Number of Hospitals	Country	Number of Hospitals
Taiwan	12	Malaysia	6
Thailand	18	Qatar	5
China	16	Republic of Korea	13
Egypt	3	KSA	42
Germany	3	Singapore	14
UAE	39	Turkey	39

Source: Joint Commission International, 2013.

Saudi Arabia has various Medical Cities throughout the country, including King Fahd Medical City in Riyadh, King Abdullah Medical City, King Faisal Medical City, Prince

Mohammed Bin Abdulaziz Medical City in AL Madinah, and the King Khalid Medical City in Riyadh, to fulfill the medical needs of patients in different parts of the country [3].

This paper is organized as follows. Section 1 is the introduction, and sections 2, 3, and 4 discuss the study importance and objectives, research questions and literature review, respectively. Section 5 describes the methodology. Research analyses, discussions, and conclusions are addressed in sections 6, 7, 8, and 9. Section 10 offers recommendations, and section 11 lists the bibliography.

II. STUDY IMPORTANCE AND OBJECTIVES

The purpose of this research is to make a comprehensive and brief case to support the idea that the medical tourism industry can have a positive impact on the Saudi economy. The main objectives of the study are as follows:

1. Evaluate the medical tourism effect on the tourism sector in the KSA as the tourism sector is the second biggest contributor to the GDP.
2. Examine the impact of current medical tourism on employment.
3. Assess the contribution of medical tourism on Saudi GDP.
4. Explore the international view of establishing a medical city in the KSA.
5. Determine factors affecting demand for and supply of medical tourism in KSA.

III. RESEARCH QUESTIONS

The research questions for the topic of medical tourism are as follows:

1. Does medical tourism have a significant effect on the tourism sector in the KSA?
2. What is the effect of current medical tourism on the employment rate?
3. What is the contribution of medical tourism to Saudi GDP?
4. Would locals/foreigners consider substituting international tourism if the same standards could be offered within Saudi Arabia?
5. What are the main factors affecting demand for and supply of medical tourism in KSA?

IV. LITERATURE REVIEW

Global Medical Tourism

Medical tourism is a very profitable market. Over 35 million trips are made each year for medical treatment. Moreover, the international medical tourism industry is valued at \$439 billion with a high positive prospective for the future. Furthermore, some countries around the globe have turned medical tourism into a nationwide industry with a hefty

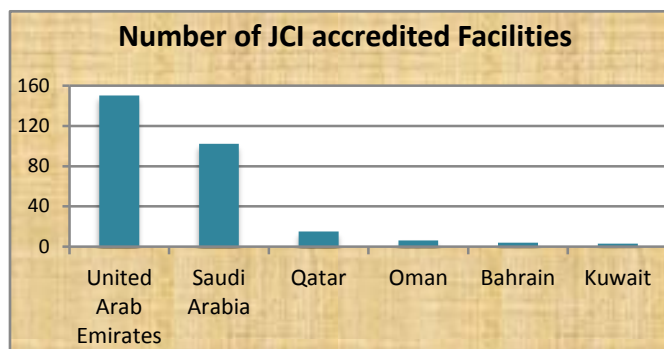


Figure 1. Number of JCI Accredited Facilities in 2016
 Source: Joint Commission International, 2013 [11].

contribution to the country’s GDP [4]. Asian countries such as India, Malaysia, Singapore and Thailand have dominated in their regions while Middle Eastern countries such as the United Arab Emirates and Jordan have a stronghold in the Middle-East and North Africa region (MENA). The abovementioned countries have greatly benefitted from medical tourism. For instance, the medical tourism industry of India is worth \$3 billion and is projected to reach \$8 billion by 2020 [5].

The impact of tourism, in general, on labor wage and employment has been examined, and it has been proven that the number of arrivals for tourism has a positive and significant impact on labor wage and employment [6]. In a country where migrants form 33% of the total population such as Saudi Arabia, there might be a positive association between migration and tourism, according to research by [7, 8, 9, 10].

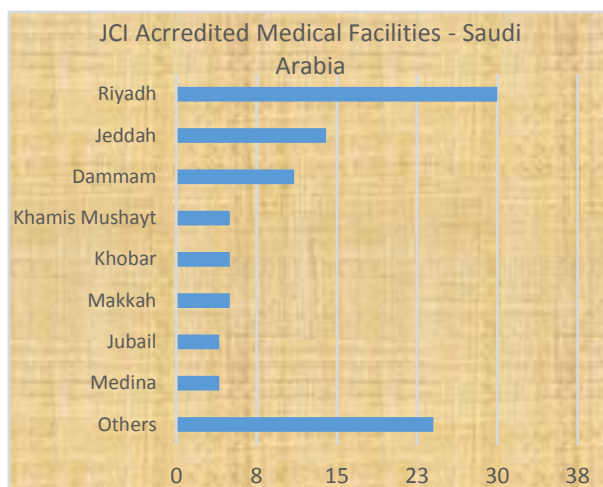


Figure 2. Accredited Medical Facilities - Saudi Arabia
 Source: Joint Commission International, 2013 [11].

