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DATA-DRIVEN MARKET SEGMENTATION: THE CASE OF MEDICAL TOURISTS IN LEBANON

MARKET TRŽIŠTE

SEGMENTACIJA TRŽIŠTA TEMELJENA NA PODACIMA: SLUČAJ MEDICINSKIH TURISTA U LIBANONU

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Preliminary communication

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Abstract

Purpose – This research aims to obtain an in-depth understanding of medical tourists' segments and the variations that exist within them as tourists and patients.

Design/Methodology/Approach – A data-driven segmentation approach using the two-step cluster analysis technique was applied on a sample of 212 participants visiting Lebanon for medical purposes. The research instruments combine travel motivation variables, along with socio-demographic, geographic, and behavioral characteristics.

Findings and implications – The results identified two distinct segments: "the international patients" and "the elective medical tourists." The delineated segments have significant implications for scholars, allowing them to understand the profile of tourists and their associated motivations and behaviors better. They can guide medical tourism service providers, marketers, and destination managers in providing specific medical tourism products and services that meet the expectations of each segment.

Limitations – Limitations were experienced during the data collection process due to a lack of collaboration

Sažetak

Svrha – Cilj istraživanja jest omogućiti dubinsko razumijevanje segmenata medicinskih turista i varijacija koje postoje unutar njih kao turista i pacijenata.

Metodološki pristup – Primijenjen je pristup segmentaciji na temelju podataka korištenjem tehnike klasterne analize u dva koraka. Istraživački instrument kombinira varijable motivacija za putovanje zajedno sa sociodemografskim, zemljopisnim i bihevioralnim obilježjima. Primijenjen je na uzorku od 212 ispitanika koji su posjetili Libanon u medicinske svrhe.

Rezultati i implikacije – Rezultati su identificirali dva različita segmenta, a to su „međunarodni pacijenti“ i „medicinski turisti po izboru“. Opisani segmenti imaju značajne implikacije za znanstvenike omogućujući im razumijevanje profila turista i s njima povezane motivacije i ponašanja. Oni mogu usmjeravati pružatelje usluga medicinskog turizma, marketinške stručnjake i upravitelje destinacijom u pružanju specifičnih proizvoda i usluga medicinskog turizma koji ispunjavaju očekivanja svakog segmenta.

Ograničenja – Tijekom prikupljanja podataka došlo je do ograničenja zbog nedostatka suradnje i promptnih

and prompt responses by some medical centers, as well as the political and economic contexts of Lebanon that discouraged tourism inflow. These limitations prevented the researchers from obtaining a larger sample size.

Originality – There is limited understanding of medical tourists and their diversities in medical tourism literature to date. This study addresses the gap by proposing a new segmentation method in the field of medical tourism that delineates segments by investigating medical tourists' travel motivations in line with their characteristics.

Keywords – Lebanon, medical tourists, motivations, data-driven segmentation, typology

odgovora nekih medicinskih centara, kao i zbog političkog i gospodarskog konteksta Libanona koji je obeshrabrio priljev turizma. Ova su ograničenja otežala postizanje većeg uzorka.

Doprinos – Do sada je u literaturi o medicinskom turizmu još uvijek ograničeno duboko razumijevanje medicinskih turista i njihovih različitosti. Ova studija adresira taj istraživački jaz predlažući novu metodu segmentacije u medicinskom turizmu koja opisuje segmente istražujući motivacije putovanja medicinskih turista u skladu s njihovim obilježjima.

Ključne riječi – Libanon, medicinski turisti, motivacije, segmentacija na temelju podataka, tipologija

1. INTRODUCTION

Medical tourism is a rapidly growing industry experiencing a continuous expansion of travel destinations and service providers. The global size of the medical tourism market is yet to be defined precisely; however, it is estimated to range between USD 45.5 billion and USD 72 billion and is expected to grow at an annual rate of 15-25% globally (Patients Beyond Borders, 2018). As more players are entering this niche industry, a deeper empirical understanding of the very market, its consumers, and their characteristics is necessary. This will allow providers, destinations, and practitioners to adapt and plan their services to better meet market needs.

A significant portion of medical tourism studies have investigated the motivations of medical tourists and their reasons for seeking medical care outside their local healthcare systems. However, to date, research on segmentation approaches and their applications in medical tourism remains limited. Wongkit and McKercher (2013) criticized the fact that medical tourists are viewed with no differentiation or segmentation of demand.

Previous studies in the field of medical tourism classified medical tourists into categories using rational (or concrete) segmentation methods, based on fixed factors such as the type of medical treatment pursued and the balance of medical versus leisure activities undertaken (Cormany, 2008; Diethelm Travel's, 2005). While the concrete segmentation approach that is based on fixed criteria highlights a range of categorical diversities among tourists seeking medical care abroad, it limits the understanding of other specifics such as behavioral and motivational varieties. Hence, there may be a corresponding increase in heterogeneity within the same segment, which can impose limitations to the understanding of the medical tourists' behavior and decisions. Empirically, this can result in shortcomings in the provision of adequate medical tourism services. The present study aims to bridge this gap by incorporating a new inductive (or data-driven) approach in

segmenting medical tourists. To the authors' knowledge, this approach, particularly the two-step cluster analysis technique that is applied in this research, has not yet been applied to medical tourism. The process is to obtain, combine, and analyze detailed elements of medical tourists' characteristics and motivations for the purpose of producing the most homogeneous segments possible.