Medical Tourism in the Middle East

A widely adopted accrediting procedure adopted by hospitals globally is the Joint Commission International (JCI) Accreditation, which is a US body that accredits hospitals globally. The JCI also accredits a great many hospitals in the KSA and the Middle East.

The table below gives the number of JCI accredited facilities GCC, Figure 1.

Medical Tourism in Saudi Arabia

Saudi Arabia has increased accredited medical facilities for prospective patients to select from [12]. According to the JCI, Saudi Arabia has over 100 medical facilities that are JCI-accredited with 30% in Riyadh, 19% in Jeddah/Makkah, and 11% in Dammam, and the remaining 40% are in different parts of the Kingdom, Figure 2.

Despite having the potential, Saudi Arabia’s medical tourism industry is limited and conservative. Most visitors from other countries enter Saudi Arabia for holy purposes [2]. However, the recent drop in crude oil prices for a few years has forced Saudi Arabia to turn its eyes toward other industries, and one of them is the tourism industry. Presently, visa-free entry is allowed to citizens of Kuwait, the UAE, Qatar, Bahrain and Oman [13].

Medical tourism to/in Saudi Arabia is not only dependent on foreign patients but also on domestic patients. There is a market segment in Saudi Arabia comprising patients who seek medical tourism outside their native city or city of residence, but within the country, called domestic medical tourism [14].

Currently, Saudi Arabia has 295 hospitals across different parts of the country with a total of 38,970 beds. Moreover, expansion plans are also under execution for the King Fahd Medical City in Riyadh, King Abdullah Medical City, King Faisal Medical City, Prince Mohammed Bin Abdul Aziz Medical City and the King Khalid Medical City to cater to the medical needs of different geographical regions of the country. In addition, the budget expenditure for Saudi Arabia’s healthcare sector has

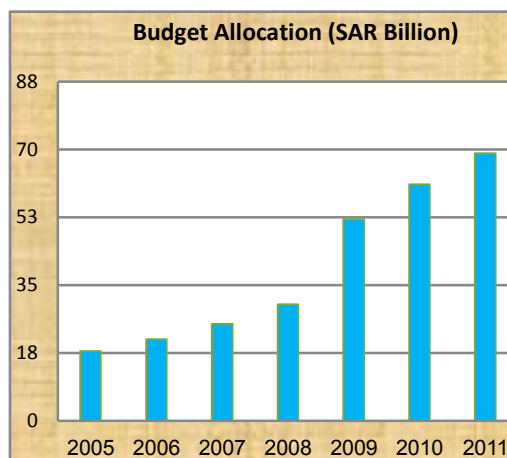


Figure 3. Healthcare Budget Allocation
 Source: Colliers International, 2012 [15].

been continuously increasing. In 2011, SR 69 billion was spent on the healthcare sector, accounting for 12% of the government budget, Figure 3.

V. RESEARCH METHODOLOGY

Empirical Framework

Saudi Arabia boasts numerous accredited health care facilities for potential patients to choose from [11]. The number of Joint Commission International-accredited Saudi medical facilities is over 100, with 30% in Riyadh, 19% in Jeddah/Makkah, and 11% in Dammam, and the remaining 40% dispersed around the Kingdom.

Saudi Arabia’s tourism industry is limited and conservative. Most visitors to the country enter the country for pilgrimage

purposes [2]. However, due to recent drops in crude oil prices over the last few years, Saudi Arabia is seizing the opportunity to develop its tourism sector.

Currently, only citizens of the GCC, which includes Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman, can enter Saudi Arabia visa-free [13]. Therefore, developing the medical tourism project in Saudi Arabia will focus primarily on the market segment of prospective medical tourists that are Middle East citizens, reaching out later to other countries based on the developments of Saudi Arabia's tourism law. Nonetheless, Saudi Arabia's medical tourism industry is showing slight growth and more efforts need to be taken to develop this industry and allow it to prosper.

Research Design

This recent research is based on empirical study in order to examine the scope of medical tourism in Saudi Arabia and its impact on various economic indicators.

This research has been conducted by obtaining literature reviews from previous research work, and it will proceed further with quantitative primary method. For conducting primary research, a cross-sectional study will be used, and data will be gathered by field survey through questionnaires. To obtain reliable responses, the questionnaire will be completed online following a self-administered approach. Moreover, in-depth interviews with doctors, nurses and medical staff of foreign countries will be conducted in order to determine the behavior of patients who come to their countries for medical tourism.

The instrument used in this research is a questionnaire for conducting the survey and in-depth interviews with doctors, nurses and other medical staff. The questionnaire is divided into two sections.

One section contains questions for locals of Saudi Arabia. The main purpose of this section is to examine the behavior of Saudis and understand their thought process when looking for options for medical tourism. This questionnaire is a collection of foreign and domestic viewpoints as well because domestic medical tourism is also very important and a great source of contribution to GDP.

The other section contains questions for people other than Saudis. The main purpose of this section is to examine the behavior of foreigners when they choose a country for medical treatment. This section is very important because a large market of Saudi medical tourism will be dependent on international medical tourists. The objective of this questionnaire is to determine what makes international medical tourists go to a country for medical tourism.

The in-depth interviews provide the perspective of doctors, nurses and other medical staff. The interviews are conducted with foreign doctors, nurses and medical staff to examine the behavior of medical tourists. Doctors, nurses and medical staff are directly connected with patients from around the world, and thus, their perspectives give a birds-eye view as to why patients come to their respective countries for medical tourism. The interview questions are designed to obtain the responses of Saudi and non-Saudi experts on the behavior of Saudi patients, as domestic tourism is also an integral part of this research.

The mixture of questionnaires and in-depth interviews will cover all important aspects of our primary research and help with statistical procedures.

Procedure of Data Collection Model

The data have been partially collected by conducting a survey through questionnaires. The questionnaire was answered by using an online mode with Google Form or by conducting structured interviews in order to maintain a high responses rate and data reliability. The questionnaire is structured in design, and it takes approximately 15 minutes to complete. In-depth interviews were conducted using various means, including structured interviews in the form of audio interviews, written interviews, and online interviews.

Secondary data were collected to identify the relationship among GDP, tourism in Saudi Arabia, and the impact on the employment level. Secondary data have been collected from journals and official government bodies such as the General Authority of Statistics (GASTAT), Saudi Arabian Monetary Agency (SAMA), Ministry of Health, and MAS.

VI. RESEARCH ANALYSIS

Primary Research Analysis

A brief primary research was conducted to determine the behavior of Saudis as well as Non-Saudis as to what their response is toward medical tourism and how they will react if certain changes are made. We selected the sample size on the basis of the target market, as the target market for medical tourism in Saudi Arabia will be local Saudis and foreign Muslims because Muslims will be the first ones to react since Saudi Arabia is very dear to Muslims due to the presence of important religious places. Therefore, the responses are summarized as follow.

Analysis of Saudi Responses

The questionnaire was circulated to 204 high-income Saudis by using e-forms such as Google forms. In Google forms, respondents were given an opportunity to choose more than one option in some of the responses. The survey¹ results are analyzed as follows:

First: The survey shows that 47.5% of the Saudis were not familiar with the term medical tourism. The reason why such a huge number of respondents do not know about the term might be that Saudi Arabia has been a country driven by oil resources for decades.

Second: Based on the survey results, approximately 38% of Saudis prefer to go to Europe for medical services, perhaps because Europe is the heart of human civilization through the wide range of systems being run at national levels. Europe provides a variety of health care services, which are funded through taxation. People are also offered European Health Insurance Cards; when there is an emergency, this card provides insurance to particular individuals. After Europe, approximately 32% of Saudis chose North America for medical services, as the United States of America is the largest country in the World, and it provides a vast number of medical services to its citizens as well as to foreigners. Hospitals in North America have well trained doctors and high-quality service. People do not only opt for medical tourism to obtain medical treatment but also to explore the host country.

North America has various landmarks and places for visitors to enjoy or even recover. Some 17% of the respondents

preferred to seek care in Saudi Arabia, and the reason might be that the respondents are mostly Saudis and some Saudis still have faith in Saudi Arabian medical facilities. However, only 2% of the people prefer to go to Middle Eastern countries, perhaps because the medical tourism market of Middle East is very popular and is expensive except for Jordan. Moreover, people expect high-quality of services when they go abroad for their medical treatment.

Third: The survey shows that 26.42% of Saudis prefer to go to their chosen countries on the criteria of specialized care. Specialized care is provided to patients who are suffering from diseases that are rare. Hospitals abroad are good in treating specialized conditions after the conditions have grown or developed. In an interview with a specialized expert, a consultant in the National Guard hospital / Harvard Grad, he said that people go aboard for definitive care and to seek solutions for their problems; 22.9% of the sample prefer to travel to their chosen country mainly because of the medical staff. According to another specialized expert, who is a specialist in the King Saud Medical Complex Hospital, most Saudis believe that the treatment that is being offered abroad is better than the one that is being offered in the KSA because there are no delays in the appointment, follow-ups are provided, and the patient does not have to wait months to obtain his/her appointment. Furthermore, the interviewed expert believes that the accuracy of the clinical diagnosis and treatments abroad are relatively excellent if compared to that in KSA. Only 3.1% people regard the cost of treatment as a variable; however, in places such as America or Europe, the cost is very high in regard to medical services. A single treatment is expensive, which makes it difficult for a person who does not have health insurance. Approximately 3.1% of the respondents want to visit the country that provides the least expensive option.