Moreover, the data-driven segmentation approach is not only recent in its application in medical tourism but also allows for a greater depth of understanding of medical tourists, their traits, demands, motivations, expectations, and behavior. A combination of socio-demographic, geographic, and behavioral characteristics, as well as travel motivations that is applied in this study, provides a comprehensive picture of the medical tourist persona, which has not yet been thoroughly investigated or established in medical tourism literature. Hence, the objective of this research is to conduct an in-depth investigation of medical tourists through classifying them in a way that combines a diverse range of characteristics and motivations by incorporating a method that can yield minimum heterogeneity within each segment. The research instruments were extracted from previous research addressing the sociodemographic, geographic, and behavioral characteristics of medical tourists, as well as their travel motivations.

The field research for this study was conducted in Lebanon using a survey questionnaire distributed to a sample of 212 medical tourists. Among the Middle Eastern countries, Lebanon, thanks to being located at a crossroads between Europe, Africa, and Asia, possesses a geographic advantage in terms of tourism opportunities. Moreover, the country has acquired a strong medical reputation particularly in the field of cosmetic surgery and treatment. As reported in the Business Monitor International (BMI, 2018), 1.5 million plastic surgery interventions are conducted each year in Lebanon. Medical tourism is becoming an increasingly important element of Lebanon's tourism in general and its contri-

tribution to the Lebanese economy (Hassan & Noaman, 2015).

The paper is structured as follows. Section one introduces medical tourism and the segmentation of medical tourists. Section two discusses the theoretical framework of the research and presents a literature review of previous work in medical tourism segmentation. Section three goes on to address the applied methodology and the process of data collection, while section four presents the resulting segments and discusses the findings. Section five presents the theoretical contributions and provides managerial recommendations. Finally, section six closes the study with a conclusion, outlining research limitations, and future research avenues.

2. THE THEORETICAL FRAMEWORK

According to Dolnicar (2004), segmentation in tourism is based on two primary approaches: a common-sense (or *a priori*) approach, which divides the population according to prior knowledge, and a data-driven (or *a posteriori*) approach, which allows for a more natural division of the population based on empirical data relating to consumer information. Based on these two approaches and employing two-step segmentation, Dolnicar (2004) presented a “systematics of segmentation” that yields six segmentation concepts. Each concept uses a different combination of common sense and data-driven approaches. This research is based on Dolnicar’s well-established framework.

2.1. Definitions and Classifications

Although it is a niche area of study, medical tourism has been given various definitions in academic literature. Some of those definitions are more closely related to the destinations themselves, while others are more related to the activities of tourists. Bookman and Bookman (2007) described medical tourism as an economic activity that involves services trade in the economic sectors of medicine and tour-

ism. They also classified the services offered by medical tourism into invasive services, which include plastic surgery and dental work; diagnostic services, encompassing various screenings, tests, and checkups; and lifestyle medical tourism, which pertains to wellness and health enhancement (Bookman & Bookman, 2007). Other definitions have described medical tourism from the tourist perspective as the core of the process, regarding it as travel for the main purpose of seeking medical care (Wongkit & Mckercher, 2013) or enhancing physical and psychological health (Hong, Lim & Kim, 2007; Lee & Spisto, 2007).

While the existing literature proposes several definitions of medical tourism, little has been provided to describe the medical tourist. Woodman (2008) proposed an uncontroversial definition if the medical tourist as an individual who has traveled with the main goal of enhancing or maintaining their wellbeing. However, few researchers have taken their examination and classification of medical tourists to any greater depth.

The classifications of medical tourists are mostly based on the type of medical care pursued. Cormany (2008) proposed a classification which resulted in six, sometimes overlapping, categories, including necessary major surgery, necessary minor surgery, alternative therapy, and diagnostic checkups. Accordingly, the medical tourist’s needs, priorities, and expectations depend on such categories. For example, a person seeking alternative therapy would be more accepting of visa wait times than a person traveling to undergo major surgery. Similarly, a person traveling for the purpose of undergoing major surgery would be likely to give less priority to tourist activities than a person traveling for checkups because their stay would be mostly limited to post-surgery recovery.

Along the same lines, Diethelm Travel’s (2005) proposed two main types of medical tourists: those seeking minor surgery while enjoying leisure time at the destination and others pursuing predetermined course of medical care which represents the purpose of their trip with minimal leisure activities. Al-Hinaï, Al-Busaidi,

and Al-Busaidi (2011) proposed a classification that does not rely primarily on the type of surgery but rather on specific tourists' mobility. Accordingly, there are four categories of medical tourists – “temporary visitors abroad,” who travel temporarily for medical care; “long-term residents,” who change their residence to pursue a healthier lifestyle; “medical tourists from two adjacent countries” which share common borders and may have bilateral healthcare agreements; and “outsourced patients,” who are sent by their governments for medical treatment abroad.

A more comprehensive study conducted by Wongkit and Mc Kercher (2013) aimed to classify medical tourists in Thailand by focusing on vacationing and holidaying as elements of tourists' behavior and decision-making processes. Hence, the tourists were classified according to the purpose of their trip, on a medical-touristic level, and the decision horizon. On the one hand, there are “dedicated medical tourists,” who prioritize the medical purpose as their reason for traveling, and “hesitant medical tourists” with similar priorities but with after-arrival decisions. On the other hand, there are also “holiday medical tourists” and “opportunistic medical tourists” for whom holidaying is paramount, with varying pre-trip and on-site treatment decisions. The type of treatment was also considered by Wongkit and Mc Kercher (2013), with patients in the first two groups being more likely to receive invasive treatments than in the latter two groups.

Building on previous studies, Dryglas and Salama-ga (2018) provided a classification of tourists visiting spa resorts in Poland. Their research raised the bar in the field of health tourist studies on account of its use of factor-clustering methods to classify tourists according to their travel motives. Such segmentation resulted in three distinct segments: patient-tourist, patient, and tourist.