Fourth: The survey shows that approximately 24.83% of the people think that the Saudi Government should work on their health care reputation like countries such as Jordan, Thailand, the UAE and Gulf states, which pay much attention to the health care provided in their respective counties and therefore have secured a good place in the market. Additionally, in 2011, the UAE witnessed an increase in the number of patients coming to seek medical treatment.

Medical care in Saudi Arabia is very inefficient, particularly in the government sector, as they do not manage the allocated budget properly. As per the Social and Economic Plan, the medical sector can be semi privatized because Saudi Arabia has funds but does not have expertise. It can be semi-privatized with an organization or group of organizations that have medical expertise so that it will give better training to the staff. Some 16.77% to 19.46% of the people believe that the Saudi government should consider investigating the situation of its medical staff and specialized care provided in the hospitals, as in regard to inbound medical tourism, Saudi Arabia has not made a significant mark in that area and needs to make efforts and make effective plans accordingly. As in the nonmajor cities, we have limited resources, so this is always causing a delay for major facilities, and a critical case can take months. There are untrained staff, as there is a lack of postemployment training. Only 0.67% of the people think that the Saudi government should improve its management

system and the entire business model. Saudi Arabia does not have a well-developed system of high-quality organ transplants facilities. Hospitals do not have adequate highly qualified and professional doctors with the most advanced technology and full equipped health care units. Physiotherapy is a recently introduced specialty of care but unfortunately, the KSA lacks knowledge and experience in it. The Saudi government has witnessed limitations in specialty care such as that for ovarian cancer. Hence, they should manage their budget and send the specialists abroad to complete their studies.

Fifth: The study showed that 26.4% of the people prefer to travel abroad for oncology (cancer related treatment). Cancer is a dangerous disease, and if not treated at the proper stage, it can cause death; therefore, an individual would prefer to travel to America or Western Europe for oncology treatment, as they have professional oncology hospitals with trained medical staff, research centers, advanced treatment facilities and access to medication. The survey showed that 19.43% of respondents prefer to travel abroad to seek diagnosis (modern diagnosis equipment or advanced laboratory tests), as early diagnosis can help save lives: the sooner it is known, the sooner the treatment can occur. America and Europe have advanced diagnosis equipment, and they provide accurate and correct information. Saudi Arabia does not have advanced organ transplant facilities, which is obvious from the responses, as 5.92% favor traveling abroad for any needed organ transplant. Only 0.23% of the people would want to travel to other countries for IVF or pregnancy assistance, as Saudi Arab has professional gynecologists available in the hospitals and people prefer to seek them for their treatment instead of spending a fortune to go to other countries. There is another limitation in Saudi Arabia, which is the limited number of burn centers, and it does not cater to patients with severe injuries. Burn centers treat patients with severe burns. The interviewed specialists say that there are only three centers with centralized treatment for severe injuries, which are present in the capital. Only one room is available for trauma cases each week, while the number of cases exceed 60 each week.

Sixth: The survey showed that 62% of Saudis are willing to spend 5%-15% of their income for medical health care; 20.48% of the people are willing to spend 0-5% of their income for health care services; 10.24% of the people are not willing to sacrifice at all from their income for medical services; and approximately 6.8% of the people are willing to sacrifice even more from their income for a better health care system or effective medical treatment and services.

Seventh: The study shows that 41.66% of the people are willing to spend SAR 0-50,001 for medical tourism; 25.98% of the people are willing to go slightly higher and spend SAR 50,001-100,00 to go abroad and seek medical care; and 15.19% of the people are willing to go even higher and spend SAR 150,001-200,000 from their income, as they will expect superior quality treatment in whichever country they will choose for medical services. However, only 0.49% of the people are willing to pay whatever is required for medical tourism.

Analysis of Non-Saudi Responses

The questionnaire was circulated to 128 people from around the world by using e-forms such as Google forms. We selected the sample size by categorizing the target market as described earlier. In Google forms, respondents were given an opportunity to choose more than one option in some of the responses. The survey² results are analyzed as follows.

First: The study proves that approximately 28.12% of the people prefer to travel to Saudi Arabia for medical tourism for physical and spiritual health, as one reason might be that mostly the respondents were from Islamic countries, as well as there is a spiritual need when a person is ill. Religious tourism is the backbone of Saudi Arabia, as it contains the two most holy places, namely, Makkah and Medina, so usually people seek tourism packages with medical facilities packaged with Umrah or maybe even Hajj. Saudi Arabia also has many medical facilities, with a total of 289 hospitals, 55,000 professional physicians and 55,724 beds. While 34.33% of the people refused to travel to Saudi Arabia for medical purposes, as patients with serious diseases travel to centers of excellence to undergo comprehensive treatment. There are many barriers, such as difficult visa processes, as there is usually a delay in obtaining a visa, which is not reasonable for someone who wants to seek early diagnosis. Inbound medical tourism has not as yet emerged in Saudi Arabia. In addition, Saudi Arabia does not have an affective campaign worldwide. There are also limited numbers of operating rooms in the hospitals. There is limited rehab access in Saudi Arabia and limited variation in medical facilities and medical in major and small cities that are highly populated, such as Najran, Jizan, Abha and the Northern region. The country also lacks specialists in all fields, and they have less experience; therefore, the medical centers cannot offer the best treatment. The survey showed that 37.5% of the people were confused, and thus, they answered maybe.

Second: The survey showed that 42.18% of the people chose Europe for international health tours, as it provides high-quality medical services, and most of the doctors usually speak English, so language is not seen as a barrier. Moreover, Europe's universe health care system caters to everyone, so even if a foreigner is sick, he/she will receive full treatment. A total of 27.43% of respondents prefer to go to the Middle East for international health tours; as the UAE and Turkey are the largest Middle Eastern medical device markets, they have their own medical device regulations. Middle Eastern countries usually import their medical devices from the US or Europe, so quality is guaranteed. Additionally, if a person seeks to recover after treatment, the US is the best place to travel to; thus, approximately 15.62% of the people preferred to go to the US for international medical tours, while the rest opted for Asia and Africa.

Third: The survey shows that 19.75% of the people are influenced by a country's environment, as people are usually impressed by the superior lifestyle, weather, economic condition, and law and order condition of any country. It reduces stress and improves health. Additionally, 18.51% of the people are influenced by the medical staff of the other countries, as countries in Europe provide high quality medical services, and India and Thailand provide good quality medical services as well but at an affordable price.

Cost of treatment is also a factor that influenced 11.41% of the people, as not everyone can afford high price medical treatment; for this, they search for a specific country that is cost effective, while 4.6% of the people are influenced by word of mouth and opt to choose a country.

Fourth: Some 23.82% of the people wanted to go to abroad for surgery; as surgery for treatment of injuries is done by medical instruments or machines, there are various types of surgeries, and there is much risk involved in each type; therefore, people who want better quality treatment with little risk attached to surgery would choose to travel abroad to obtain the right and effective treatment, while approximately 23.82% wanted to travel abroad for diagnosis, as the diagnosis is important to know before the actual treatment starts, so one can recover from a potentially lethal disease. Some 17% of the people wanted to travel to abroad for cancer related treatment, as not all countries have specialized oncologists or hospitals that provide early diagnosis or even treatment and since cancer needs to be treated critically and as early as possible, as otherwise it can lead to death. Another 10.5% of the people opted to go to abroad for cardiovascular diseases such as heart diseases, stroke and diabetes because these diseases require specialized treatment facilities and rehabilitation processes. Specialized care and a country's natural environment play a vital role in rehabilitation.

Fifth: Whenever an individual decides to travel abroad, it is necessary for one to look at all the barriers involved, as from the survey, approximately 23.41% of the people thought that language is a major barrier in traveling to Saudi Arabia. Arabic is the native language of Saudi Arabia. A foreigner might face language issues during transportation, accommodation, and navigation, etc. Some 17.07% of the people thought that Saudi Arabia lacks the international standards necessary for health facilities, as medical tourism in the KSA is neglected by the private sector and the government itself, with no inbound medical tourism business present in the country. Saudi Arabia also has not collaborated with foreign governments that would also need to monitor their public hospitals. Some 16.58% of the people said Saudi Arabia has a strict policy for visas for non-Muslims; as Saudi Arabia is the major religious place for Muslims, they therefore do not allow easy access to non-Muslims, while 15.12% of the people thought that the environment was unfriendly mainly because of their strict rules and policies, particularly for women.

Sixth: The study shows that 57.3% of the people wanted to visit Saudi Arabia in the near future for job opportunities, as the biggest source of income is from oil, followed by income from tourism. In addition, it is predicted that their income would reach US\$ 63.7 billion in 2019 from international travel. Some 26.22% of the people wanted to travel to Saudi Arabia in the future in order to meet with their family members or other relatives, while fewer respondents chose education, health tourism and hajj as an important factor for travel to Saudi Arabia.

Seventh: Some 36.2% would likely visit Saudi Arabia if it offered international standards of health tourism. Some 26.6% people were very likely to travel there if such developments occurred in the future, and 14.51% would not want to go regardless whether it offered international health tourism,

while 20.96% of the people were uncertain about their feelings about travelling to Saudi Arabia; however, a small number wanted to travel to Saudi Arabia if the trip was subsidized by the government, which is very unlikely to happen.

Eighth: Approximately 50.76% of the people did not know how much they would have to spend on their treatment in Saudi Arabia; this might be due to a lack of research or awareness among the people. Some 23.80% of the people would spend as much as needed, as they might have already set a budget for medical care or treatment. People who were willing to spend SAR 50,001-100,000 from their income for treatment in Saudi Arabia amounted to 9.52%, while 8.73% of the people were willing to spend SAR 0-50,000. However, the rest did not want to avail themselves of such services or did not believe that individuals should be charged for healthcare services.