2.2. Common Travel Motivations in Medical Tourism

It has been well established that people engage in medical tourism, traveling, often large

distances, and crossing borders in pursuit of medical treatment which is either urgent or elective. Previous medical tourism studies have identified several reasons for such travel, the motivations behind which vary depending on the tourists themselves, their home country, and the destinations concerned. Central to this is the economic status of the home country and prices charged for healthcare services. Mainstream literature has associated medical travel with cost advantages (e.g., Awadzi & Panda, 2005; Connell, 2006; Reddy & Qadeer, 2010; Snyder, Crooks & Turner, 2011). For example, a patient would pay 40-60% less for a knee replacement surgery in India than in the United States (Puri, Singh & Yashik, 2010). According to Patients Beyond Borders (2020), American patients would save 40-75%, 45-80%, 50-85%, and 55-90% on certain procedures and specialty care in Barcelona, Mumbai, Kuala Lumpur, and Bali, respectively.

Medical tourism has also been associated with “out-of-pocket” payments (Connell, 2006; Crooks, Kingsbury, Snyder & Johnston, 2010; Ramirez de Arellano, 2007), often attributed to the lack of medical insurance in one's home country. In such case, the total cost of travel and pursuit of medical care abroad would still be more affordable. In this regard, insurance companies such as Blue Cross Blue Shield and Wellpoint have benefited from medical tourism by piloting programs and offering packages that encourage patients to get medical treatment abroad on a promise that they will have to pay less. Among the first programs offered is Companion Global HealthCare by BlueCross BlueShield of South Carolina (Deloitte, 2009; Pafford, 2009). However, it is argued that some administrative, legislative, and communication obstacles remain considering that the procedure is covered in a different country (Gill & Singh, 2011).

In addition to economic reasons, factors related to the healthcare system of the home country should also be noted. In countries such as Canada and the UK, patients may need to wait their turn and it can be a considerable amount

of time before they are able to undergo certain procedures. Hence, such patients select medical tourism options to avoid the long wait lists at home (Crooks et al., 2010; Horowitz, Rosensweig & Jones, 2007; Lunt et al., 2011). Moreover, the fact that certain procedures are unavailable or even restricted in many countries encourages certain patients to resort to medical tourism at destinations offering such procedures. An example are tourists who travel to destinations allowing treatments with stem-cell-derived products (Horowitz et al., 2007).

Anonymity, privacy, and confidentiality have also been cited in relation to medical tourism as motivational factors for seeking medical care in foreign destinations (Guy, Nevins Hanson & Dotson, 2015; Horowitz et al., 2007; Peters & Sauer, 2011). Patients would prefer to undergo medical or cosmetic procedures in a private environment and away from their social circle. Moreover, the element of combining vacationing with medical treatment creates a motivating factor for patients. This element has been recognized by destination management organizations (DMOs) and thus highlighted in destination promotional material. It has also been implemented by medical tourism suppliers. Namely, travel agencies promote packages that include sightseeing and leisure activities; moreover, some medical centers were established and designed to match luxurious hotels, such as the Bumrungrad International Hospital in Bangkok.

Compliance with international standards is an important success factor for medical institutions that target international patients. International accreditations such as the Joint Commission International (JCI) accreditation reflect quality and instill confidence and trust in patients seeking medical care in a foreign country (Patients Beyond Borders, 2014). The increased number of JCI-accredited medical centers, along with English-speaking physicians and medical staff who are often educated or trained abroad, inspire further confidence and trust, reduce the cultural barrier, and increase the willingness to travel abroad (Gill & Singh, 2011).

Another motivational factor worth mentioning is the availability of web-based and social media health information, provided to patients so that they can become better informed about their health-related options worldwide easily and conveniently (Guy et al., 2015).

2.3. Medical Tourism in Lebanon Under the Spotlight

Although one of the smallest countries in mainland Asia (10,452 KM²), Lebanon has managed to acquire a strong medical and tourism reputation in the region. Lebanon was ranked the healthiest Arab country according to the Bloomberg 2017 Healthiest Country Index (Ministry of Public Health, 2018) and has ISO and Joint Commission International (JCI) accredited medical centers. For example, the American University of Beirut Medical Center (AUBMC) is one of the most reputable in the region. It has earned JCI, Magnet[®], and the College of American Pathologists (CAP) accreditations and caters for 360,000 patient visits per year (AUBMC, 2018). Clemenceau Medical Center (CMC) is another state-of-the-art medical center located in Beirut that has earned the JCI accreditation. It provides a one-to-one nurse ratio and a luxurious hotel-like environment (CMC, 2014). According to the Medical Travel Quality Alliance (2019), the Clemenceau Medical Center in Beirut is ranked in the top 10 world's best hospitals that practice medical tourism.

According to Hassan and Noaman (2015), among the Arab countries, Lebanon ranks highest in attracting medical tourists with an average annual growth rate of 5.35% between 2007 and 2012. Moreover, the country has been regarded as one of the capitals of cosmetic tourism specifically (Holliday et al., 2013; Twigg, 2017). It is ranked fourth after South Korea, Taiwan, and Belgium (Twigg, 2017).

3. METHODOLOGY

A quantitative approach using a field survey questionnaire that was addressed to tourists visiting Lebanon for various medical purposes was

selected as the research method. The time horizon and sampling were adapted from Saunders, Lewis, and Thornhill (2019), which presents the arguments necessary for the design of the research method. Accordingly, the cross-sectional time horizon was selected, as the data collection for this study was required to be conducted once.