Quantitative Analysis

Quantitative analysis is done to identify the relationship between two variables and the dependency of one variable on

another. Quantitative analysis was conducted to cover any possible shortcomings of the qualitative analysis to accurately achieve the research objectives. Furthermore, quantitative analysis was considered because there is a possibility that some research questions were not found through qualitative research, such as the impact of tourism on GDP.

The Model

Let,

T_t : Total employment in time t

T_{t-1} : Total employment in time $t-1$

A_t : Number of arrivals in time t

M_t : Employment in tourism sector in time t

The following regression equations will be estimated:

$$T_t = \alpha + \beta_1 T_{t-1} + \beta_2 A_t + U_t \tag{1}$$

$$M_t = \gamma_0 + \gamma_1 A_t + U_t \tag{2}$$

The regression results of equation (1) are shown in Table 2.

Table 2. Regression results with initial values of total employment (Tt-1) and number of arrivals (At), Dependent Variable: Total employment (Tt)

Explanatory Variable	Coefficient	t-value	p-value	R ²	Adjusted R ²
Constant	4144367	2.60	0.03	0.80	0.75
T _{t-1}	0.08	0.23	0.82		
A _t	0.33	2.25	0.05		

Source: Author’s estimations based on data collected from MAS and Trading Economics.

Since the model is a multiple regression model, we will consider Adjusted-R² instead of R². The model represents the

goodness of fit. Clearly, tourism has a positive and significant impact on employment in Saudi Arabia.

Table 3 shows the regression results for equation (2).

Table 3. Regression results: Number of arrivals (A_t) is the independent variable. Dependent Variable is: Employment in tourism sector (M_t).

Explanatory Variable	Coefficient	t-value	p-value	R ²	Significance F
Constant	310649.6	2.94	0.016	0.36	0.05
A _t	0.02	2.24	0.051		

Source: Author’s estimations based on data collected from Trading Economics and MAS.

The coefficient of determination (R²) is 0.36. This R² is low because the regression equation includes only one explanatory variable (A_t). Despite the small value of R², we can rely on the model because the Significance-F is not greater than 0.05, and hence, the model represents the goodness of fit. More importantly, the regression results show that employment in the tourism sector is positively affected by the number of tourists, with a 95% confidence level.

In-Depth Interviews

The in-depth interviews are described in detail here.

Interview with Assistant Deputy Minister of Health Investment Development

An interview with the Assistant Deputy Minister of Health Investment Development was conducted to determine what a government official has in mind about medical tourism. The government of KSA gave the interviewee two years to come up with a proposal for medical tourism. He said that he told the government that medical tourism cannot flourish in the KSA because the KSA has a law in which the Ministry has the authority to select hospitals for patients. In addition, patients are not allowed to stay unnecessarily after the

necessary and primary care. However, he is convinced that medical tourism is possible in the Kingdom of Saudi Arabia. When he expressed his opinion, medical tourism was not possible because the country was totally oil driven and nobody was ready to own the medical tourism sector but now, Saudi Arabia is looking toward diversifying its economy and there are owners to own the initiative.

The Assistant Deputy Minister of Health Investment Development identified some of the weaknesses in the medical sector in Saudi Arabia. He identified that there is a shortage of staff in Saudi Arabia. Saudi Arabia is dependent upon foreign nurses, doctors and medical staff. If Saudi Arabia has to compete and flourish, local nurses and staff have to be trained because prices in other Middle Eastern countries are low such as in Jordan, which has 100% local medical faculty. He believes that Saudi Arabia should also build infrastructure to cater to patients with advanced diseases such as cancer as well as facilities for rehabilitation programs such as drug addiction, as this is easy and achievable.

Interview with a Specialist Professor from Bern University Hospital in Switzerland

An interview was conducted with a specialized professor in the Bern Hospital to determine his opinion on the topic. He noted that patients' main priority is good climate, safety and personal service in choosing a medical tourism destination. These features can be found in medical hotels and private clinics dedicated to wellness.

Saudi Arabia has aimed at diversifying its sources of revenue and modernization, which includes the development of the Red Sea Beach Resort. The Red Sea Beach Project could be an ideal location for the hotels and clinic structures dedicated to wellbeing and cosmetic improvement, thus creating the flow of medical tourists to the Kingdom.

The interviewed specialist (as indicated above) identified that the patients with serious diseases travel mostly to university hospitals with modern technology and with experience in each specialty. For famous university hospitals, these patients are burdens, rather than money generators; however, most well-known university medical centers and other nonprofit institutions have well organized international patient services. In most cases, the motivation is to enhance their reputation as centers of excellence and to emerge above the competition. The immediate consequence of an increased reputation is an increase in government funding. An example of this undisputable fact is Inselspital, the University Hospital of Bern. It is one of the top hospitals in Switzerland with relevance in most specialties. Its government supported budget is in the order of 1 billion Swiss Francs a year. The international activity generates a very small fraction of the total budget. Inselspital is a great and famous center because of its staff and equipment. Its staff includes not only doctors but technical personnel and nurses. The competence of the staff working at a nonprofit institution is the backbone of the international reputation.