It is important to note that the situation analysis (SA) must be addressed to capture a more comprehensive picture of the competitiveness of medical tourism in Lebanon and its effect on the target segments. This entails that an analysis of the current market needs to be discussed, if it exists, or prepared, if it does not. Noaman and Chapuis (2021) conducted an analytical review of the medical tourism sector in Lebanon which can be used as supporting evidence for the current study. Accordingly, the main success factors for the Lebanese medical tourism can be summarized into medical expertise, language and communication skills within and outside the healthcare sector, as well as the country’s strategic geographic location, climate, and landscape. Meanwhile, the main barriers are the government’s lack of support, political instability, and weak tourism infrastructure. Hence, the competitiveness of Lebanon as a medical tourism destination and its ability to capture new target markets and sustain existing ones are shaped by the outcomes of its SA, which also influence the characteristics of its medical tourists. Throughout its research methodology, this study considers and analyzes the context of Lebanon’s SA.

3.1. Questionnaire Development and Data Collection

The questionnaire was first peer-reviewed by academics in the field of tourism to enhance its design and clarity while also ensuring that it fits closely with, and builds on, established academic literature and thought. The questionnaire included a section which recorded behavioral aspects of the medical tourists, another which measured their socio-demographic characteristics, and a section which captured the tourists’ motivations for seeking medical care abroad. Table 1 represents the research instruments and the literature they were

based on, in accordance with relevant sections of the questionnaire. An Arabic version of the questionnaire was checked by native Arabic-speaking academics who were also fluent in English. Questionnaire sections are presented in Appendix 1.

TABLE 1: Research instruments

Research variables	Sources in previous literature
Travel motivations	
Medical care abroad is cheaper than domestic care	Guy et al. (2015); An (2014); Crooks et al. (2010); Lunt et al. (2011); Horowitz et al. (2007)
Length of waiting time for domestic treatment	An (2014); Crooks et al. (2010); Guy et al. (2015); Lunt et al. (2011); Peters & Sauer (2011); Horowitz et al. (2007)
Inadequate domestic health insurance	An (2014); Crooks et al. (2010); Guy et al. (2015); Lunt et al. (2011); Peters & Sauer (2011)
Treatment that is unavailable domestically is available abroad	Guy et al. (2015); An (2014); Crooks et al. (2010); Peters & Sauer (2011); Horowitz et al. (2007)
Low success rate for the type of procedure performed	Guy et al. (2015)
Home doctor recommendation	Gill & Singh (2011)
Anonymity of treatment	Guy et al. (2015); Peters & Sauer (2011); Horowitz et al. (2007)
Demographic and behavioral variables	
Gender, age, education, and income	Guy et al. (2015); Gan & Frederick (2011)
Country of residence; Number of accompanying family members and friends	Lunt et al. (2011); Cortez (2008)
Prior medical travel	Yeoh, Othman & Ahmad (2013); Guy et al. (2015); Gan & Frederick (2011)
Type of medical procedure	Yeoh et al. (2013); Cormany (2008); Cortez (2008)
Trip budget	Horowitz et al. (2007)

Data were collected by means of a self-administered physical questionnaire from a sample of 212 tourists visiting Lebanon for medical purposes. To ensure a representative sample, participants were approached at various points including medical centers, clinics, hotels, and the international airport. Purposive sampling was applied in the research, with researchers contacting the management of medical centers and clinics for the purpose of obtaining consent and guidance for reaching out to international patients specifically. Moreover, opportunistic purposive sampling was utilized at the Beirut International Airport, where the researchers made use of the consent given for additional data collection.

To maintain their privacy and avoid the risk of exacerbating their medical status, only patients who were in full possession of their faculties and able to provide informed consent for their participation were contacted. Moreover, participants were given the option of filling out the questionnaire themselves or having the surveyor fill in their stated answers on their behalf.

3.2. Measurements

Preliminary analysis and screening of the data was first conducted using SPSSv20. The data was initially screened and examined in terms of outliers, missing values, and normality. SPSS did not plot any extreme case that required removing and measures for all variables were considered normal (no kurtosis score for any variable was greater than 3). This study followed concept 6 of the segmentation approaches proposed by Dolnicar (2004). Here, the first step consisted in performing a common-sense approach by which a segment of medical tourists was distinguished from other tourists. Within this segment, a data-driven approach was used to investigate further possible data-driven segments based on behavioral, geographic, and socio-demographic traits, as well as travel motivations.

The common-sense segmentation of medical tourists was performed in the data collection process. To investigate the data-driven seg-

ments of medical tourists, an exploratory analysis technique was required where the number of resulting segments is non-restrictive. Since the data contained categorical and continuous types, a two-step cluster analysis the selected technique because it relies on the log-likelihood method was (Chiu, Fang, Chen, Wang & Jeris, 2001), as opposed to others that rely on statistical measure of fit. The two-step cluster analysis is a hybrid approach which first uses a distance measure to separate groups and then a probabilistic approach to choose the ideal subgroup model (Kent, Jensen & Kongsted, 2014). Among its other advantages is the ability to handle large data sets (thousands of observations). This clustering method enabled a natural grouping and selection of the number of clusters that serve for the main purpose of this study.

The first step comprised data pre-clustering by means of sequential clustering approaches (Theodoridis & Koutroumbas, 1999), where all the data instruments (cases) are placed successively to form a datafile that compresses information about all the cases referred to as a cluster feature (CF) tree. This preculturing algorithm scans all the cases by applying the log-likelihood distance measure to determine the cases that can be merged together to form a pre-cluster which is then considered the raw case for the next sequential step.