Interview with Mayo Clinic

An interview was conducted with representatives of the Mayo Clinic. They identified that the reputation and brand of any particular hospital or clinic are differentiated from other institutions. Patients from abroad are frequently impressed by the proper system of the tertiary care and well-established integrated care model. People prefer medical services that are nearby, as location plays an important role. A good environment is also a factor that attracts international patients to any hospital, along with the post-management care and cost of therapy.

They also identified the reasons why the Mayo Clinic is considered one of the best hospitals. The medical staff members are trained by either the doctors or the residents. They hire more professional doctors who are able to practice medicine efficiently. The core concept of a hospital should be the putting of the needs of the patients above everything. International conference exposure is given to the staff members, as it will expand the brand recognition. An original curriculum system can be easily developed through online methods, as medical courses are required for medical licensure.

They were very positive about the scope of medical tourism in Saudi Arabia and said that the Red Sea Medical Project will provide success for medical tourism in the KSA. The

KSA already has high quality hospitals. To improve themselves, they should train their doctors and nurses, as well as provide them with international exposure. An international medical insurance system should be developed and should be used by Saudi citizens or even other people from the Middle East. Through the international medical insurance system, the government of the KSA would be in touch with other foreign markets, and it could become a huge source of revenue for the KSA.

Findings from In-depth Interviews

Interviewed experts were convinced that reputation, perception and referral play an important role when a patient opts for a medical tourism destination. Saudi Arabia has a relatively poor reputation in the world in regard to medical treatment. According to some of the interviewees, Saudi Arabia has the best equipment and best medical facilities available, where there are more than 100 Saudi hospitals that have accreditation. The main problem is that the locals do not trust in the Saudi Medical System and according to the specialized interviewee, two reasons stand out, which are delays in scheduling the appointments and the accuracy of the clinical diagnosis and the treatment is not 100%. The main reason behind the first reason is mismanagement, as identified by interviewees who identified the Saudi Medical System as a "disorganized healthcare system" because the hospitals are run on the so-called American model. Specialized interviewees rightly identified the main reason behind inaccuracy in clinical diagnosis and treatment. Diseases or variables in diseases are changing, and equipment to treat and diagnose those diseases are also changing. Specialized interviewees identified that Saudi Arabia is a follower, as whatever new medical equipment is invented in the West reaches the KSA after a year or two and that causes inaccuracy because diseases do not wait one year to travel from one continent to another. One of the reasons is that Saudi Arabia is an importer of medical equipment. It does not have its own research and development centers. According to another specialized interviewee, people also check out factors such as the availability of research centers in hospitals before choosing a hospital. According to the Global Buyers Survey, 54% of the patients are referred to a health care provider by a Medical Tourism Facilitator/insurance company or the government. Some 16% are referred by a physician. Some 22% of patients are self-directed, finding a provider either by doing Internet research or by word of mouth.

Staff training is necessary because there is much expensive and complex equipment imported by the Saudi government, but the staff is not trained well enough to operate the equipment, according to the specialized interviewees [16].

The main problem in Saudi Arabia is the underestimation and neglect of medical tourism by the government and the private sector. Saudi Arabia, according to the opinion of medical tour operators, has not been able to build its own position in the medical tourism sector or business. The only solution to this problem is to construct a long-term plan by the respective authorities or government and rebuild the infrastructure for medical tourism.

Even after achieving many benefits from E-health, there is a need to pay particular attention to the foreign patients who visit just for the sole propose to obtain medical attention in

Saudi Arabia. For this, the requirements are complete and proper information about where the patients want to visit for their medical treatment; a proper and more systematic national health information system should be arranged, which could also be beneficial for the international community.

In Saudi Arabia, it is quite arduous to obtain visa for medical purposes; there should not be a delay, as it is unfavorable for those patients who visit with early diagnosis and medical treatment being their top priority. To reduce this delay, the government should see the importance of emerging medical tourism and then make visa policies accordingly.

The most important thing is to maintain cogent partnerships with medical tour operators, as these respective firms specialize in travel facilities and are able to assist in the services throughout the entire trip. The medical units can take the responsibility for scheduling appointments, booking rooms in hotels and assisting people regarding the process to obtain a medical visa.

As mentioned earlier, Saudi Arabia has enough medical facilities to treat complex diseases, but it lacks medical staff and doctors.

All experts are in agreement that a good environment is also key to attracting international patients to the country because people do not only check medical facilities and the reputation of hospitals but also the overall environment, including the climate, lifestyle, natural beauty and tourist locations because environment plays an important role in after treatment phase of the patient. Rehabilitation is very important after surgery and a good environment helps in the rehabilitation process. The main priority of medical tourists is a good climate, safety and personal service. This can be found in “medical hotels” and “private clinics” dedicated to “wellness”.