The second step consisted in utilizing an agglomerative hierarchical clustering method to group the data into sub-clusters. This study used the Bayesian Information Criterion (BIC), proposed by Fraley and Raftery (1998), since it applies the penalty against complexity more strongly than the Akaike Information Criterion (AIC) (Akaike, 1973). First, the BIC was calculated for each number of clusters to determine the initial number of clusters. Since better models are attained by smaller values of the BIC, the next step was rationalizing the initial number of clusters. Rationalization was conducted by finding the maximum change in distance between the two closest clusters in each hierarchical clustering stage.

Similarities between the clusters were computed using a log-likelihood measure. To examine the significance of the correlation between medical tourist segmentation and the respective variables, Chi-square tests and T-tests were applied. The level of significance in this study was determined to be less than 0.05 ($p < 0.05$).

4. RESULTS AND DISCUSSION

Female medical tourists accounted for 54.7% of the sample, representing a major portion, with males accounting for the remaining 45.3%. The main differentiating aspect between the two genders is the type of treatment as most female medical tourists seek cosmetic surgery and treatment, while male medical tourists exhibit no increase in demand for a particular specialty but are rather spread across a variety of medical procedures. Moreover, younger tourists were dominant. Overall, the age of most medical tourists ranged between 25 and 44 years. The share of female respondents was also higher in younger age groups, with 72.9% and 48.5% tourists in the 25-30 and the 35-44 age groups, respectively, being female.

When it comes to the type of procedure sought, cosmetic surgery and treatment led all other types and specialties and was followed by dental care. While cosmetic treatment was predominantly sought by female respondents, dental treatment was slightly more male-dominant (6.6%).

When behavioral, socio-demographic, and motivational variables of respondents were tested for cluster differences, the auto-cluster application resulted in a two-cluster solution. Cluster one (segment one), comprising 72.4% of the sample, will be referred to as "international patients", while cluster two (segment two) will be referred to as "elective medical tourists", comprising 27.6% of the sample.

4.1. Segment One Profiling – International Patients

The characteristics and travel motivation of respondents in this segment give them the attri-

butes of patients to a large extent, hence they are referred to in this study as "international patients." The main criterion determining the respondents in this cluster was the nature of the medical treatment pursued as the vast majority are traveling for urgent and semi-elective types of surgeries and treatments. Neurological treatment ranked highest, followed by knee and joint surgeries, and cosmetic surgery. First-time medical travelers accounted for 57.1%. Most of the repeat travelers chose Lebanon as a destination in which to continue their medical care, while 20.4% considered Amman as an alternative for their medical treatment. The majority of respondents in this segment (61.2%) consider themselves moderately experienced in international travel. Most respondents traveled with either one or two companions, while solo travelers constituted a small percentage (3.4%). Their spending pattern was concentrated on medical matters, with 32.7% spending only 10% of their budgets on accommodation. The majority (31.3%) stayed in average hotels, followed by economy hotels (29.9%), and furnished apartments (26.5%). Moreover, most respondents (70.1%) arranged their accommodation by themselves and only 19% relied on the services of travel agents for accommodation arrangements (seeking the so-called all-inclusive packages).

Male tourists accounted for a slight majority in this segment (53.1%). The largest number of subjects (33.3%) belonged to the age group of 35- to 44-year-olds, with the average age of 42.54 years. In terms of the education level, college graduates constituted the highest proportion (44.2%), followed by respondents with some higher education (17%). The vast majority traveled from Iraq (49.7%), followed by a much smaller share of those who traveled from Syria (15.6%).

The primary travel motivation for segment one respondents is the low success rate for their type of treatment in their home country (mean = 3.76), followed by combining their treatment with a vacation (mean = 3.58), and their home

doctor's recommendation that they travel for treatment (mean = 3.05). The first and third factors indicate the inadequacy of the respondents' domestic healthcare systems, particularly with regard to their types of procedures which are mainly non-elective and possibly complex.

4.2. Segment Two Profiling – Elective Medical Tourists

The respondents of this segment are distinguished from others mainly by the elective nature in both medical and tourist aspects as they choose to travel for non-essential, often aesthetic, care. Thus, they are referred to in this study as "elective medical tourists." The elective types of treatments and surgeries pursued by such respondents include cosmetic surgery (37.5%), aesthetic treatment (33.9%), and dental treatment and surgery (14.3%). First-time medical travelers account for 60.7%. Most of the repeat travelers chose Lebanon again, while 18.2% considered Dubai, followed by Istanbul, as their second and third alternatives for medical care, respectively. The majority of respondents in this segment (66.1%) consider themselves to be ex-

perienced international travelers. Those traveling with only one companion accounted for the highest proportion of respondents (44.6%), with unaccompanied travelers constituting the second largest group (19.6%). The spending pattern of these respondents was split between medical and tourist matters as the majority (41.1%) spent 40% of their budget on medical costs. Likewise, the biggest bracket (26.8%) spent 20% of their budget on accommodation. Most of them (42.9%) stayed in average hotels and a significant portion (25%) stayed in luxury hotels. Moreover, more than a half of the respondents (53.6%) arranged their accommodation by themselves, while 35.7% relied on travel agency services for accommodation arrangements.

This segment is dominated by female tourists (83.9%). Younger individuals constituted the majority, with 60.7% and 32.1% respectively being 25-34 and 35-44 years old. In terms of their level of education, college graduates accounted for the largest group (66.1%), followed by graduate degree holders (26.8%). Travelers from Kuwait ranked first (25%), followed by those from Jordan (10.7%) and France (10.7%).

TABLE 2: Typical "international patient" and a typical "elective medical tourist"

	Typical "international patient"	Typical "elective medical tourist"
Gender	Male	Female
Age	40	31
Type of medical procedure	Neurological treatment	Cosmetic surgery
Highest level of education	Bachelor's degree	Bachelor's degree
% of budget spent on medical matters	70%	50%
% of budget spent on accommodation	10%	20%
Country of residence	Iraq	Kuwait
Type of accommodation	Average hotel (3-star-hotel)	Average hotel (3-star-hotel)
Travel arrangement	Self-arrangement	Self-arrangement
Number of accompanying members	2	1
Travel experience	Moderate	Experienced
Alternative destination for medical care	Amman, Jordan	Dubai, UAE
Travel motivation	Low success rate for the type of treatment in home country	Combining treatment with a vacation

4.3. Discussion

Combining treatment with a vacation seemed to be the primary motivation for segment two (mean = 4.25), with price as another strong motivator given that cheaper medical care abroad ranked second among other motivational factors (mean = 3.48). Anonymity is another influencing motivational factor for medical travel (mean = 3.23), followed by inadequacy (perceived or real) of domestic health insurance (mean = 3.09). Most respondents in this segment sought surgical procedures and types of treatment typically not covered by medical insurance and, in any case, only 3.6% had medical insurance.

The characteristics of a typical medical tourist for both segments are shown in Table 2.

It can be observed that international patients travel to Lebanon for various types of surgical procedures and treatment, ranging from urgent e.g., neurological treatment, to elective procedures, such as cosmetic surgery. Elective medical tourists predominantly seek cosmetic surgery and aesthetic treatment, followed by dental treatment. Amman is regarded as the alternative destination of choice for international patients, with Dubai and Istanbul as alternative destinations for elective medical tourists. This fact suggests that Dubai and Istanbul are competitive regional destinations for cosmetic tourism.

Moreover, budget is spent varyingly between segments. International patients spend the bulk of their budget on medical matters, with the majority spending 75% or more on medical expenses. In comparison, none of the elective medical tourists spent a similar amount on their medical costs. It is worth noting that 96.4% of the elective medical tourists do not have any insurance coverage in Lebanon. As for accommodation, most respondents in both segments

stay in average hotels. Luxury hotels are the main choice among elective medical tourists (25%), a segment that pays more for comfort, while furnished apartments mostly attracting international patients (26.5%). The choice of furnished apartments seems reasonable as medical tourists in segment one travel accompanied (36.1% travel with two and 24.5% travel with more than two companions). Moreover, elective medical tourists are found to rely on the services of travel agencies more than international patients.

Furthermore, there are significant socio-demographic differences between the two segments. Most international patients are male with a difference of 6.2%, whereas most elective medical tourists are female with a difference of 67.8%. The latter medical tourists tend to be more educated and are more likely to hold graduate degrees (26.8%). The highest proportion of the international patients is accounted for by residents of Iraq and Syria, while residents of Kuwait, Jordan, and France hold the highest proportion of elective medical tourists.

International patients are chiefly motivated to travel abroad to avoid the low success rate of their treatment at home. Thus, they opt for medical quality and travel in the hope of achieving better medical results in Lebanon. On the other hand, they are the least motivated to travel on account of the prices in Lebanon which they perceive to be higher than domestic prices (mean = 2.14). On the contrary, elective medical tourists are motivated to travel on account of lower prices (mean = 3.48). Therefore, respondents of the former segment travel in pursuit of better quality, whereas respondents of the latter segment travel in pursuit of lower prices. This is a very important distinction. Table 3 presents mean comparisons and differences with respect to the travel motivations for both segments examined.

TABLE 3: Mean comparisons and differences for both segments' travel motivations

Travel motivation	International patients			Elective medical tourists		
	Mean	Std. Deviation	Std. Error Mean	Mean	Std. Deviation	Std. Error Mean
Medical care abroad is cheaper than domestic care	2.136054	0.873032	0.072006	3.482143	1.061578	0.141859
Length of waiting time for domestic treatment	2.918367	1.030429	0.084988	2.589286	1.057902	0.141368
Inadequate domestic health insurance	2.619048	1.087496	0.089695	3.089286	1.06646	0.142512
Treatment that is unavailable domestically is available abroad	2.870748	1.001862	0.082632	1.946429	0.772708	0.103257
Low success rate for the type of procedure performed	3.755102	0.864774	0.071325	2.964286	1.026278	0.137142
Home doctor recommendation	3.054422	1.071309	0.08836	2.196429	0.772708	0.103257
Anonymity of treatment	2.428571	0.986206	0.081341	3.232143	0.990704	0.132388

A deeper analysis of both segments' profiles suggests that the deteriorating medical system in some countries compels people to travel abroad to undergo certain procedures with higher success rates, which can be the case for international patients. Meanwhile, elective medical tourists willingly travel of their own consumer choice. This is reflected in the type of treatment, accommodation choice, and spending pattern on medical versus non-medical matters. On a patient-tourist scale, a typical respondent from the international patient segment can be characterized as a patient more than a tourist, whereas a typical respondent from the elective medical tourist segment can be characterized as a tourist more than a patient.

4.4. Medical Tourism in Lebanon – Situation Analysis

According to the World Health Organization (WHO), Lebanon healthcare expenditure increased at an average annual rate of 2.05% from 2000 to 2019 to reach USD 663 per capita. Lebanon now spends more than 8% of its GDP on

healthcare services. This is a higher rate than in the neighboring countries of the MENA region. Lebanon has a hospital bed density of 2.5 beds per 1,000 individuals and a physician ratio of 2.6 physicians per 1,000 individuals. Both rates are among the higher rates in the MENA region (WHO, 2021).