According to specialized experts, the current system works on a patient-oriented system. Privatization would convert this into a recovery-oriented system. Privatization would lead to a better healthcare sector, better training, and the adoption of standardized quality assurance measures, and research and development.

VII. RESEARCH FINDINGS AND DISCUSSION

The different research methodologies followed in this paper have supported the theory in various senses. Although some research works have not reached clear-cut conclusions about the factors enhancing medical tourism, this empirical work adds to the literature that indicates the key determinants of demand for and supply of medical tourism services. Furthermore, this paper examines quantitatively the impact of medical tourism on economic activity and employment.

Taking as a case a country from among the G-20 countries, namely, Saudi Arabia, this study identifies the key factors affecting demand for medical tourism in Saudi Arabia. On the one hand, factors affecting demand for medical tourism include the following factors:

- The prices of medical services are relatively high in Saudi Arabia, compared to the other countries in the MENA region, which reduces the demand for medical tourism within Saudi Arabia.
- Although the per capita income in Saudi Arabia is one of the highest in the world, the lower income levels in the other MENA countries decrease the demand for medical tourism in Saudi Arabia.

- Prices of complementary services and goods such as the prices of medical equipment and medicines are relatively overly high in Saudi Arabia, which reduces the demand for Saudi medical tourism services.
- In some cases, Saudis prefer medical treatment outside Saudi Arabia to maintain privacy, which is based on cultural and traditional factors. This also reduces the demand for medical tourism inside Saudi Arabia. In some other cases, non-Saudis do not prefer medical tourism in Saudi Arabia due to the bad weather. In other words, international consumers' preferences are not in favor of medical tourism in Saudi Arabia, and, in many cases, Saudis do not demand the domestic medical tourism services and travel abroad for medical tourism to seek a better quality of medical services that Saudi Arabia lacks.
- The only clear factor boosting the demand for medical tourism in Saudi Arabia is Government support and its plans.

Based on the above-determined factors affecting demand for medical tourism in Saudi Arabia, the following equation of demand for medical tourism can be identified:

$$Q_{dmtt} = \Omega_t - \lambda_1 P_{mtt} + \lambda_2 M_t + \lambda_3 P_{ct} + \lambda_4 C_{tpt} + \lambda_5 G_t + U_t$$

where,

Q_{dmtt} represents the demand for medical tourism in Saudi Arabia in time t ,

P_{mtt} represents the price of medical services in Saudi Arabia,

M_t represents the level of per capita income in MENA region in time t ,

P_{ct} represents complementary and input requirements for domestic medical services and medicine in time t ,

C_{tpt} represents the consumers' preferences and tastes in time t ,

G_t represents government support and subsidization policies for medical tourism in time t and,

Ω , λ 's are constant and variable coefficients, respectively, and,

U_t represents disturbance, stochastic, or error term.

The supply of medical tourism in Saudi Arabia, on the other hand, is affected by several key factors, including the following:

- A contributing factor for the supply of medical tourism in Saudi Arabia is the relatively high prices of medical services and medicines (P_{mtt}).
- One of the major obstacles facing the supply of medical tourism, particularly foreign medical tourism in Saudi Arabia, is the relatively cheaper alternatives in the international medical tourism markets.
- The main reason for the high prices of medical tourism in Saudi Arabia is the input cost of medical tourism production (P_{imtt}). This resulted in higher prices of medical tourism in Saudi Arabia, reducing the competitiveness of Saudi medical tourism services in comparison with international markets.
- Although the medical services in Saudi Arabia employs advanced imported technologies, this does not reduce the medical services production cost due to the lack of efficient human capital and effective management (H_t) in the field.
- The supply of medical services in the country is enhanced due to the large number of medical services providers (N_t).

f. Government support (G_t) by covering medical insurance within Saudi Arabia for all Saudis in both the private and public sectors has resulted in widening the gap between demand for and supply of medical tourism in the country, in favor of the supply side.

Thus, the supply of medical tourism services in the country can be estimated using the following supply equation:

$$Q_{smtt} = \delta_t + \psi_1 P_{mtt} - \psi_2 P_{imtt} - \psi_3 H_t + \psi_4 N_t + \psi_5 G_t + U_t$$

where, δ_t , ψ_1 , ψ_2 , ψ_3 , ψ_4 , and ψ_5 are parameters, and U_t is the stochastic term (error).

Future research on the topic in question should focus on two dimensions: first, empirically examining the demand and supply functions and identifying the medical tourism market gap at the country level; second, empirically examining the gap between demand for and supply of medical tourism at a global level.

This paper empirically examines the impact of medical tourism on economic activity and employment level. The paper's findings support the theory of tourism economics in the sense that general tourism and medical tourism significantly boost economic growth and employment.

Notes

¹Due to space constraint, detailed questionnaire's responses can be provided in a separate appendix (Appendix 1).

²Due to space constraint, detailed questionnaire responses are provided in a separate appendix (Appendix 2).

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