According to Hassan and Noaman (2015), medical tourism in Lebanon can be attributed to three main reasons. The first is the lack of coverage of the medical treatments undertaken by the patient's local medical insurance. Citizens of several countries visit Lebanon to undergo elective treatment, such as cosmetic and dental treatment, which is not usually covered by their local health insurance. The second refers to the types of treatment performed and their associated prices. Compared to its neighboring countries (UAE, Syria, and Jordan), Lebanon's prices of medical services fall between Dubai's (being the most expensive) and Jordan's (being less expensive). The third, and final, reason is that Lebanon's well-established and reputable healthcare system is recognized for excellence

in specialized medical procedures. There are 11,505 doctors and surgeons providing health-care services in Lebanon, with 85% of them specializing in one field and 15% in more than one field (Hassan & Noaman, 2015). Moreover, Lebanon is a donor country of physicians (Akl et al., 2008). Around 40% of graduating physicians from Lebanese medical universities have practiced medicine in the U.S. over the past 25 years (Sayegh & Badr, 2012). This has contributed to establishing the credibility of Lebanese healthcare providers as well as networks and contacts for both patients and providers. The rich medical heritage in various specialties, along with a regional reputation as a medical and tourism hub, offer a promise on the horizon for development of Lebanon's medical tourism market.

5. THEORETICAL CONTRIBUTIONS AND PRACTICAL IMPLICATIONS

This study presents a new segmentation method that has not been researched in the field of medical tourism and can be regarded as a unique contribution to the segmentation literature particularly in tourism marketing. Building on the work of Cormany (2008), Bookman and Bookman (2007), and Wongkit and McKercher (2013), the study applies a data-driven approach to segmentation which yields more realistic segments with less heterogeneity within single segments. Nevertheless, the criterion of the type of medical treatment pursued, which differentiated both resulting segments distinctively, confirms the effectiveness of the previously used *a priori* approaches that segmented medical tourists on such basis. The study also contributes to Dryglas and Salamaga (2018) by providing a more in-depth understanding of the diversities and personas of medical tourists. Consistent with Dryglas and Salamaga (2018), it confirms the role of motivations in medical tourism segmentation. Yet, it also analyzes motivations in line with other characteristics to provide a detailed depiction of such segments.

While Dryglas and Salamaga (2018) focused on health tourists visiting spas, this study examines medical tourists traveling for a diverse range of healthcare purposes, thus incorporating a wider motivation scope.

The findings of this study have significant managerial implications for medical tourism service providers at both individual business and national level. The types of medical treatment constitute a distinctive criterion for medical centers. Elective medical tourists mainly pursue cosmetic and aesthetic treatments and tend to be driven by the price of such treatment. While price is a major motivating factor behind travel in that segment, international patients pursue more complex and urgent procedures and are driven by medical quality and the likelihood of better outcomes. Moreover, the segment of international patients accounts for a major share of the medical tourism market and those within it are willing to allocate a larger portion of their budget to medical matters. Such traits make this segment a lucrative target for medical centers that are specialized in the corresponding types of non-elective medical treatments.

Nevertheless, those traits do not imply that providers should look to increasing prices of medical services. As the majority of respondents in this segment travel from developing countries, any such increases may affect their destination choice significantly and shift it towards cheaper destinations.

The lack of information about destination resources and offers can impact medical tourists' decisions and cause them to opt for other destinations. Thus, services offered by specialized medical brokers and medical travel agents to offshore patients can be decisive in the decision-making process.

There is a significant difference between visitors who booked their accommodation individually (60.9%) and those who booked it through a travel agent (19.4%) or a medical broker (13.5%). This difference is visible in both segments. Even first-time medical tourists (66.9%) who were un-

familiar with the destination booked their own accommodation. This can be explained by the lack of information, advertising, cost, and/or services offered by travel agents. Moreover, this suggests that Middle Eastern medical tourists may be becoming more confident and frugal in planning their travel.

Elective medical tourists constitute an attractive segment to travel agents for two reasons. The first is their spending pattern, as they tend to allocate a bigger portion of their budget to accommodation (luxury hotels) and tourist matters. The second is the nature of their medical treatment, as elective procedures facilitate conducting tourist activities pre- or post-treatment, or both. Both reasons create opportunities for planning tourist activities for elective medical tourists. Therefore, medical tourism packages, particularly cosmetic tourism packages, that target feeder markets and offer various price ranges are a suitable and attractive option for both providers and clients.

Irrespective of the means of booking, the majority of medical tourists in both segments (69.1%) spend 10-20% of their budget on lodging. This in turn brings a significant benefit to lodging suppliers, particularly hotels and furnished apartments in close proximity to medical centers. The data reveals that luxury hotels accommodate a larger portion of elective medical tourists, while international patients travel with more companions and tend to choose average hotels and furnished apartments. The likely reason is to cater for the needs of the companions, provide extra room space, a more comfortable environment, and to allow for a greater variety of food and beverage options.

Some medical tourism destinations are known for their particular features, such as low prices or distinctive medical quality; Lebanon's medical tourism appears to combine both, depending on factors such as the type of medical procedure being undertaken. As there are two distinct segments with different traits and motivations, Lebanon's image as a destination for medical tourism needs to be designed by

considering both, along with the motivational factors of medical tourists. Hence, the market image needs to be dynamic to convey the aspect of affordable prices and that of an enjoyable vacation destination for elective medical tourists. For international patients, this image would need to focus on the access to reputable medical centers and highly qualified physicians.

From a destination management organization (DMO) perspective, differences between the segments entail highlighting growth in products and services (such as high-level post-operative care) that differentiate the destination as well as ancillary products and services that communicate convenience and comfort (such as home-like accommodation). Along such lines, the DMO can establish a base for branding and positioning the destination in the international market. With respect to advertising, as some typical, generalized, and product-specific approaches have been common for medical tourism destinations, the DMO needs to ensure that the advertised images of the destination are specific enough to differentiate the destination's offering and allow prospective travelers to identify and link the message to the destination. On the other hand, the diversity of medical tourists' characteristics should not deter from promoting packages as they remain a convenient choice. However, such packages need to consider individual needs and have a level of flexibility and freedom of choice without compromising medical quality.

6. CONCLUSIONS, LIMITATIONS, AND PROSPECTS FOR FUTURE RESEARCH

This research study revealed two distinct segments of medical tourists visiting Lebanon with their specific characteristics and motivations with regard to the type of treatment sought. The "international patients" pursue urgent and semi-elective types of surgery and treatment, allocate a larger portion of their trip budget to

medical matters, and travel with one or more companions. The “elective medical tourists” pursue elective surgery and treatment, mainly cosmetic procedures, spend a larger portion of their budget on tourist matters including accommodation, and mostly travel with either one or no companion. An analysis of both segments yields valuable empirical applications for medical providers, hoteliers, and those involved in the medical tourism industry.

In addition to providing a preliminary understanding of the Middle Eastern medical tourist, this study provides a foundation for segmentation analysis in the field of medical tourism and particularly in the Middle Eastern region. Moreover, the segmentation method used in this study can be applied in classifying medical tourists of other destinations and markets.

This research should be repeated in other MENA countries with established medical tourism industries to identify wider patterns of consumer behavior and to allow for the greater specialization of those markets. The unstable geopolitical and economic contexts of Lebanon had a direct

impact on the tourism sector including medical tourism, a fact that limited the researchers’ abilities to reach a larger sample of medical tourists. During the data collection process, researchers experienced inadequate cooperation and delays from a few medical centers, a situation that impeded them from reaching a bigger sample of medical tourists and compelled them to seek alternative channels of data collection such as hotels located in areas surrounding targeted medical centers. Accordingly, the researchers had to utilize opportunistic purposive sampling and make decisions regarding other data collection possibilities in different conditions. Moreover, to attain real and factual answers, data were collected personally from medical tourists using the paper-and-pen instrument. With all its advantages, this process chosen by the researchers was time- and resource-intensive.

Further research can be carried out using other segmentation methods and techniques, along with an examination of medical tourists’ behavior and its relation to destination marketing and destination image.

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APPENDIX: QUESTIONNAIRE**Part I: About your trip**

Please respond to the following questions by checking (X) in the box that corresponds to your answer.

1. Before this trip, have you ever traveled outside your place of residence for medical services?

 Yes No
2. If yes, to which country/countries? _____
3. How many family member(s) or friend(s) are traveling with you?

 0 1 2 more than 2
4. Is your accommodation affiliated with the medical institution?

 Yes No
5. You (and your family) are staying in

 Luxury hotel Midscale hotel Economy hotel Furnished apartment Other: please specify_____
6. Your total budget for this trip ranges between

 \$3,000-\$5,000 \$5,000-\$8,000 \$8,000-\$12,000 \$12,000-\$20,000 More than \$20,000
7. Of this budget, you are allocating approximately up to ____ % for medical purposes

 25% 40% 50% 75% 100%
8. Of this budget, you are allocating approximately _____% for accommodation

 5% 10% 15% 20% 25% More than 25%
9. Who arranged your travel plans?

 Yourself Medical institution Travel agent Other: please specify_____
10. What medical procedure are you pursuing?

 Heart surgery Laparoscopic surgery

 Hip surgery Obesity surgery

 General surgery Dental surgery/treatment

 Knee and joint surgery Infertility treatment

 Tumor treatment Neurological treatment

 Cosmetic surgery. Specify_____ Scans/investigations

 Aesthetic treatment Other: Specify _____
11. Do you have any insurance coverage for this particular medical procedure in Lebanon?

 Yes No
12. Before choosing Lebanon, you were thinking of going to ___ for your medical treatment

 No other country Amman, Jordan Dubai, UAE Istanbul, Turkey Riyadh, KSA Other: Specify_____

Part II: Seeking medical care abroad

This part aims to measure the reasons that made you travel abroad for medical care.

13. The below reasons are the most influential to your decision in seeking medical care abroad. Please indicate your level of agreement with the following statements by circling the appropriate number from 5 ("strongly agree") to 1 ("strongly disagree").

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Medical care abroad is cheaper than domestic care	5	4	3	2	1
Length of waiting time for domestic treatment	5	4	3	2	1
Inadequate domestic health insurance	5	4	3	2	1
Treatment that is unavailable domestically is available abroad	5	4	3	2	1
Low success rate for the type of procedure performed	5	4	3	2	1
Home doctor recommendation	5	4	3	2	1
Anonymity of treatment	5	4	3	2	1

Part III: About you

Please respond to the following questions by checking (X) in the box that corresponds to your answer

14. Gender

Male Female Prefer not to answer

15. Age: _____ years

16. What is your country of residence? _____

17. What is your highest level of education?

Have not completed high school High school diploma Some higher education College graduate Graduate degree

18. Approximately, what is your annual household income before taxes? _____

19. Experience with travel: How many times a year did you travel for leisure or business in the last three years?

_____ times

20. How would you consider yourself as an international traveler?

Inexperienced Moderately experienced Experienced

Thank you for your time, cooperation, and participation in this study.

----- Enjoy your stay in Lebanon -----